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Document No. \_\_\_\_\_

## SHIMADZU SPECTROPHOTOMETER UV-1900i Operational Qualification

### Operational Qualification Report

System Name Spectrophotometer UV-1900i

System ID No. \_\_\_\_\_

Installation Site P1 Mersiforma Tirmayu Mercusana - RND

The undersigned performer reports that the Operational Qualification Protocol has been successfully completed for the system stated above.

- Performer



**P.T. DITEK JAYA**  
**JAKARTA-INDONESIA**

Date

11 / 06 / 2021

Print Syulka Elca Putri

Company Pt Ditek Jaya

The undersigned reviewer and manager report that the performer has completed the Operational Qualification Protocol successfully.

- Reviewer

Signature \_\_\_\_\_

Date

Print \_\_\_\_\_

Company \_\_\_\_\_

- Manager

Signature \_\_\_\_\_

Date

Print \_\_\_\_\_

Company \_\_\_\_\_

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## 1. Definitions

### 1-1 Documentation

1. The purpose of this document is to record the results of the Operational Qualification (OQ) Protocol implemented on the Shimadzu UV-Vis Spectrophotometer. If the tests pass the criteria and the results have been approved, it has been verified that the instruments operate properly in accordance with their intended purpose.
2. The following are established as the responsible parties in the execution of inspections.
  - **Performer**  
The Performer is the individual who actually performs the procedures stipulated in the Installation Qualification Protocol and the Operational Qualification Protocol.  
The Performer shall either be an individual who, having been trained by the Quality Assurance Department of the Analytical & Measuring Instruments Division of Shimadzu Corporation, has been certified as an IQ/OQ inspector by the General Manager of the Quality Assurance Department; or, an individual recognized by the Manager as having the ability to conduct this test.
  - **Reviewer**  
The Reviewer is the individual designated by the Manager to be in charge of the system.  
The Reviewer verifies the contents of the Installation Qualification Protocol and Operational Qualification Protocol. In addition, the Reviewer shall attend the test procedures together with the Performer, and evaluate the procedures.  
The Manager can serve concurrently as the Reviewer.
  - **Manager**  
The Manager is the individual responsible for administering the entire UV-VIS system being tested.  
As well as verifying the contents of the Installation Qualification Protocol and Operational Qualification Protocol, the Manager shall also grant final approval to the test procedures.
3. The **Performer** shall check each instrument and implement tests in accordance with the procedures described in the Operational Qualification Protocol (Document No. \_\_\_\_\_). After checking all items, the Performer shall sign and date the cover sheet of this document and submit this document as a report. (OQ must be performed by a trained and knowledgeable individual in accordance with 21 CFR Part 211 Section 211.25 (cGMP, USA promulgated 29 September 1978)).
4. The **Reviewer** shall check the entire contents of this document beforehand. After each test item is implemented, the Reviewer shall check its result. After checking all test items, the Reviewer shall sign and date the cover sheet of this document as approval of the Operational Qualification.
5. The **Manager** shall check the entire contents of this document beforehand. After all tests for the Operational Qualification Protocol have been implemented, the Manager shall check their results. The Manager shall then enter a unique document control No. in the Document No. column at the top right of the cover sheet, and then sign and date the cover sheet of this document as final approval of the Operational Qualification Protocol.
6. This document is comprised of 1. Definitions, 2. Preliminary Checks, 3. Operational Qualification Record and 4. Attached Documents. All of these sections must be included.
7. This document contains important information and any form of duplication, photography, or reproduction without the permission of the General Manager of the Quality Assurance Department, Analytical & Measuring Instruments Division, Shimadzu Corporation, is prohibited. However, the records of the tests conducted using this document may be duplicated at the discretion of the Manager.

Comment

☐ N/A

## 1-2 Scope

This OQ test shall apply to the equipment installed at the following site.

(Address): Ruko Brickhouse, Jl. Raya Bogor km. 31, No 52.

Cisate - Sukmajaya - Depok - 16416.

(Company): Pt Mersifarma Tirta Sari Mersana - PnD

(Department): PnD

Comment

☐ N/A

### 1-3 Entries and Revisions

#### 1. Making Entries

Use a black permanent ballpoint pen, or equivalent, when recording results.

Names should be clearly printed.

Confirm that all items, except "Remarks" columns, are completed, and that there are no omissions.

Draw a diagonal line (from bottom left to top right) across all blank columns.

Columns in which nothing has to be written in have been filled in with "N/A" in advance.

If choices are available within an item, place a checkmark in the box to select the appropriate decision.

#### 2. Rounding of numeric values

If there are more significant figures in the measurement results than the pass criteria, round off the final answer to bring it in line with the number of figures required for the pass criteria. For example, if the pass criterion is defined down to 0.1, but the answer is given down to 0.01, round off the answer.

#### 3. Deletion and correction of mistakenly filled items

To correct mistaken entries, delete the entire entry by drawing a diagonal line through it and enter the correction in the margins. To correct numerical values or symbols (checkmarks), draw 2 horizontal lines across the mistake and re-write the entry. Moreover, write the date, the signature, and the reason for the change in the comment column.

#### 4. Changing or deleting steps, procedures or acceptance criteria

If there are parts of the steps or procedures which will not be applied, draw a diagonal line through the entire item and enter the necessary information in the comment column.

When making a change, delete the existing description as explained above. Write down the reason for the change in the comment column, sign and date it.

#### 5. Revising entries

If the need to alter the contents of an entry arises, change the entry in accordance with "3. Deletion and correction of mistakenly filled items", and then write the reason for the change in the comment column.

When adding a new description, write the reason for the change in the comment column, sign and date it.

#### 6. Handling Problems

Any problems that are identified in the Operational Qualification must be investigated and appropriate actions must be taken. All such actions must be documented and be approved by the Manager.

#### 7. In the event of a Fail

If problems occur during a test and the item fails the test, place a checkmark in the "Fail" box. Describe the problem in the comment column of the relevant page, sign and date the entry.

After the problem is solved, describe the solution and the result ("Pass") in the comment column of the relevant page, sign and date the entry.

#### 8. Adding Pages

In the implementation of the above-mentioned items 3. - 7., extra pages can be added if necessary. To make an extra page, add a letter of the alphabet starting with A after the page number (e.g., 5-A) and insert the additional page after the relevant page. Make sure to put the new page number to the Table of Contents.

#### 9. Attaching data

Attached data is added by assigning page numbers as "A, B, C..." for each test item. If, for example, there is a total of 3 sheets for attachment A, notate the pages as "A-1/3 - A-3/3", ensuring that no numbers are omitted. The Performer shall date and sign the attached data.

Comment

☐ N/A

## 2. Preliminary Checks

### 2-1 Designation and Recording of Reviewer

Before implementing this test, the Manager shall enter the name of the designated Reviewer

**Reviewer**

Name: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Use the space below to enter more than one Reviewer. If it is left blank, put a checkmark in the "Not applicable" box.

**Reviewer 2** (☐ Not applicable)

Name: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

**Reviewer 3** (☐ Not applicable)

Name: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Comment

☐ N/A

## 2-2 Performer Identification and Approval

The Performer is identified and approved in this section. Choose the entry section according to how the Performer was appointed.

If the document (Operational Qualification Protocol) is revised by someone other than the certified Performer listed in the form below, be sure to record the change of the Performer (including Certificate No.) in the Change List of the Operational Qualification Protocol.

☒ If the Performer is a service engineer authorized by Shimadzu Representative, complete the following.

☐ Not applicable

This is to certify that the below-signed person has received training in the Quality Assurance Department of the Analytical & Measuring Instruments Division of Shimadzu Corporation. The person has been certified by the General Manager of the Quality Assurance Department as a qualified IQ/OQ Inspector, as proven by the certificate. The person performs the Operational Qualification Protocol as the Performer.

### Performer

Name: Sylvia Eka Putri

Date: 11 / 06 / 2024

Company name: PT Dink Jaya

Certificate No.: 212112023

Signature: [Signature]

Use the space below to enter more than one Performer. If it is left blank, put a checkmark in the "Not applicable" box.

### Performer 2 (☒ Not applicable)

Name: \_\_\_\_\_

Date: - / - / -

Company name: \_\_\_\_\_

Certificate No.: \_\_\_\_\_

Signature: \_\_\_\_\_

### Performer 3 (☒ Not applicable)

Name: \_\_\_\_\_

Date: - / - / -

Company name: \_\_\_\_\_

Certificate No.: \_\_\_\_\_

Signature: \_\_\_\_\_

The above-signed persons are hereby recognized as Certified IQ/OQ Inspectors and approved to perform the Operational Qualification Protocol as the Performer.

### Reviewer

Signature: \_\_\_\_\_

Date: - / - / -

### Manager

Signature: \_\_\_\_\_

Date: - / - / -

Comment

☐ N/A

☐ If the **Performer** has been appointed by the **Manager**, complete the following. ☒ ~~Not applicable~~

**Performer**

Name: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Company name: \_\_\_\_\_

Signature: \_\_\_\_\_

The above-signed person is hereby recognized as a Certified IQ/OQ Inspector and approved to perform the Operational Qualification Protocol as the **Performer**.

**Reviewer**

Signature: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

**Manager**

Signature: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Comment

☒ N/A

### 2-3 Planning Items to be Evaluated in Operational Qualification

Prior to implementing this operational qualification, check the system configuration and determine the component and system items to be evaluated. For items not to be evaluated, put a checkmark in the "Not applicable" box in the next chapter -3. Operational Qualification Record.

Purpose of implementing this test

- ☐ New installation      ☒ Periodic inspection      ☐ Installation of additional optional equipment  
☐ Repair      ☐ Replacement  
☐ Other ( N/A )

Comment

☐ N/A

Performer (signature)

S

Date: 11 / 06 / 2015

Reviewer (signature)

Date:   /  /

## 2-4 Calibration Certificate and Instruments Used

This section lists the instruments and reagents used for this inspection. Shimadzu will submit copies of traceability certificates or quality assurance documents if instruments managed by the Shimadzu Representative are used for the test. However, the customer's calibrated instruments can be used, providing that their guaranteed performance meets the specification requirements.

## (1) Instruments supplied by Shimadzu Representative

## (1) Instruments for which traceability certification will be submitted

Shimadzu will provide copies of traceability certificates for the following instruments managed by the Shimadzu Representative.

\* Neutral Density Filter (10%T, 30%T) for use in the visible region ☐ No ☒ Yes

|                                                                    |                                 |                             |
|--------------------------------------------------------------------|---------------------------------|-----------------------------|
| <input checked="" type="checkbox"/> Instrument name: <u>Hellma</u> | Model: <u>666-F3</u>            | Sample number: <u>NA</u>    |
| Control number: <u>666 5000</u>                                    | Inspection date: <u>10-2024</u> | Expiry date: <u>10-2025</u> |
| <input checked="" type="checkbox"/> Instrument name: <u>Hellma</u> | Model: <u>666-F4</u>            | Sample number: <u>NA</u>    |
| Control number: <u>666 5000</u>                                    | Inspection date: <u>10-2024</u> | Expiry date: <u>10-2025</u> |

\* Wavelength Reference (Holmium Perchlorate) ☐ No ☒ Yes

|                                                                    |                                 |                             |
|--------------------------------------------------------------------|---------------------------------|-----------------------------|
| <input checked="" type="checkbox"/> Instrument name: <u>Hellma</u> | Model: <u>666-F1</u>            |                             |
| Control number: <u>666 5000</u>                                    | Inspection date: <u>10-2024</u> | Expiry date: <u>10-2025</u> |

\* Temperature-controlled cell holder ☐ No ☐ Yes

|                                                                  |                        |                    |
|------------------------------------------------------------------|------------------------|--------------------|
| <input type="checkbox"/> Instrument name: <u>Cell positioner</u> | Model: <u>CPS-240A</u> |                    |
| Control number: _____                                            | Inspection date: _____ | Expiry date: _____ |

\* Thermometers ☐ No ☐ Yes

|                                                 |                        |                    |
|-------------------------------------------------|------------------------|--------------------|
| <input type="checkbox"/> Instrument name: _____ | Model: _____           |                    |
| Control number: _____                           | Inspection date: _____ | Expiry date: _____ |
| <input type="checkbox"/> Instrument name: _____ | Model: _____           |                    |
| Control number: _____                           | Inspection date: _____ | Expiry date: _____ |

\* Resistance temperature sensor ☐ No ☐ Yes

|                                                 |                        |                    |
|-------------------------------------------------|------------------------|--------------------|
| <input type="checkbox"/> Instrument name: _____ | Model: _____           |                    |
| Control number: _____                           | Inspection date: _____ | Expiry date: _____ |
| <input type="checkbox"/> Instrument name: _____ | Model: _____           |                    |
| Control number: _____                           | Inspection date: _____ | Expiry date: _____ |

\* Thermocouples ☐ No ☐ Yes

|                                                 |                        |                    |
|-------------------------------------------------|------------------------|--------------------|
| <input type="checkbox"/> Instrument name: _____ | Model: _____           |                    |
| Control number: _____                           | Inspection date: _____ | Expiry date: _____ |
| <input type="checkbox"/> Instrument name: _____ | Model: _____           |                    |
| Control number: _____                           | Inspection date: _____ | Expiry date: _____ |

Comment

☒ N/A

## (2) Items supplied by customer

|                                           |                                        |                              |
|-------------------------------------------|----------------------------------------|------------------------------|
| * Electronic balance                      | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes |
| <input type="checkbox"/> Instrument name: | Mettler                                |                              |
| Control number:                           | Inspection date:                       | Expiry date:                 |

## 2-5 Other Required Items

Other equipment and solvent to be used for the tests are listed below.

These items are required to be provided by customer. If this is not possible, please contact our service representative.

## (1) Items to be prepared by the customer

## \* Equipment

- ☐ 2 Beakers (capacity approx. 50 mL) : For Syringe Sipper type N/CN test

## \* Reagents and Solvent

- ☐ Distilled water, 2L : For Syringe Sipper N/CN test  
☐ Hexane solution, 4mL : For spectrophotometer "resolution (absorbance ratio)" test  
☐ Toluene/hexane solution (0.02%v/v), 4mL : For spectrophotometer "resolution (absorbance ratio)" test

## (2) Items to be supplied by the Shimadzu Representative

## \* Reagents

- ☐ Potassium dichromate  $K_2Cr_2O_7$ , 50mg : For Syringe Sipper N/CN test  
☐ Perchloric acid  $HClO_4$  (60%), 200 mg : For Syringe Sipper N/CN test  
☐ KCl aqueous solution (12g/L), 4mL : For spectrophotometer "stray light" test  
☐ NaI aqueous solution (10g/L), 4mL : For spectrophotometer "stray light" test  
☐  $NaNO_2$  solution (50g/L), 4mL : For spectrophotometer "stray light" test

## \* Other

- ☐ Quartz cell : For spectrophotometer "stray light" and "resolution (absorbance ratio)" tests  
☐ Semi-micro cell [P/N 200-66501] : For Syringe Sipper CN test  
☐ Shutter block [P/N 202-30338] : For spectrophotometer "stray light" test

Comment

☒ N/A

The equipment, reagents, tools, and misc. items described in Sections 2-5 and 2-5 are approved for use in the inspections.

Performer (signature)

*[Signature]*

Date: 11 / 06 / 2015

Reviewer (signature)

Date: / /

### 3. Operational Qualification Record

If a check item for the system configuration is not applicable, be sure to place a checkmark in the appropriate checkbox.

In this chapter (Chapter 3-Operational Qualification Record), test results are recorded according to the procedure described in Chapter 4 (4.Operational Qualification Protocol) of the Operational Qualification Protocol.



### Operational Qualification Record

| No. | Item                                              | Acceptance Criteria and Test Value                                     |                      |           |          |                                     | Pass                     | Fail                                | N/A                      |                          |
|-----|---------------------------------------------------|------------------------------------------------------------------------|----------------------|-----------|----------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|
| 3-1 | Wavelength accuracy check (D2 lamp emission line) | Error between the reference wavelength<br>$\leq \pm 0.30$ nm           | Reference wavelength | Result    | Error    |                                     |                          | <input type="checkbox"/>            |                          |                          |
|     |                                                   |                                                                        | 486.0 nm             | 486.0 nm  | 0.0 nm   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |                          |                          |
|     |                                                   |                                                                        | 656.1 nm             | 656.1 nm  | 0.0 nm   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |                          |                          |
| 3-2 | Wavelength accuracy check (standard filter)       | Error between the reference wavelength<br>$\leq \pm 0.50$ nm           | Reference wavelength | Result    | Error    |                                     |                          | <input type="checkbox"/>            |                          |                          |
|     |                                                   |                                                                        | 279.30 nm            | 279.22 nm | 0.08 nm  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |                          |                          |
|     |                                                   |                                                                        | 360.85 nm            | 360.82 nm | 0.003 nm | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |                          |                          |
|     |                                                   |                                                                        | 453.55 nm            | 453.46 nm | 0.09 nm  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |                          |                          |
|     |                                                   |                                                                        | 536.40 nm            | 536.40 nm | 0.0 nm   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |                          |                          |
|     |                                                   |                                                                        | 637.75 nm            | 637.71 nm | 0.04 nm  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |                          |                          |
|     |                                                   |                                                                        |                      |           |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                     |                          |                          |
|     |                                                   |                                                                        |                      |           |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                     |                          |                          |
|     |                                                   |                                                                        |                      |           |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                     |                          |                          |
|     |                                                   |                                                                        |                      |           |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                     |                          |                          |
|     |                                                   |                                                                        |                      |           |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                     |                          |                          |
|     |                                                   |                                                                        |                      |           |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                     |                          |                          |
|     |                                                   |                                                                        |                      |           |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                     |                          |                          |
| 4   | Wavelength repeatability                          | Deviation from the average of the three measurements $\leq \pm 0.2$ nm |                      |           |          |                                     |                          |                                     | <input type="checkbox"/> |                          |
|     |                                                   | Measurement wavelength                                                 | 1 st                 | 2 nd      | 3 rd     | Average                             | Max. deviation           |                                     |                          |                          |
|     |                                                   | 486.0 nm                                                               | 486.0 nm             | 486.0 nm  | 486.0 nm | 486.0 nm                            | 0.0 nm                   | <input checked="" type="checkbox"/> |                          | <input type="checkbox"/> |
|     |                                                   | 656.1 nm                                                               | 656.1 nm             | 656.1 nm  | 656.1 nm | 656.1 nm                            | 0.0 nm                   | <input checked="" type="checkbox"/> |                          | <input type="checkbox"/> |

Comment

☐ N/A

\* Correct : EDR 676.1 & 11.06.2025  
\* Correct : EDR 360.82 & 11.06.2025

Performer (signature)

Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /

| No.   | Item                      | Acceptance Criteria and Test Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Pass                   | Fail                                | N/A                      |                                     |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|-------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|----|-----|-----|-----|-----|-----|-----|--------|--------|--------|-------------------------------------|--------------------------|--------|-------------------------------------|--------------------------|--------|-------------------------------------|--------------------------|-------|--------|--------|--------|-------------------------------------|--------------------------|-----|--------|--------|--------|-------------------------------------|--------------------------|-----|--------|--------|--------|-------------------------------------|--------------------------|--|--|--|
| 5     | Photometric accuracy      | Filter with transmittance of 10% (absorbance near 1):<br>Error between the reference value $\leq \pm 0.008 \text{ Abs}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                        |                                     |                          |                                     |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | <table border="1"> <thead> <tr> <th>Measurement wavelength</th> <th>Reference value</th> <th>Measured value</th> <th>Error</th> <th></th> <th></th> </tr> <tr> <th>nm</th> <th>Abs</th> <th>Abs</th> <th>Abs</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>440</td> <td>1.0334</td> <td>1.0282</td> <td>0.0052</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>476</td> <td>0.9612</td> <td>0.9557</td> <td>0.0055</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>546.1</td> <td>0.9876</td> <td>0.9767</td> <td>0.0109</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>590</td> <td>1.0566</td> <td>1.0507</td> <td>0.0059</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>635</td> <td>1.0240</td> <td>1.0181</td> <td>0.0059</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> | Measurement wavelength | Reference value                     | Measured value           | Error                               |                                     |                          | nm | Abs | Abs | Abs |     |     | 440 | 1.0334 | 1.0282 | 0.0052 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 476    | 0.9612                              | 0.9557                   | 0.0055 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 546.1 | 0.9876 | 0.9767 | 0.0109 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 590 | 1.0566 | 1.0507 | 0.0059 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 635 | 1.0240 | 1.0181 | 0.0059 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |  |  |
|       |                           | Measurement wavelength                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Reference value        | Measured value                      | Error                    |                                     |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | nm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Abs                    | Abs                                 | Abs                      |                                     |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | 440                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.0334                 | 1.0282                              | 0.0052                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | 476                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9612                 | 0.9557                              | 0.0055                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | 546.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.9876                 | 0.9767                              | 0.0109                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | 590                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.0566                 | 1.0507                              | 0.0059                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | 635                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.0240                 | 1.0181                              | 0.0059                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | Filter with transmittance of 30% (absorbance near 0.5):<br>Error between the reference value $\leq \pm 0.008 \text{ Abs}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        |                                     |                          |                                     |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | <table border="1"> <thead> <tr> <th>Measurement wavelength</th> <th>Reference value</th> <th>Measured value</th> <th>Error</th> <th></th> <th></th> </tr> <tr> <th>nm</th> <th>Abs</th> <th>Abs</th> <th>Abs</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>440</td> <td>0.5335</td> <td>0.5294</td> <td>0.0041</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>476</td> <td>0.4900</td> <td>0.4886</td> <td>0.0014</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>546.1</td> <td>0.5007</td> <td>0.5021</td> <td>0.0014</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>590</td> <td>0.5670</td> <td>0.5619</td> <td>0.0051</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>635</td> <td>0.5625</td> <td>0.5571</td> <td>0.0054</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> | Measurement wavelength | Reference value                     | Measured value           | Error                               |                                     |                          | nm | Abs | Abs | Abs |     |     | 440 | 0.5335 | 0.5294 | 0.0041 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 476    | 0.4900                              | 0.4886                   | 0.0014 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 546.1 | 0.5007 | 0.5021 | 0.0014 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 590 | 0.5670 | 0.5619 | 0.0051 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 635 | 0.5625 | 0.5571 | 0.0054 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |  |  |
|       |                           | Measurement wavelength                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Reference value        | Measured value                      | Error                    |                                     |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | nm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Abs                    | Abs                                 | Abs                      |                                     |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | 440                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.5335                 | 0.5294                              | 0.0041                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | 476                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.4900                 | 0.4886                              | 0.0014                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
| 546.1 | 0.5007                    | 0.5021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.0014                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
| 590   | 0.5670                    | 0.5619                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.0051                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
| 635   | 0.5625                    | 0.5571                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.0054                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
| 6     | Photometric repeatability | Filter with transmittance of 10% (absorbance near 1):<br>Deviation from the average of the three measurements $\leq \pm 0.004 \text{ Abs}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |                                     |                          |                                     |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | <table border="1"> <thead> <tr> <th>1 st</th> <th>2 nd</th> <th>3 rd</th> <th>Average</th> <th>Max. deviation</th> <th></th> <th></th> </tr> <tr> <th>Abs</th> <th>Abs</th> <th>Abs</th> <th>Abs</th> <th>Abs</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>0.9767</td> <td>0.9767</td> <td>0.9767</td> <td>0.9767</td> <td>0.00</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1 st                   | 2 nd                                | 3 rd                     | Average                             | Max. deviation                      |                          |    | Abs | Abs | Abs | Abs | Abs |     |        | 0.9767 | 0.9767 | 0.9767                              | 0.9767                   | 0.00   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | 1 st                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2 nd                   | 3 rd                                | Average                  | Max. deviation                      |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Abs                    | Abs                                 | Abs                      | Abs                                 |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | 0.9767                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.9767                 | 0.9767                              | 0.9767                   | 0.00                                | <input checked="" type="checkbox"/> | <input type="checkbox"/> |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | Filter with transmittance of 30% (absorbance near 0.5):<br>Deviation from the average of the three measurements $\leq \pm 0.0042 \text{ Abs}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                        |                                     |                          |                                     |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | <table border="1"> <thead> <tr> <th>1 st</th> <th>2 nd</th> <th>3 rd</th> <th>Average</th> <th>Max. deviation</th> <th></th> <th></th> </tr> <tr> <th>Abs</th> <th>Abs</th> <th>Abs</th> <th>Abs</th> <th>Abs</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>0.5021</td> <td>0.5020</td> <td>0.5020</td> <td>0.5020</td> <td>0.0001</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1 st                   | 2 nd                                | 3 rd                     | Average                             | Max. deviation                      |                          |    | Abs | Abs | Abs | Abs | Abs |     |        | 0.5021 | 0.5020 | 0.5020                              | 0.5020                   | 0.0001 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | 1 st                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2 nd                   | 3 rd                                | Average                  | Max. deviation                      |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Abs                    | Abs                                 | Abs                      | Abs                                 |                                     |                          |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |
|       |                           | 0.5021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.5020                 | 0.5020                              | 0.5020                   | 0.0001                              | <input checked="" type="checkbox"/> | <input type="checkbox"/> |    |     |     |     |     |     |     |        |        |        |                                     |                          |        |                                     |                          |        |                                     |                          |       |        |        |        |                                     |                          |     |        |        |        |                                     |                          |     |        |        |        |                                     |                          |  |  |  |

Comment

☒ N/A

Performer (signature)



Date:

11 / 06 / 2025

Reviewer (signature)

Date:

/ /

## Operational Qualification

## Operational Qualification Record

| No. | Item                               | Acceptance Criteria and Test Value                                                                         |            | Pass                                | Fail                                | N/A                      |
|-----|------------------------------------|------------------------------------------------------------------------------------------------------------|------------|-------------------------------------|-------------------------------------|--------------------------|
| 7   | Baseline flatness                  | Baseline flatness $\leq \pm 0.0010$ Abs                                                                    | 0.000      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| 8   | Resolution<br>(Spectrum bandwidth) | Within 10nm=0.2nm                                                                                          | 1.10 nm    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| 9   | Resolution<br>(Absorbance ratio)   | Absorbance ratio (peak value/valley value) $\geq 1.5$                                                      | 2.02       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| 10  | Stray light                        | Stray light value (at 198nm) $\leq 1.0\%$<br>Stray light value<br>(at 220nm and at 340nm)<br>$\leq 0.05\%$ | Wavelength | Stray light                         |                                     |                          |
|     |                                    |                                                                                                            | 198nm      | 0.534 %                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|     |                                    |                                                                                                            | 220nm      | <del>0.05</del>                     | <input type="checkbox"/>            | <input type="checkbox"/> |
|     |                                    |                                                                                                            | 340nm      | <del>0.05</del>                     | <input type="checkbox"/>            | <input type="checkbox"/> |
| 11  | Noise level                        | P-P $\leq 0.001$ Abs<br>RMS $\leq 0.0001$ Abs                                                              | P-P        | 0.00002                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|     |                                    |                                                                                                            | RMS        | 0.000005                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 12  | Drift<br>(Baseline stability)      | Baseline stability<br>$\leq 0.0010$ Abs/H                                                                  | 0.0000     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |

Comment

☒ N/A

Performer (signature)

Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /

## 3-2 Workstation UVProbe

| Component ID |                          | <input type="checkbox"/> No                                                                                                                                        |                       |                                                                     |                                     |                          |                                     |
|--------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| No.          | Item                     | Acceptance Criteria and Test Value                                                                                                                                 |                       |                                                                     | Pass                                | Fail                     | N/A                                 |
| 1-1          | Computer boot-up test    | Windows starts up without any errors.                                                                                                                              |                       |                                                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 1-2          | Time and date check      | The date and time are correct.<br>Tolerance range (± 5 min).                                                                                                       | Computer              | Reference                                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
|              |                          |                                                                                                                                                                    | 11 / 06 / 2015        | 11 / 06 / 2015                                                      |                                     |                          |                                     |
|              |                          |                                                                                                                                                                    | 10 : 45 : 19          | 10 : 45 : 19                                                        |                                     |                          |                                     |
| 1-3          | Hard disk drive check    | "Disk Check Complete." is displayed for all drives checked.<br><br>(For Windows Vista / 7, a message "Your device or disk was successfully scanned" is displayed.) | Drive                 | Message displayed Yes/No                                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
|              |                          |                                                                                                                                                                    | C                     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                          |                                     |
|              |                          |                                                                                                                                                                    | D                     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                          |                                     |
|              |                          |                                                                                                                                                                    | N/A                   | <input type="checkbox"/> Yes <input type="checkbox"/> No            |                                     |                          |                                     |
|              |                          |                                                                                                                                                                    |                       | <input type="checkbox"/> Yes <input type="checkbox"/> No            |                                     |                          |                                     |
| 1-4          | Print driver check       | Test page printed correctly.                                                                                                                                       |                       |                                                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 1-5          | Network connection check | No packets lost.                                                                                                                                                   | Designated IP address | 19                                                                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comment

|                                         |
|-----------------------------------------|
| <input checked="" type="checkbox"/> N/A |
|-----------------------------------------|

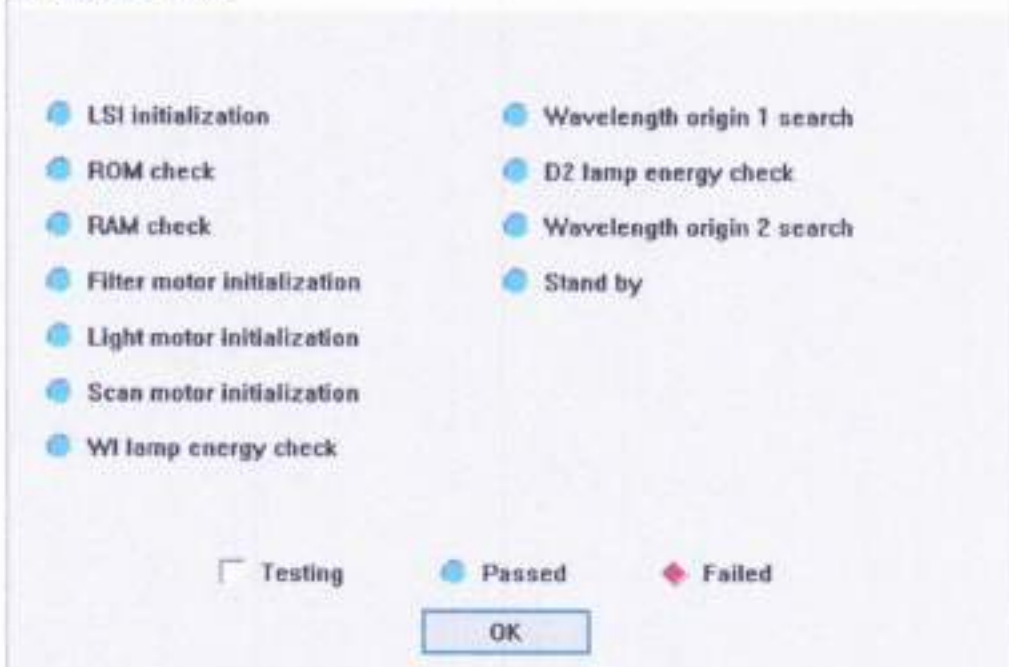
Performer (signature)

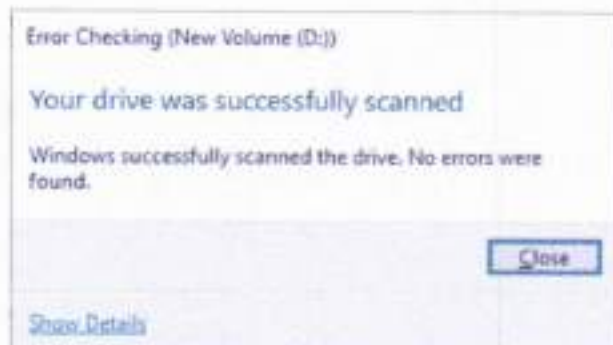


Date: 11 / 06 / 2015

Reviewer (signature)

Date: / /





\*\* Check the Program Files \*\*

Operator : System Administrator  
Program Name : User Authentication Tool  
Version : 1.10  
Check Date : 2025-06-11 10:21:06

| Filename             | File.Size | Date.Time | Check.Sum |
|----------------------|-----------|-----------|-----------|
| <Win.Sys>SMZATST.exe | Pass      | Pass      | Pass      |
| <Win.Sys>SmzAtst.ocx | Pass      | Pass      | Pass      |
| Total                | : Pass    |           |           |

| No.     | Item                                               | Acceptance Criteria and Test Value                                                  |                                           | Pass                                | Fail                                | N/A                      |                          |
|---------|----------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|
| UVProbe |                                                    |                                                                                     |                                           |                                     |                                     |                          |                          |
| 2-1     | Software version check                             | Version number can be confirmed.                                                    | UVProbe                                   | Ver. 2.70                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |                                                    |                                                                                     | Shimadzu User Authentication Tool         | Ver. 2.70                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| 2-2     | Program alteration check                           | All items are displayed as "Pass".                                                  |                                           |                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2-3     | Shimadzu User Authentication Tool connection check | Server name for the connected database is correct.                                  | Server connected to the database:<br>Good |                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |                                                    | Login possible from [Log Display].                                                  |                                           |                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
|         |                                                    | Lockout by UVProbe.exe is registered.                                               |                                           |                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| 2-4     | Security function test                             |                                                                                     |                                           |                                     | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| 2-4-1   | Password log management function check             | Duplicate password is not accepted.                                                 |                                           |                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2-4-2   | Number of password characters check                | Change to a password shorter than the minimum number of characters is not accepted. |                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |                          |
|         |                                                    | Change to a password longer than the minimum number of characters is accepted.      |                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                          |                          |
| 2-4-3   | Failed login detection                             | Login prohibited with an incorrect password but possible with the correct password. |                                           |                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2-4-4   | User lockout function check                        | Login is locked out.                                                                |                                           |                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |                                                    | Login prohibited for the designated lockout time.                                   |                                           |                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| 2-4-5   | Failed login record                                | Login failures recorded in the log.                                                 |                                           |                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comment

☒ N/A

Performer (signature)



Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /

| No.                                | Item                              | Acceptance Criteria and Test Value                                                                                                   | Pass                     | Fail                     | N/A                      |
|------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| 2-5                                | User access rights check          | OQ_USER_2 can edit the analysis method, but it is disabled for OQ_USER_1.                                                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2-6                                | Lock function check               | Login screen is displayed.                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                    |                                   | UVProbe can be used after entering password.                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 2-7                                | Function check                    | <input type="checkbox"/> Register to Agent Database Database Name: _____                                                             | /                        | /                        | /                        |
| 2-7-1                              | Peak detection / Point pick check | Peak detection and point pick results match their respective values.                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                    |                                   | File name changes and the peak detection parameter changes are recorded in the data log along with the date and user name.           | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 2-7-2                              | Quantitation function check       | The calibration curve function and correlation coefficient, and quantitation results match.                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                    |                                   | The information of the standard sample file imported and saved is recorded in the photometric log along with the date and user name. | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 2-8                                | Communication check               | The spectrophotometer initialization setting screen is displayed on the UVProbe screen.                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| UV Performance Validation Software |                                   |                                                                                                                                      |                          |                          |                          |
| 3-1                                | Software version check            | Version number can be confirmed. Ver. _____                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3-2                                | Program alteration check          | All items are displayed as "OK".                                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comment

☒ N/A

Performer (signature) \_\_\_\_\_

8

Date: 11 / 06 / 2025

Reviewer (signature) \_\_\_\_\_

Date: / /

## 3-3 Syringe Sipper N (Normal temperature type)

| Component ID        |                                | <input type="checkbox"/> No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |                          |                          |                    |                                |            |       |                 |         |          |          |                 |         |          |
|---------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------|--------------------------------|------------|-------|-----------------|---------|----------|----------|-----------------|---------|----------|
| Serial number (S/N) |                                | _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                          |                          |                    |                                |            |       |                 |         |          |          |                 |         |          |
| No.                 | Item                           | Acceptance Criteria and Test Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Pass                     | Fail                     | N/A                      |                    |                                |            |       |                 |         |          |          |                 |         |          |
| 1                   | Initial operation check        | Cell 1 will automatically move to the optical beam position in the initial operation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                    |                                |            |       |                 |         |          |          |                 |         |          |
| 2                   | Cell position check            | Transmittance at each cell position shall be 100.0±1.0%.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |                          |                          |                    |                                |            |       |                 |         |          |          |                 |         |          |
|                     |                                | Error from the set value (1.00ml) $\leq \pm 0.10$ ml                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                          |                    |                                |            |       |                 |         |          |          |                 |         |          |
|                     |                                | Weight of the beaker before test: <span style="border: 1px solid black; padding: 2px;">_____ g</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                          |                          |                    |                                |            |       |                 |         |          |          |                 |         |          |
|                     |                                | (Calculation and Recording Method)<br>For the 1 <sup>st</sup> measurement, record the weight difference ([Weight of the beaker before the test] - [Weight of the beaker after the sipping operation]) as actual intake volume.<br>Convert 1g into 1ml. Record an error from the set value of "1ml".<br>From the 2 <sup>nd</sup> measurements onwards, record the difference in weight from the previous measurement of [the weight of the beaker after the sipping operation] as actual intake volume. Record the deviation from the set value of "1ml".<br>In Test 2, three measurements are performed to confirm that the deviations in all measurements are within tolerance. |                          |                          |                          |                    |                                |            |       |                 |         |          |          |                 |         |          |
|                     |                                | <table border="1"> <thead> <tr> <th>No. of Measurement</th> <th>Weight after sipping operation</th> <th>Sip volume</th> <th>Error</th> </tr> </thead> <tbody> <tr> <td>1<sup>st</sup></td> <td>_____ g</td> <td>_____ ml</td> <td>_____ ml</td> </tr> <tr> <td>2<sup>nd</sup></td> <td>_____ g</td> <td>_____ ml</td> <td>_____ ml</td> </tr> <tr> <td>3<sup>rd</sup></td> <td>_____ g</td> <td>_____ ml</td> <td>_____ ml</td> </tr> </tbody> </table>                                                                                                                                                                                                                          |                          |                          |                          | No. of Measurement | Weight after sipping operation | Sip volume | Error | 1 <sup>st</sup> | _____ g | _____ ml | _____ ml | 2 <sup>nd</sup> | _____ g | _____ ml |
| No. of Measurement  | Weight after sipping operation | Sip volume                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Error                    |                          |                          |                    |                                |            |       |                 |         |          |          |                 |         |          |
| 1 <sup>st</sup>     | _____ g                        | _____ ml                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | _____ ml                 |                          |                          |                    |                                |            |       |                 |         |          |          |                 |         |          |
| 2 <sup>nd</sup>     | _____ g                        | _____ ml                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | _____ ml                 |                          |                          |                    |                                |            |       |                 |         |          |          |                 |         |          |
| 3 <sup>rd</sup>     | _____ g                        | _____ ml                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | _____ ml                 |                          |                          |                    |                                |            |       |                 |         |          |          |                 |         |          |
|                     |                                | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |                          |                    |                                |            |       |                 |         |          |          |                 |         |          |

Comment

☐ N/A

Performer (signature)

Date: 11<sup>th</sup>, 06, 2025

Reviewer (signature)

Date: / /

| No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Item                           | Acceptance Criteria and Test Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Pass            | Fail                                    | N/A             |                 |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------|-----------------|-----------------|-----------------------------------------|----------|----------|----------|--------------------------|--------------------------|--------------------------|---------|---------|---------|------|---|---|---|---|---|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|-----------|------------|------------|---------|-------------|-----------|---------|-------------|-----------|---------|--------------|-----------|---------|--------------|-----------|---------|--------------|-----------|---------|--------------|-----------|--------------------------|--------------------------|--------------------------|
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Sip volume repeatability check | <p>Deviation from the mean of the three measurements <math>\leq +0.03</math> ml</p> <p>The mean sip volume obtained in Test 2 : <span style="border: 1px solid black; padding: 2px 20px;">_____ ml</span></p> <p>(Calculation and Recording Method)</p> <p>Determine and record the mean sip volume of the three measurements conducted in Test 2. For each measurement, calculate and record an error: [Sip volume (the value recorded in the measurement results of Test 2) - [the mean sip volume obtained in Test 2].</p> <table border="1" style="width: 100%;"> <thead> <tr> <th></th> <th>1<sup>st</sup></th> <th>2<sup>nd</sup></th> <th>3<sup>rd</sup></th> </tr> </thead> <tbody> <tr> <td>Deviation</td> <td>_____ ml</td> <td>_____ ml</td> <td>_____ ml</td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 | 1 <sup>st</sup>                         | 2 <sup>nd</sup> | 3 <sup>rd</sup> | Deviation                               | _____ ml | _____ ml | _____ ml | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1 <sup>st</sup>                | 2 <sup>nd</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3 <sup>rd</sup> |                                         |                 |                 |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | _____ ml                       | _____ ml                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | _____ ml        |                                         |                 |                 |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Carry-over check               | <p>Carry over <math>\leq 1.0\%</math></p> <p>(Calculation Method)</p> <table border="1" style="width: 100%;"> <thead> <tr> <th></th> <th colspan="3">(Distilled water)</th> <th colspan="3">(Potassium dichromate aqueous solution)</th> </tr> <tr> <th></th> <th>Meas. 1</th> <th>Meas. 2</th> <th>Meas. 3</th> <th>Meas. 4</th> <th>Meas. 5</th> <th>Meas. 6</th> </tr> <tr> <th>Abs.</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> </tr> </thead> <tbody> <tr> <td colspan="7"> <p>The carryover in Test 4 indicates an effect of distilled water on measurement of potassium dichromate (Meas. 4). For this reason, the measurement value of Meas. 6 is used as absorbance value of potassium dichromate aqueous solution and the carry-over is determined using the following formula:</p> <p>Carry-over (%) = [(Abs. F - Abs. D) / Abs. F] x 100</p> <p>In Test 4, repeat the above-mentioned measurements three times and confirm that the carry-over values at all measurement cycles are within tolerance.</p> </td> </tr> </tbody> </table> <table border="1" style="width: 100%;"> <thead> <tr> <th></th> <th>Sample ID</th> <th>Absorbance</th> <th>Carry-over</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Cycle 1</td> <td>4 (Meas. 4)</td> <td>_____ Abs</td> <td rowspan="2">_____ %</td> </tr> <tr> <td>6 (Meas. 6)</td> <td>_____ Abs</td> </tr> <tr> <td rowspan="2">Cycle 2</td> <td>10 (Meas. 4)</td> <td>_____ Abs</td> <td rowspan="2">_____ %</td> </tr> <tr> <td>12 (Meas. 6)</td> <td>_____ Abs</td> </tr> <tr> <td rowspan="2">Cycle 3</td> <td>16 (Meas. 4)</td> <td>_____ Abs</td> <td rowspan="2">_____ %</td> </tr> <tr> <td>18 (Meas. 6)</td> <td>_____ Abs</td> </tr> </tbody> </table> |                 | (Distilled water)                       |                 |                 | (Potassium dichromate aqueous solution) |          |          |          | Meas. 1                  | Meas. 2                  | Meas. 3                  | Meas. 4 | Meas. 5 | Meas. 6 | Abs. | A | B | C | D | E | F | <p>The carryover in Test 4 indicates an effect of distilled water on measurement of potassium dichromate (Meas. 4). For this reason, the measurement value of Meas. 6 is used as absorbance value of potassium dichromate aqueous solution and the carry-over is determined using the following formula:</p> <p>Carry-over (%) = [(Abs. F - Abs. D) / Abs. F] x 100</p> <p>In Test 4, repeat the above-mentioned measurements three times and confirm that the carry-over values at all measurement cycles are within tolerance.</p> |  |  |  |  |  |  |  | Sample ID | Absorbance | Carry-over | Cycle 1 | 4 (Meas. 4) | _____ Abs | _____ % | 6 (Meas. 6) | _____ Abs | Cycle 2 | 10 (Meas. 4) | _____ Abs | _____ % | 12 (Meas. 6) | _____ Abs | Cycle 3 | 16 (Meas. 4) | _____ Abs | _____ % | 18 (Meas. 6) | _____ Abs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | (Distilled water)              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 | (Potassium dichromate aqueous solution) |                 |                 |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Meas. 1                        | Meas. 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Meas. 3         | Meas. 4                                 | Meas. 5         | Meas. 6         |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| Abs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | A                              | B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | C               | D                                       | E               | F               |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| <p>The carryover in Test 4 indicates an effect of distilled water on measurement of potassium dichromate (Meas. 4). For this reason, the measurement value of Meas. 6 is used as absorbance value of potassium dichromate aqueous solution and the carry-over is determined using the following formula:</p> <p>Carry-over (%) = [(Abs. F - Abs. D) / Abs. F] x 100</p> <p>In Test 4, repeat the above-mentioned measurements three times and confirm that the carry-over values at all measurement cycles are within tolerance.</p> |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                                         |                 |                 |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Sample ID                      | Absorbance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Carry-over      |                                         |                 |                 |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| Cycle 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 4 (Meas. 4)                    | _____ Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | _____ %         |                                         |                 |                 |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 6 (Meas. 6)                    | _____ Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                                         |                 |                 |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| Cycle 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10 (Meas. 4)                   | _____ Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | _____ %         |                                         |                 |                 |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 12 (Meas. 6)                   | _____ Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                                         |                 |                 |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| Cycle 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 16 (Meas. 4)                   | _____ Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | _____ %         |                                         |                 |                 |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 18 (Meas. 6)                   | _____ Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                                         |                 |                 |                                         |          |          |          |                          |                          |                          |         |         |         |      |   |   |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |

Comment

☐ N/A

Performer (signature)



Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /

## 3-4 Syringe Sipper CN (Constant temperature, water circulator type)

| Component ID        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |                          |                          | <input type="checkbox"/> No |
|---------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|--------------------------|-----------------------------|
| Serial number (S/N) |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |                          |                          |                             |
| No.                 | Item                    | Acceptance Criteria and Test Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Pass                                | Fail                     | N/A                      |                             |
| 1                   | Initial operation check | Cell 1 will automatically move to the optical beam position in the initial operation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                             |
| 2                   | Cell position check     | Transmittance at each cell position shall be 100.0±1.0%.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                          |                          |                             |
|                     |                         | Error from the set value (1.00ml) $\leq \pm 0.10$ ml                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |                          |                          |                             |
|                     |                         | Weight of the beaker before test : <span style="border: 1px solid black; padding: 2px;">_____ g</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |                          |                          |                             |
|                     |                         | (Calculation and Recording Method)<br>For the 1 <sup>st</sup> measurement, record the weight difference ([Weight of the beaker before the test] – [Weight of the beaker after the sipping operation]) as actual intake volume.<br>Convert 1g into 1ml. Record an error from the set value of "1ml".<br>From the 2 <sup>nd</sup> measurements onwards, record the difference in weight from the previous measurement of [the weight of the beaker after the sipping operation] as actual intake volume. Record the deviation from the set value of "1ml".<br>In Test 2, three measurements are performed to confirm that the deviations in all measurements are within tolerance. |                                     |                          |                          |                             |
|                     |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |                          |                          |                             |
|                     |                         | No. of Measurement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Weight after sipping operation      | Sip volume               | Error                    |                             |
|                     |                         | 1 <sup>st</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | _____ g                             | _____ ml                 | _____ ml                 | <input type="checkbox"/>    |
|                     |                         | 2 <sup>nd</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | _____ g                             | _____ ml                 | _____ ml                 |                             |
|                     |                         | 3 <sup>rd</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | _____ g                             | _____ ml                 | _____ ml                 |                             |

Comment

☒ N/A

Performer (signature)



Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /

| No.               | Item                           | Acceptance Criteria and Test Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Pass                                    | Fail            | N/A             |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|-------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------|-----------------|-----------------------------------------|-----------|----------|----------|----------|--------------------------|--------------------------|--------------------------|---------|--------|---|---|---|---|---|--|--|-----|--|--|--|--|-----------|------------|------------|---------|-------------|-----------|---------|-------------|-----------|---------|--------------|-----------|---------|--------------|-----------|---------|--------------|-----------|---------|--------------|-----------|--------------------------|--------------------------|--------------------------|
| 3                 | Sip volume repeatability check | <p>Deviation from the mean of the three measurements <math>\leq +0.03</math> ml</p> <p>The mean sip volume obtained in Test 2 : <span style="border: 1px solid black; padding: 2px;">_____ ml</span></p> <p>(Calculation and Recording Method)</p> <p>Determine and record the mean sip volume of the three measurements conducted in Test 2. For each measurement, calculate and record an error; [Sip volume (the value recorded in the measurement results of Test 2) - [the mean sip volume obtained in Test 2].</p> <table border="1"> <thead> <tr> <th></th> <th>1<sup>st</sup></th> <th>2<sup>nd</sup></th> <th>3<sup>rd</sup></th> </tr> </thead> <tbody> <tr> <td>Deviation</td> <td>_____ ml</td> <td>_____ ml</td> <td>_____ ml</td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                         | 1 <sup>st</sup> | 2 <sup>nd</sup> | 3 <sup>rd</sup>                         | Deviation | _____ ml | _____ ml | _____ ml | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|                   | 1 <sup>st</sup>                | 2 <sup>nd</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3 <sup>rd</sup>                         |                 |                 |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| Deviation         | _____ ml                       | _____ ml                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | _____ ml                                |                 |                 |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| 4                 | Carry-over check               | <p>Carry over <math>\leq 1.0\%</math></p> <p>(Calculation Method)</p> <table border="1"> <thead> <tr> <th colspan="3">(Distilled water)</th> <th colspan="3">(Potassium dichromate aqueous solution)</th> </tr> <tr> <th>Meas. 1</th> <th>Meas. 2</th> <th>Meas. 3</th> <th>Meas. 4</th> <th>Meas. 5</th> <th>Meas. 6</th> </tr> <tr> <th>Abs. A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>N/A</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>The carryover in Test 4 indicates an effect of distilled water on measurement of potassium dichromate (Meas. 4). For this reason, the measurement value of Meas. 6 is used as absorbance value of potassium dichromate aqueous solution and the carry-over is determined using the following formula:</p> $\text{Carry-over (\%)} = [(Abs. F - Abs. D) / Abs. F] \times 100$ <p>In Test 4, repeat the above-mentioned measurements three times and confirm that the carry-over values at all measurement cycles are within tolerance.</p> <table border="1"> <thead> <tr> <th></th> <th>Sample ID</th> <th>Absorbance</th> <th>Carry-over</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Cycle 1</td> <td>4 (Meas. 4)</td> <td>_____ Abs</td> <td rowspan="2">_____ %</td> </tr> <tr> <td>6 (Meas. 6)</td> <td>_____ Abs</td> </tr> <tr> <td rowspan="2">Cycle 2</td> <td>10 (Meas. 4)</td> <td>_____ Abs</td> <td rowspan="2">_____ %</td> </tr> <tr> <td>12 (Meas. 6)</td> <td>_____ Abs</td> </tr> <tr> <td rowspan="2">Cycle 3</td> <td>16 (Meas. 4)</td> <td>_____ Abs</td> <td rowspan="2">_____ %</td> </tr> <tr> <td>18 (Meas. 6)</td> <td>_____ Abs</td> </tr> </tbody> </table> | (Distilled water)                       |                 |                 | (Potassium dichromate aqueous solution) |           |          | Meas. 1  | Meas. 2  | Meas. 3                  | Meas. 4                  | Meas. 5                  | Meas. 6 | Abs. A | B | C | D | E | F |  |  | N/A |  |  |  |  | Sample ID | Absorbance | Carry-over | Cycle 1 | 4 (Meas. 4) | _____ Abs | _____ % | 6 (Meas. 6) | _____ Abs | Cycle 2 | 10 (Meas. 4) | _____ Abs | _____ % | 12 (Meas. 6) | _____ Abs | Cycle 3 | 16 (Meas. 4) | _____ Abs | _____ % | 18 (Meas. 6) | _____ Abs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (Distilled water) |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | (Potassium dichromate aqueous solution) |                 |                 |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| Meas. 1           | Meas. 2                        | Meas. 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Meas. 4                                 | Meas. 5         | Meas. 6         |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| Abs. A            | B                              | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | D                                       | E               | F               |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|                   |                                | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |                 |                 |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|                   | Sample ID                      | Absorbance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Carry-over                              |                 |                 |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| Cycle 1           | 4 (Meas. 4)                    | _____ Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | _____ %                                 |                 |                 |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|                   | 6 (Meas. 6)                    | _____ Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                         |                 |                 |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| Cycle 2           | 10 (Meas. 4)                   | _____ Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | _____ %                                 |                 |                 |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|                   | 12 (Meas. 6)                   | _____ Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                         |                 |                 |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
| Cycle 3           | 16 (Meas. 4)                   | _____ Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | _____ %                                 |                 |                 |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |
|                   | 18 (Meas. 6)                   | _____ Abs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                         |                 |                 |                                         |           |          |          |          |                          |                          |                          |         |        |   |   |   |   |   |  |  |     |  |  |  |  |           |            |            |         |             |           |         |             |           |         |              |           |         |              |           |         |              |           |         |              |           |                          |                          |                          |

Comment

☒ N/A

Performer (signature)



Date:

11 / 06 / 2025

Reviewer (signature)

Date:

/ /

| No. | Item                               | Acceptance Criteria and Test Value                                                             |                                         |                | Pass | Fail | N/A |
|-----|------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------|----------------|------|------|-----|
| 5   | Temperature control accuracy check | (Information on water circulating device)                                                      |                                         |                |      |      |     |
|     |                                    | Name of Device :                                                                               |                                         |                |      |      |     |
|     |                                    | Component ID :                                                                                 | <input checked="" type="checkbox"/> N/A |                |      |      |     |
|     |                                    | Ambient Temperature :                                                                          | _____ °C                                |                |      |      |     |
|     |                                    | Check the difference between the circulating water and cell holder temperatures (record only). | Set Temp.                               | Measured Temp. |      |      |     |
|     |                                    |                                                                                                | 37 °C                                   | _____ °C       |      |      |     |

Comment

N/A

Performer (signature)



Date: 11 / 06 / 2022

Reviewer (signature)

Date: / /

## 3-5 ASC-5 Auto Sample Changer

| Component ID        |                         |                                                                                 |                          |                          |                          | <input type="checkbox"/> No |
|---------------------|-------------------------|---------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|
| Serial number (S/N) |                         |                                                                                 |                          |                          |                          |                             |
| No.                 | Item                    | Acceptance Criteria and Test Value                                              | Pass                     | Fail                     | N/A                      |                             |
| 1                   | Firmware version check  | The program checksum value is displayed and the version number is correct. Ver. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                             |
| 2                   | Initial operation check | The initial operation completed successfully without any error messages.        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                             |
| 3                   | Manual operation check  | The intake nozzle should move smoothly to the test tube position                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                             |

Comment

|                                         |
|-----------------------------------------|
| <input checked="" type="checkbox"/> N/A |
|-----------------------------------------|

Performer (signature)



Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /

## 3-6 DIS-1200 Elution Test 6-Cell Holder

| Component ID        |                         | <input type="checkbox"/> No                                                           |                 |                          |                          |                          |                          |                          |
|---------------------|-------------------------|---------------------------------------------------------------------------------------|-----------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Serial number (S/N) |                         |                                                                                       |                 |                          |                          |                          |                          |                          |
| No.                 | Item                    | Acceptance Criteria and Test Value                                                    |                 |                          | Pass                     | Fail                     | N/A                      |                          |
| 1                   | Initial operation check | Cell 1 will automatically move to the optical beam position in the initial operation. |                 |                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 2                   | Cell position check     | Transmittance at each cell position shall be $100.0 \pm 1.0\%$                        |                 |                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                         | Cell Position                                                                         | 1 <sup>st</sup> | 2 <sup>nd</sup>          |                          |                          |                          | 3 <sup>rd</sup>          |
|                     |                         | Cell 1                                                                                | ----- %T        | ----- %T                 | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                     |                         | Cell 2                                                                                | ----- %T        | ----- %T                 | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                         | Cell 3                                                                                | ----- %T        | ----- %T                 | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                         | Cell 4                                                                                | ----- %T        | ----- %T                 | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                         | Cell 5                                                                                | ----- %T        | ----- %T                 | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| Cell 6              | ----- %T                | ----- %T                                                                              | ----- %T        | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |                          |

Comment

☒ N/A

Performer (signature)



Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /

## 3-7 DIS-8 Elution Test 8-Cell Holder

| Component ID        |                         | <input type="checkbox"/> No                                                           |                 |                 |                          |                          |                          |                          |
|---------------------|-------------------------|---------------------------------------------------------------------------------------|-----------------|-----------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Serial number (S/N) |                         |                                                                                       |                 |                 |                          |                          |                          |                          |
| No.                 | Item                    | Acceptance Criteria and Test Value                                                    |                 |                 | Pass                     | Fail                     | N/A                      |                          |
| 1                   | Initial operation check | Cell 1 will automatically move to the optical beam position in the initial operation. |                 |                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 2                   | Cell position check     | Transmittance at each cell position shall be $100.0 \pm 1.0\%$ .                      |                 |                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                         | Cell Position                                                                         | 1 <sup>st</sup> | 2 <sup>nd</sup> |                          |                          |                          | 3 <sup>rd</sup>          |
|                     |                         | Cell 1                                                                                | ----- %T        | ----- %T        | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                     |                         | Cell 2                                                                                | ----- %T        | ----- %T        | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                         | Cell 3                                                                                | ----- %T        | ----- %T        | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                         | Cell 4                                                                                | ----- %T        | ----- %T        | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                         | Cell 5                                                                                | ----- %T        | ----- %T        | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                         | Cell 6                                                                                | ----- %T        | ----- %T        | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                         | Cell 7                                                                                | ----- %T        | ----- %T        | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                         | Cell 8                                                                                | ----- %T        | ----- %T        | ----- %T                 | <input type="checkbox"/> | <input type="checkbox"/> |                          |

Comment

☒ N/A

Performer (signature)



Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /

## 3-8 CPS-240A Cell Positioner, Thermoelectrically Temperature Controlled

| Component ID        |                            | <input type="checkbox"/> No                                                           |                                   |                                 |                         |                          |                          |                          |                                           |                         |
|---------------------|----------------------------|---------------------------------------------------------------------------------------|-----------------------------------|---------------------------------|-------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------------|-------------------------|
| Serial number (S/N) |                            |                                                                                       |                                   |                                 |                         |                          |                          |                          |                                           |                         |
| No.                 | Item                       | Acceptance Criteria and Test Value                                                    |                                   |                                 |                         | Pass                     | Fail                     | N/A                      |                                           |                         |
| 1                   | Initial operation check    | Cell 1 will automatically move to the optical beam position in the initial operation. |                                   |                                 |                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                           |                         |
| 2                   | Cell position check        | Transmittance at each cell position shall be 100.0±1.0%.                              |                                   |                                 |                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                           |                         |
|                     |                            | Cell Position                                                                         | 1 <sup>st</sup>                   | 2 <sup>nd</sup>                 | 3 <sup>rd</sup>         |                          |                          |                          |                                           |                         |
|                     |                            | Cell 1                                                                                | --- %T                            | --- %T                          | --- %T                  |                          |                          |                          |                                           |                         |
|                     |                            | Cell 2                                                                                | --- %T                            | --- %T                          | --- %T                  |                          |                          |                          |                                           |                         |
|                     |                            | Cell 3                                                                                | --- %T                            | --- %T                          | --- %T                  |                          |                          |                          |                                           |                         |
|                     |                            | Cell 4                                                                                | --- %T                            | --- %T                          | --- %T                  |                          |                          |                          |                                           |                         |
|                     |                            | Cell 5                                                                                | --- %T                            | --- %T                          | --- %T                  |                          |                          |                          |                                           |                         |
|                     |                            | Cell 6                                                                                | --- %T                            | --- %T                          | --- %T                  |                          |                          |                          |                                           |                         |
| 3                   | Temperature accuracy check | The deviation from the set temperatures (16°C, 37°C and 60°C):<br>≤ ±(0.5+A+B) °C     |                                   |                                 |                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                           |                         |
|                     |                            | A: Thermocouple test accuracy: ± <input type="text"/> °C                              |                                   |                                 |                         |                          |                          |                          |                                           |                         |
|                     |                            | B: Thermometer accuracy rating*:                                                      |                                   |                                 |                         |                          |                          |                          |                                           |                         |
|                     |                            | 16°C: ± <input type="text"/> °C                                                       | 37°C: ± <input type="text"/> °C   | 60°C: ± <input type="text"/> °C |                         |                          |                          |                          |                                           |                         |
|                     |                            | * Use the accuracy rating indicated in the thermometer inspection report.             |                                   |                                 |                         |                          |                          |                          |                                           |                         |
|                     |                            | Set temp.                                                                             | Acceptance criteria<br>±(0.5+A+B) | Correction value (C)            | Thermometer reading (D) |                          |                          |                          | Actual measurement temperature<br>(D - C) | Error                   |
|                     |                            | 16.0°C                                                                                | ± <input type="text"/> °C         | <input type="text"/> °C         | <input type="text"/> °C |                          |                          |                          | <input type="text"/> °C                   | <input type="text"/> °C |
|                     |                            | 37.0°C                                                                                | ± <input type="text"/> °C         | <input type="text"/> °C         | <input type="text"/> °C |                          |                          |                          | <input type="text"/> °C                   | <input type="text"/> °C |
| 60.0°C              | ± <input type="text"/> °C  | <input type="text"/> °C                                                               | <input type="text"/> °C           | <input type="text"/> °C         | <input type="text"/> °C |                          |                          |                          |                                           |                         |

Comment

☒ N/A

Performer (signature)



Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /



## 3-10 TCC-240A Thermoelectrically Temperature Controlled Cell Holder

| Component ID        |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |                  |                     |                                                                            | <input type="checkbox"/> No |      |     |        |
|---------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------|---------------------|----------------------------------------------------------------------------|-----------------------------|------|-----|--------|
| Serial number (S/N) |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |                  |                     |                                                                            |                             |      |     |        |
| No.                 | Item                       | Acceptance Criteria and Test Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                       |                  |                     |                                                                            | Pass                        | Fail | N/A |        |
| 3.                  | Temperature accuracy check | The deviation from the set temperatures (10°C, 37°C and 60°C):<br>$\leq \pm(0.5+A+B) ^\circ\text{C}$<br>A: Thermocouple test accuracy: <span style="border: 1px solid black; padding: 2px;">± _ _ °C</span><br>B: Thermometer accuracy rating*:<br>10°C: <span style="border: 1px solid black; padding: 2px;">± _ _ °C</span> 37°C: <span style="border: 1px solid black; padding: 2px;">± _ _ °C</span> 60°C: <span style="border: 1px solid black; padding: 2px;">± _ _ °C</span><br>* Use the accuracy rating indicated in the thermometer inspection report. |                                       |                  |                     |                                                                            | /                           | /    | /   |        |
|                     |                            | Set temp.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Acceptance criteria<br>$\pm(0.5+A+B)$ | Correction value | Thermometer reading | Actual measurement temperature<br>(Thermometer reading – Correction value) |                             |      |     | Error  |
|                     |                            | 10.0°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ± _ _ °C                              | _ _ °C           | _ _ °C              | _ _ °C                                                                     |                             |      |     | _ _ °C |
|                     |                            | 37.0°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ± _ °C                                | _ °C             | _ °C                | _ °C                                                                       |                             |      |     | _ °C   |
|                     |                            | 60.0°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ± _ °C                                | _ °C             | _ °C                | _ °C                                                                       |                             |      |     | _ °C   |
|                     |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |                  |                     |                                                                            |                             |      |     |        |

Comment

☒ N/A

Performer (signature)



Date:

11 / 06 / 2025

Reviewer (signature)

Date:

/ /

## 3-11 PCL Compatible Printer

|                     |               |                                      |                          |                          |                             |
|---------------------|---------------|--------------------------------------|--------------------------|--------------------------|-----------------------------|
| Component ID        |               |                                      |                          |                          | <input type="checkbox"/> No |
| Serial number (S/N) |               |                                      |                          |                          |                             |
| No.                 | Item          | Acceptance Criteria and Test Value   | Pass                     | Fail                     | N/A                         |
| 1                   | Printing test | No problems with printing condition. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>    |

Comment

☐ N/A

Performer (signature)



Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /

## 3-12 ESC/P Compatible Printer

|                     |               |                                      |                          |                          |                          |
|---------------------|---------------|--------------------------------------|--------------------------|--------------------------|--------------------------|
| Component ID        |               | <input type="checkbox"/> No          |                          |                          |                          |
| Model Name          |               |                                      |                          |                          |                          |
| Serial number (S/N) |               |                                      |                          |                          |                          |
| No.                 | Item          | Acceptance Criteria and Test Value   | Pass                     | Fail                     | N/A                      |
| 1                   | Printing test | No problems with printing condition. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comment

☐ N/A

Performer (signature)



Date:

11 / 06 / 2025

Reviewer (signature)

Date:

/ /

## 3-13 PCL Compatible Printer

|                     |               |                                      |                          |                          |                             |
|---------------------|---------------|--------------------------------------|--------------------------|--------------------------|-----------------------------|
| Component ID        |               |                                      |                          |                          | <input type="checkbox"/> No |
| Model Name          |               |                                      |                          |                          |                             |
| Serial number (S/N) |               |                                      |                          |                          |                             |
| No.                 | Item          | Acceptance Criteria and Test Value   | Pass                     | Fail                     | N/A                         |
| 1                   | Printing test | No problems with printing condition. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>    |

Comment

|                              |
|------------------------------|
| <input type="checkbox"/> N/A |
|------------------------------|

Performer (signature)



Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /

## 3-14 CLASS-Agent

| Component ID        |                                                                                                                                                       | <input type="checkbox"/> N/A                                                                                       |                          |                          |                          |                          |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Serial number (S/N) |                                                                                                                                                       |                                                                                                                    |                          |                          |                          |                          |
| No.                 | Item                                                                                                                                                  | Acceptance Criteria and Test Value                                                                                 | Pass                     | Fail                     | N/A                      |                          |
| 1-1                 | Software version check                                                                                                                                | Version numbers can be confirmed.                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                                                                                                                                                       | <input type="checkbox"/> CLASS-Agent Manager                                                                       | Ver.                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                     |                                                                                                                                                       | <input type="checkbox"/> UVProbe Agent                                                                             | Ver.                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                     |                                                                                                                                                       | <input type="checkbox"/> SQL Server DB creation tool                                                               | Ver.                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                     |                                                                                                                                                       | <input type="checkbox"/>                                                                                           | Ver.                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1-2                 | Program alteration check                                                                                                                              | "Pass" shall be displayed for all software programs.                                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 1-3                 | Shimadzu User Authentication Tool connection check<br><input type="checkbox"/> Not applicable because it was already implemented in UVProbe Test 2-3. | The Server name for the connected database shall be correct.<br>Server connected to the database<br>_____<br>_____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                     |                                                                                                                                                       | Login possible from [Log Display].                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|                     |                                                                                                                                                       | Lockout by AgentMan2.exe shall be registered.                                                                      | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |

Comment

☐ N/A

Performer (signature)



Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /

| No.   | Item                                                                                                                      | Acceptance Criteria and Test Value                                                  | Pass                     | Fail                     | N/A                      |
|-------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| 1-4   | Security function test<br><input type="checkbox"/> Not applicable because it was already implemented in UVProbe Test 2-4. |                                                                                     |                          |                          |                          |
| 1-4-1 | Password log management function check                                                                                    | Duplicate password is not accepted.                                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1-4-2 | Number of password characters check                                                                                       | Change to a password shorter than the minimum number of characters is not accepted. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|       |                                                                                                                           | Change to a password with the minimum number of characters is accepted.             | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 1-4-3 | Failed login detection                                                                                                    | Login prohibited with an incorrect password but possible with the correct password. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1-4-4 | User lockout function check                                                                                               | Login is locked out.                                                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|       |                                                                                                                           | Login prohibited for the designated lockout time.                                   | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 1-4-5 | Failed login record                                                                                                       | Login failures recorded in the log.                                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comment

☒ N/A

Performer (signature)



Date: 11 / 06 / 2025

Reviewer (signature)

Date: / /

| No. | Item                                                    | Acceptance Criteria and Test Value                                                                                                                           | Pass                     | Fail                     | N/A                                 |
|-----|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|-------------------------------------|
| 1-5 | User access rights check                                | "User Administration" item shall be enabled for OQ_USER_2 but disabled for OQ_USER_1.                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 1-6 | Test of function to prevent duplicate user registration | Duplicate user cannot be registered and a message is displayed indicating that the setting is not possible because the Login ID or User Name already exists. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 1-7 | Data display, search, and sort check                    | Samples shall be searched correctly.                                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
|     |                                                         | Samples shall be displayed in correct sequence after a sort.                                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
|     |                                                         | Link file 1 peak detection/point pick table contents shall be identical to those of the UVProbe report.                                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
|     |                                                         | The content of data set log shall be identical to that of the UVProbe report.                                                                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 1-8 | Data recovery                                           | File shall be saved correctly.                                                                                                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 2   | UVProbe auto registration check                         | Peak detection/point pick results shall be identical to those of UVProbe Test 2-7-1.                                                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
|     |                                                         | Re-registration shall be accomplished without overwriting                                                                                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
|     |                                                         | The displayed content of data log shall be identical to that of the UVProbe report.                                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 3   | UVProbe manual registration check                       | Data registered, without overwriting.                                                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
|     |                                                         | Data matches in printed results.                                                                                                                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 4   | Electronic signature check                              | Electronic signature information shall be printed correctly.                                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 5   | System log recording check                              | Change to configuration settings shall be registered in the System Log.                                                                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |

Comment

☐ N/A

Performer (signature)

Date:

11 / 06 / 2025

Reviewer (signature)

Date:

/ /

## 4. Attached Documents

[Calibration Certificate and Instruments Used]

| Attachment                                                          | Description                                                     | List of Attachment |
|---------------------------------------------------------------------|-----------------------------------------------------------------|--------------------|
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | 10%T Neutral Density Filter (for the spectrophotometers)        |                    |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | 30%T Neutral Density Filter (for the spectrophotometers)        |                    |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Wavelength Reference (for the spectrophotometers)               |                    |
| <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes | Temperature-controlled cell holder (for the spectrophotometers) |                    |
| <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes | Digital thermometer                                             |                    |
| <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes | Platinum resistance temperature sensor                          |                    |
| <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes | Thermocouple                                                    |                    |
| <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes |                                                                 |                    |
| <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes |                                                                 |                    |

[Test Data]

| Attachment                                                          | Description                                                                                                | List of Attachment           |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------|
| <input type="checkbox"/> Workstation UVProbe                        |                                                                                                            | <input type="checkbox"/> N/A |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 1-4 Printer test printout                                                                             |                              |
| <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes | Test 1-5 Network connection test                                                                           |                              |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 2-2 Program alteration check<br>(Alteration check on UV Probe and Shimadzu User Authentication Tool.) |                              |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 2-3 Shimadzu User Authentication Tool connection check                                                |                              |
| <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes | Test 2-7-1 Function check (Peak detection/point pick)                                                      |                              |
| <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes | Test 2-7-2 Function check (Quantitation)                                                                   |                              |
| <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes | Test 3-2 Program alteration check<br>(Alteration check on UV Validation software.)                         |                              |
| <input checked="" type="checkbox"/> Spectrophotometer               |                                                                                                            | <input type="checkbox"/> N/A |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 2 Initial setup check                                                                                 |                              |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 3 Wavelength accuracy                                                                                 |                              |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 4 Wavelength repeatability                                                                            |                              |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 5 Photometric accuracy                                                                                |                              |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 6 Photometric repeatability                                                                           |                              |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 7 Baseline flatness                                                                                   |                              |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 8 Resolution (Spectral bandwidth)                                                                     |                              |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 9 Resolution (Absorbance ratio)                                                                       |                              |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 10 Stray light                                                                                        |                              |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 11 Noise level                                                                                        |                              |
| <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | Test 12 Drift (baseline stability)                                                                         |                              |

Comment

☐ N/A

[Test Data]

| Attachment                                                              | Description                                                 | List of Attachment           |
|-------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------|
| <input type="checkbox"/> Syringe Sipper N/CN                            |                                                             | <input type="checkbox"/> N/A |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 4 Carry-over check                                     |                              |
| <input type="checkbox"/> DIS-1200                                       |                                                             | <input type="checkbox"/> N/A |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 2 Cell position check                                  |                              |
| <input type="checkbox"/> DIS-8                                          |                                                             | <input type="checkbox"/> N/A |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 2 Cell position check                                  |                              |
| <input type="checkbox"/> CPS-240A/B                                     |                                                             | <input type="checkbox"/> N/A |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 2 Cell position check                                  |                              |
| <input type="checkbox"/> MPU                                            |                                                             | <input type="checkbox"/> N/A |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 1 Printing test                                        |                              |
| <input type="checkbox"/> ESC/P Compatible Printer                       |                                                             | <input type="checkbox"/> N/A |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 1 Printing test                                        |                              |
| <input type="checkbox"/> PCL Compatible Printer                         |                                                             | <input type="checkbox"/> N/A |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 1 Printing test                                        |                              |
| <input type="checkbox"/> CLASS-Agent                                    |                                                             | <input type="checkbox"/> N/A |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 1-2 Program alteration check                           |                              |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 1-3 Shimadzu User Authentication Tool connection check |                              |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 1-7 Data display, search and sort check                |                              |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 2 UVProbe auto registration check                      |                              |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 3 UVProbe manual registration check                    |                              |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 4 Electronic signature check                           |                              |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 5 System log                                           |                              |
| <input type="checkbox"/> COL-UVPC (Color Measurement Software)          |                                                             | <input type="checkbox"/> N/A |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 2 Program alteration check                             |                              |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 3 Function check                                       |                              |
| <input type="checkbox"/> FLM-UVPC (Film Thickness Measurement Software) |                                                             | <input type="checkbox"/> N/A |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 2 Program alteration check                             |                              |
| <input type="checkbox"/> No <input type="checkbox"/> Yes                | Test 3 Function check                                       |                              |

NOTE: Attached data shall be numbered by adding a letter in alphabetical order starting with A (e.g. Attachment A-1/3 - A-3/3). Enter the number in the list above and attach data to this document.

Comment

N/A

Performer (signature)

Date:

11 / 05 / 2025

Reviewer (signature)

Date:

/ /

# User authentication tool configuration

Version : 1.10  
Date : 2025/06/11 10:19:34  
Name : System Administrator  
PC : DESKTOP-F66LO5G  
Database name : C:\Windows\SysWOW64\SMZATST.MDB

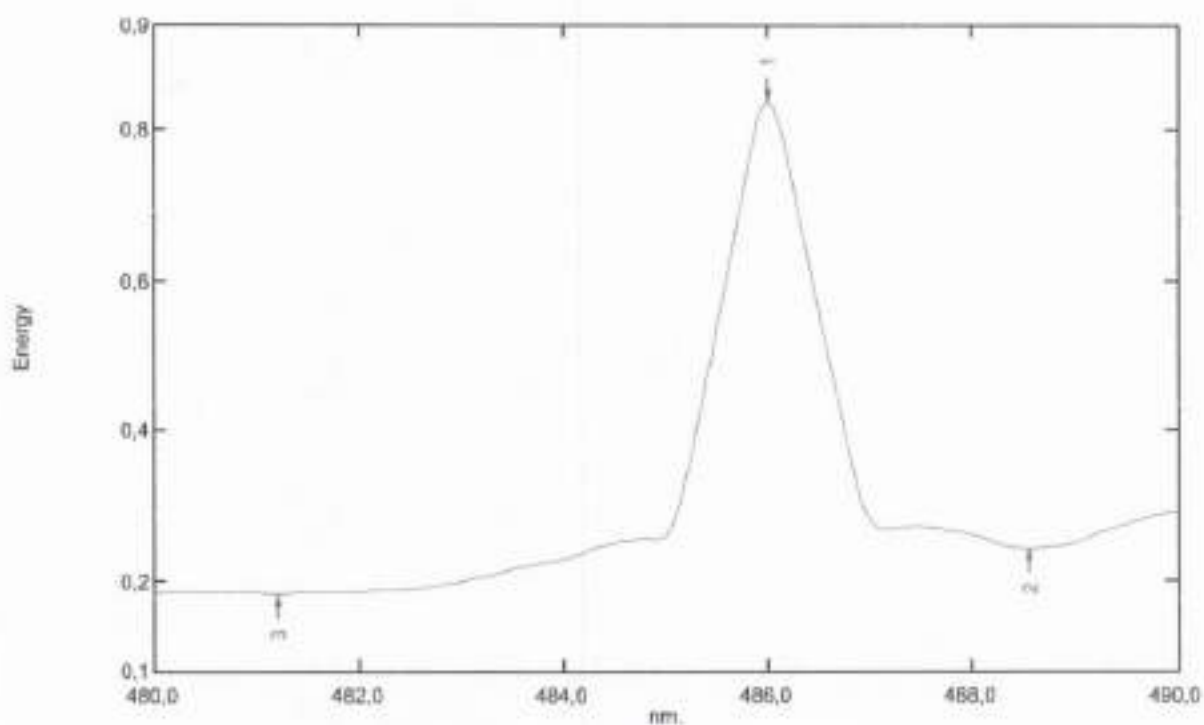
---

|                                               |                  |                    |
|-----------------------------------------------|------------------|--------------------|
| Minimum password length :                     | 0                | characters         |
| Maximum password age :                        | 0                | days               |
| Minimum password age :                        | 0                | days               |
| Same password is permitted :                  | Yes              |                    |
| Passwords must meet complexity requirements : | No               |                    |
| User must change password at next login :     | No               |                    |
| Unlimited user's logout :                     | No               |                    |
| User logout duration :                        | 15               | minutes            |
| User logout after :                           | 0                | bad login attempts |
| PC logout duration :                          | 15               | minutes            |
| PC logout after :                             | 0                | bad login attempts |
| Description :                                 |                  |                    |
| User's logout E-mail :                        | User was locked. |                    |
| PC's logout E-mail :                          | PC was locked.   |                    |
| Transmission address of e-mail :              |                  |                    |
| SMTP :                                        |                  |                    |
| Port :                                        | 25               |                    |
| Subject :                                     |                  |                    |
| From :                                        |                  |                    |
| User's logout message :                       | User was locked. |                    |
| PC's logout message :                         | PC was locked.   |                    |
| PC of a transmission place :                  |                  |                    |

# Spectrum Peak Pick Report

10:01:32

Data Set: C:\Ditek\WL Accuracy 486 nm.spc - RawData

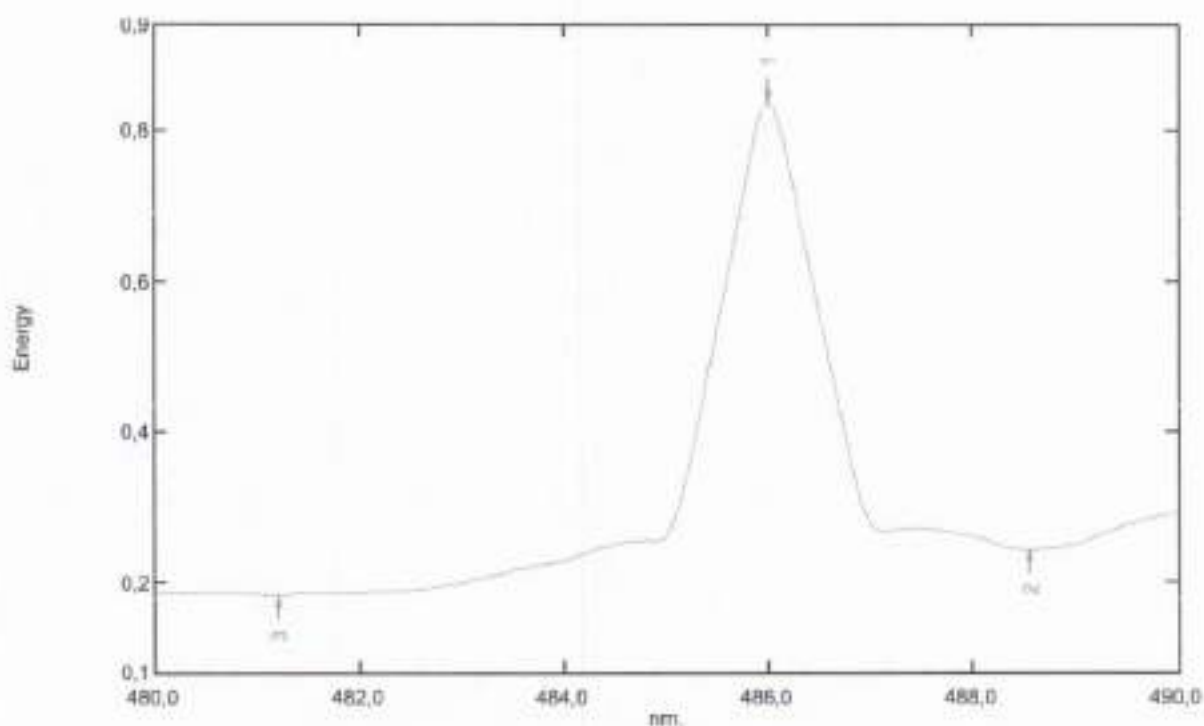


| No. | P/V | Wavelength | Energy | Description |
|-----|-----|------------|--------|-------------|
| 1   | ⊕   | 486.0      | 0.8    | 0.0         |
| 2   | ⊖   | 488.6      | 0.2    |             |
| 3   | ⊖   | 481.2      | 0.2    |             |

# Spectrum Peak Pick Report

10:02:09

Data Set: C:\Ditek\WL Repeatability 486 nm\_094925.spc - RawData-001

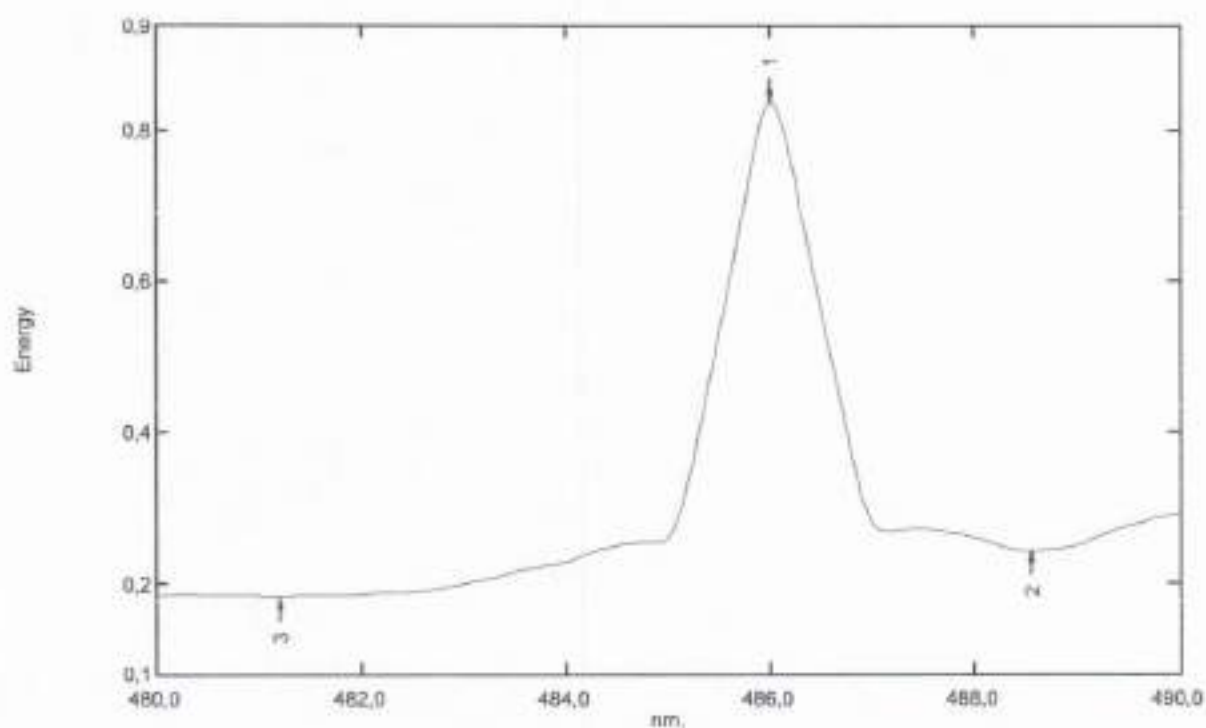


| No. | P/V | Wavelength | Energy | Description |
|-----|-----|------------|--------|-------------|
| 1   | ⊕   | 486.0      | 0.8    |             |
| 2   | ⊖   | 488.6      | 0.2    |             |
| 3   | ⊖   | 481.2      | 0.2    |             |

# Spectrum Peak Pick Report

10:03:13

Data Set: C:\Ditek\WL Repeatability 486 nm\_094925.spc - RawData-003

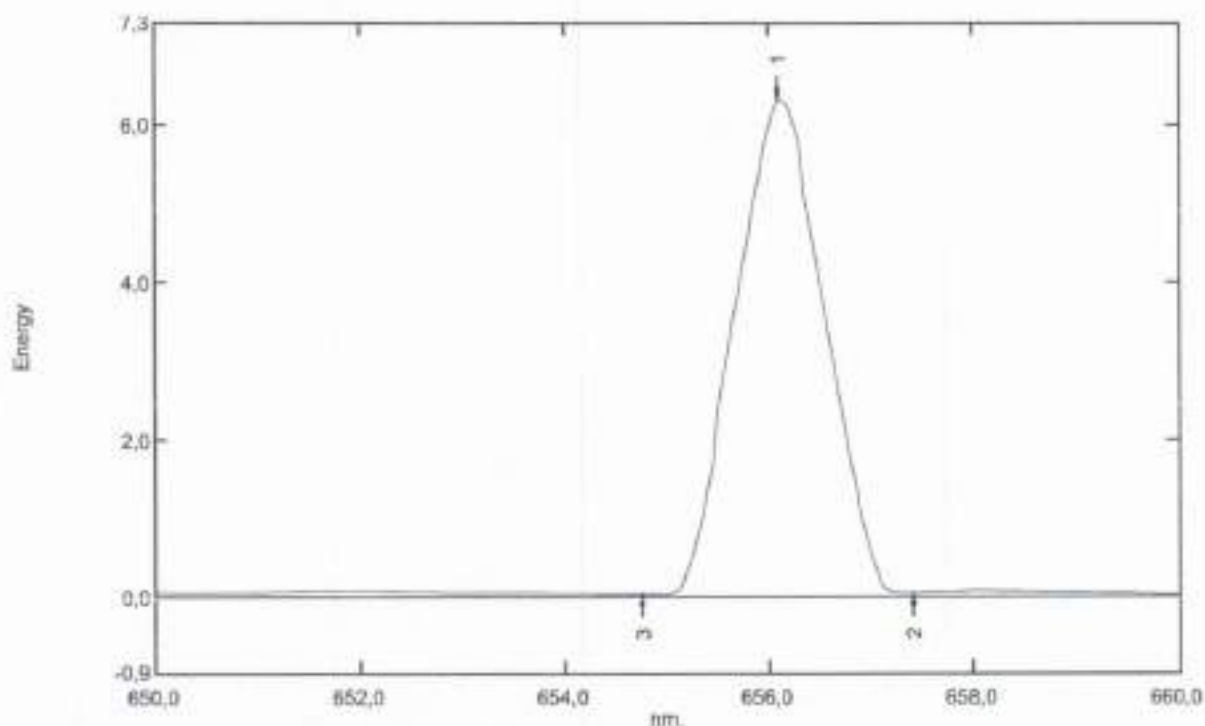


| No. | P/V | Wavelength | Energy | Description |
|-----|-----|------------|--------|-------------|
| 1   | ⊕   | 486.0      | 0.8    |             |
| 2   | ⊙   | 488.6      | 0.2    |             |
| 3   | ⊙   | 481.2      | 0.2    |             |

# Spectrum Peak Pick Report

09:58:47

Data Set: C:\Ditek\WL Accuracy 656 nm.spc - RawData

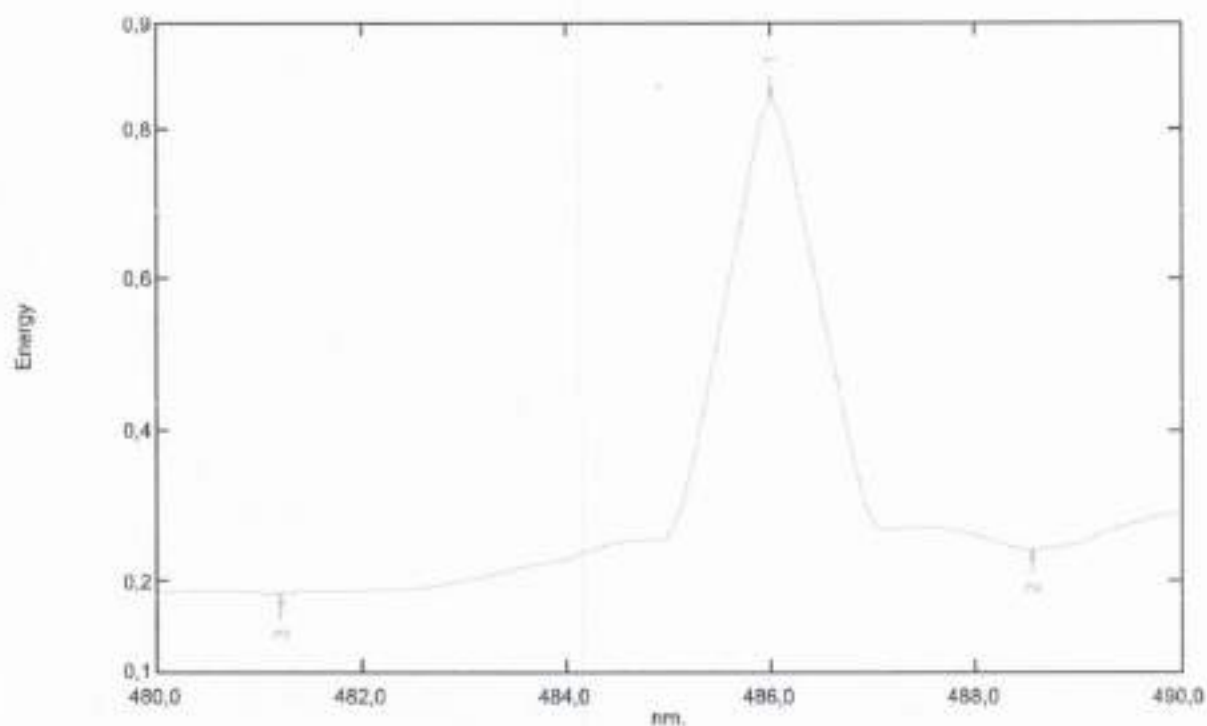


| No. | P/V | Wavelength | Energy | Description |
|-----|-----|------------|--------|-------------|
| 1   | ⊕   | 656.1      | 6.3    | 0.0         |
| 2   | ⊗   | 657.4      | 0.1    |             |
| 3   | ⊗   | 654.8      | 0.1    |             |

# Spectrum Peak Pick Report

10:02:38

Data Set: C:\Ditek\WL Repeatability 486 nm\_094925.spc - RawData-002

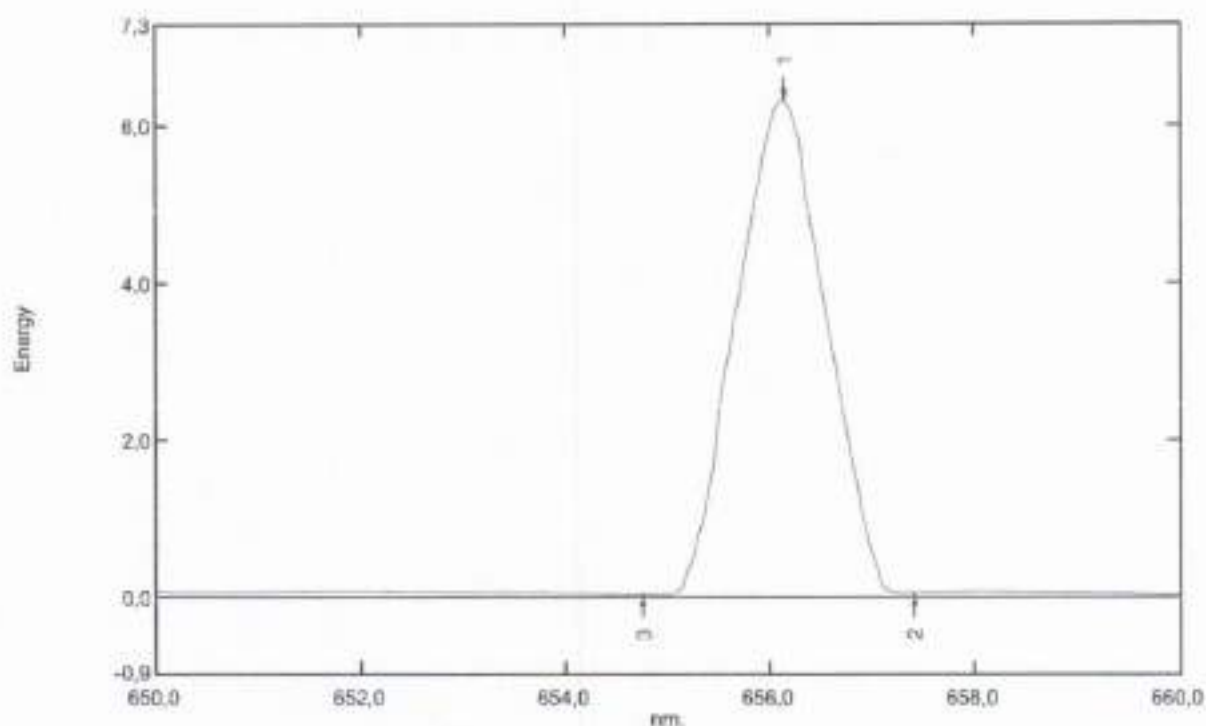


| No. | P/V | Wavelength | Energy | Description |
|-----|-----|------------|--------|-------------|
| 1   | ⊕   | 486.0      | 0.8    |             |
| 2   | ⊙   | 488.6      | 0.2    |             |
| 3   | ⊙   | 481.2      | 0.2    |             |

# Spectrum Peak Pick Report

09:59:13

Data Set: C:\Ditek\WL Repeatability 656 nm\_093912.spc - RawData-001

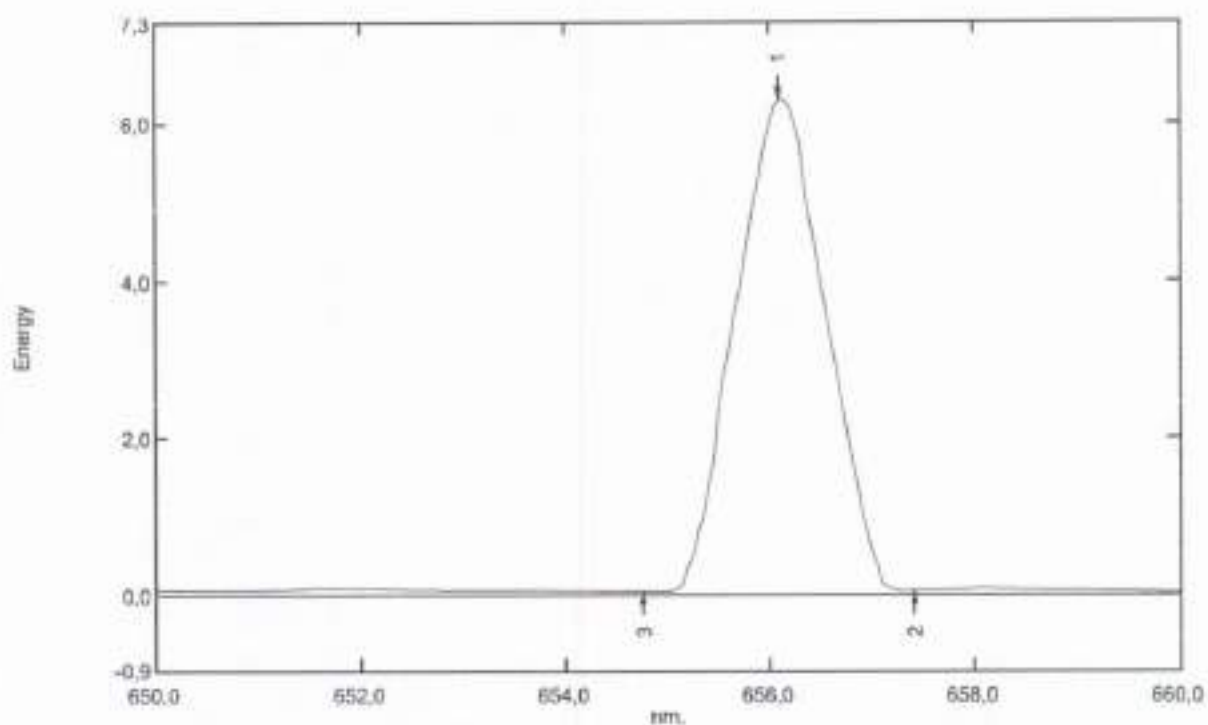


| No. | P/V | Wavelength | Energy | Description |
|-----|-----|------------|--------|-------------|
| 1   | ⊕   | 656.2      | 6.3    |             |
| 2   | ⊙   | 657.4      | 0.1    |             |
| 3   | ⊙   | 654.8      | 0.1    |             |

# Spectrum Peak Pick Report

09:59:30

Data Set: C:\Ditek\WL Repeatability 656 nm\_093912.spc - RawData-002

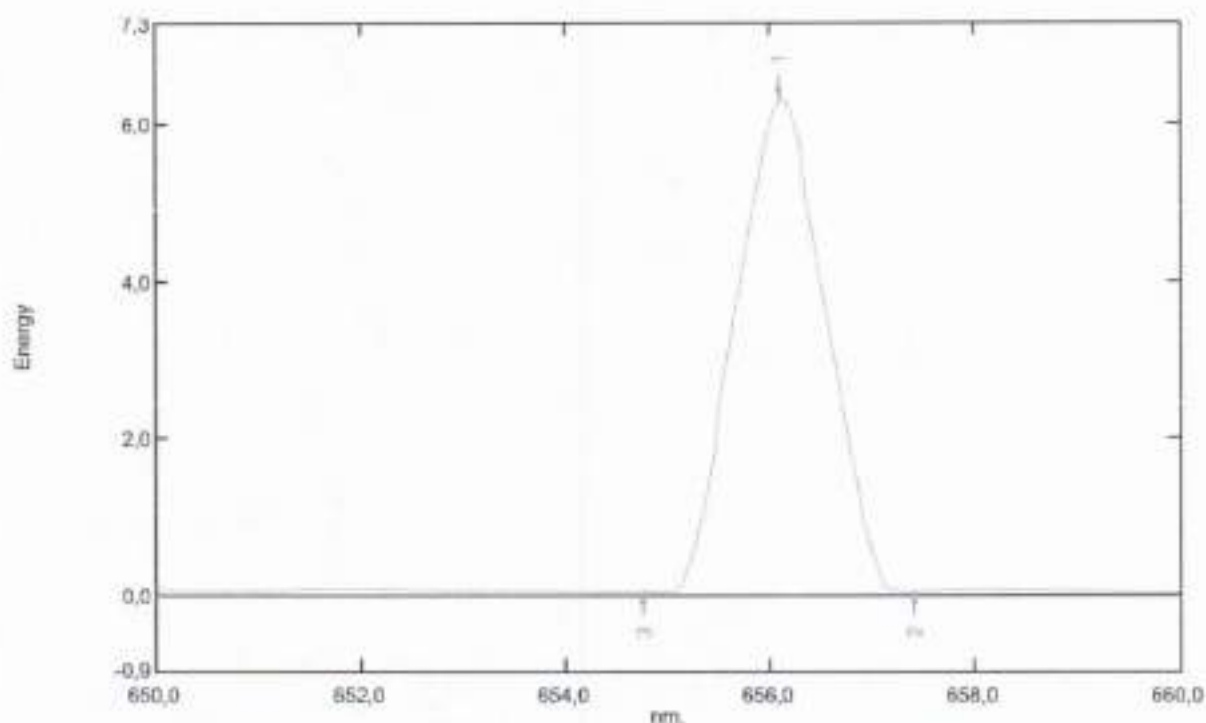


| No. | P/V | Wavelength | Energy | Description |
|-----|-----|------------|--------|-------------|
| 1   | ⊕   | 656.1      | 6.3    |             |
| 2   | ⊗   | 657.4      | 0.1    |             |
| 3   | ⊗   | 654.8      | 0.1    |             |

# Spectrum Peak Pick Report

09:59:50

Data Set: C:\Ditek\WL Repeatability 656 nm\_093912.spc - RawData-003

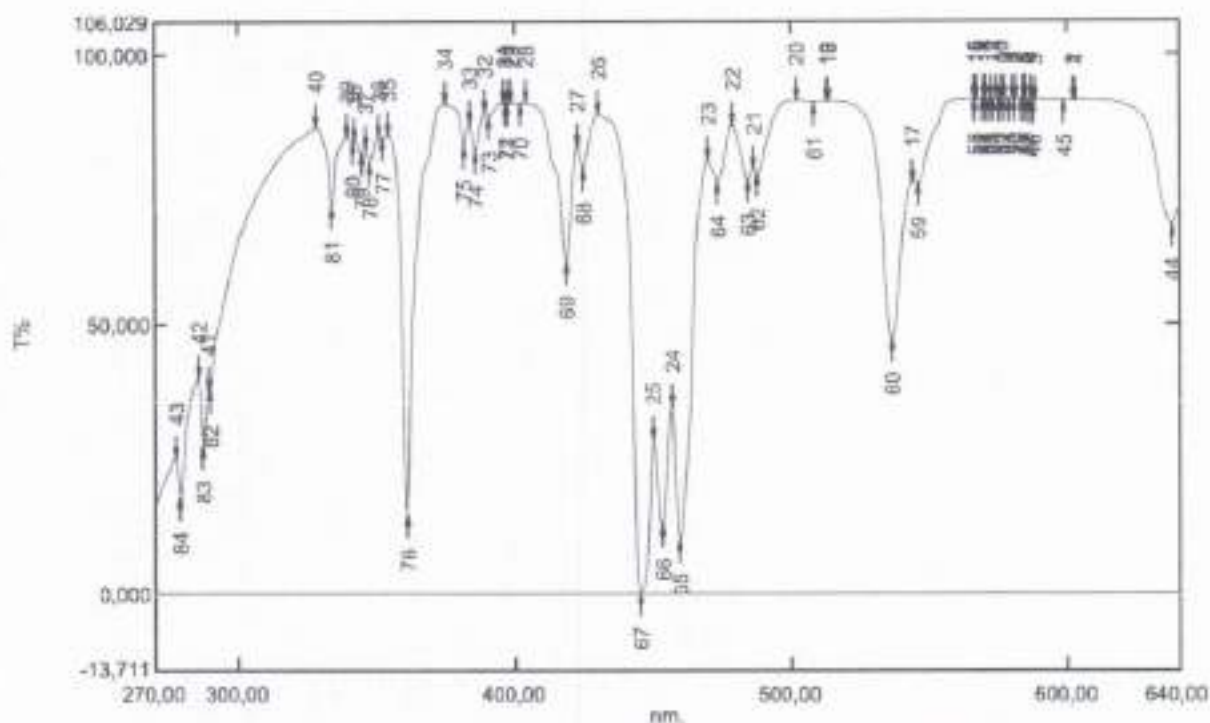


| No. | P/V | Wavelength | Energy | Description |
|-----|-----|------------|--------|-------------|
| 1   | ⊕   | 656.1      | 6.3    |             |
| 2   | ⊙   | 657.4      | 0.1    |             |
| 3   | ⊙   | 654.8      | 0.1    |             |

# Spectrum Peak Pick Report

11:39:07

Data Set: C:\Ditek\WL Accuracy Holmium.spc - RawData

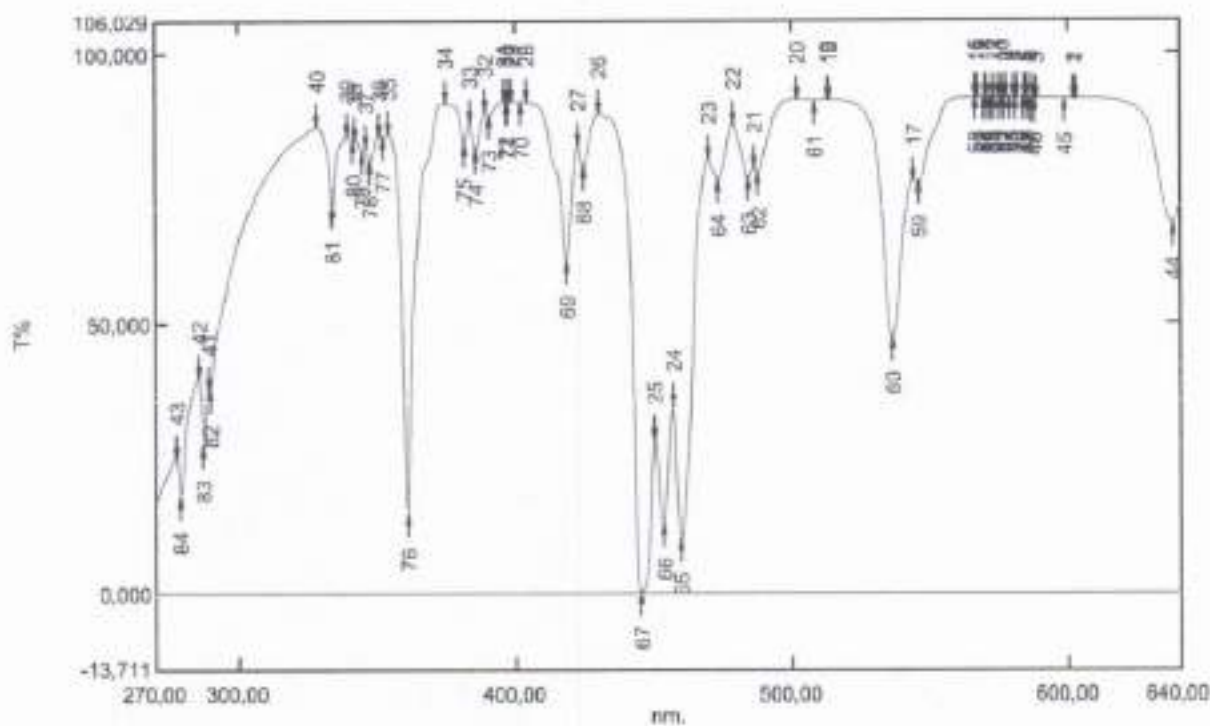


| No. | P/V | Wavelength | T%     | Description |
|-----|-----|------------|--------|-------------|
| 44  | ⊕   | 637.71     | 68.635 | 0.04        |
| 45  | ⊕   | 598.64     | 91.545 |             |
| 46  | ⊕   | 587.73     | 91.577 |             |
| 47  | ⊕   | 586.38     | 91.679 |             |
| 48  | ⊕   | 585.13     | 91.684 |             |
| 49  | ⊕   | 583.98     | 91.685 |             |
| 50  | ⊕   | 581.18     | 91.699 |             |
| 51  | ⊕   | 579.24     | 91.702 |             |
| 52  | ⊕   | 576.95     | 91.699 |             |
| 53  | ⊕   | 575.51     | 91.702 |             |
| 54  | ⊕   | 573.56     | 91.698 |             |
| 55  | ⊕   | 572.27     | 91.697 |             |
| 56  | ⊕   | 570.67     | 91.703 |             |
| 57  | ⊕   | 569.31     | 91.703 |             |
| 58  | ⊕   | 566.92     | 91.701 |             |
| 59  | ⊕   | 545.98     | 76.108 |             |
| 60  | ⊕   | 536.40     | 47.479 | 0.0         |
| 61  | ⊕   | 508.44     | 91.295 |             |
| 62  | ⊕   | 488.03     | 78.011 |             |
| 63  | ⊕   | 484.34     | 76.823 |             |
| 64  | ⊕   | 473.78     | 76.783 |             |
| 65  | ⊕   | 460.03     | 10.307 |             |
| 66  | ⊕   | 453.46     | 13.142 | 0.09        |
| 67  | ⊕   | 445.86     | 0.592  |             |

# Spectrum Peak Pick Report

11:39:07

Data Set: C:\Ditek\WLAaccuracy Holmium.spc - RawData

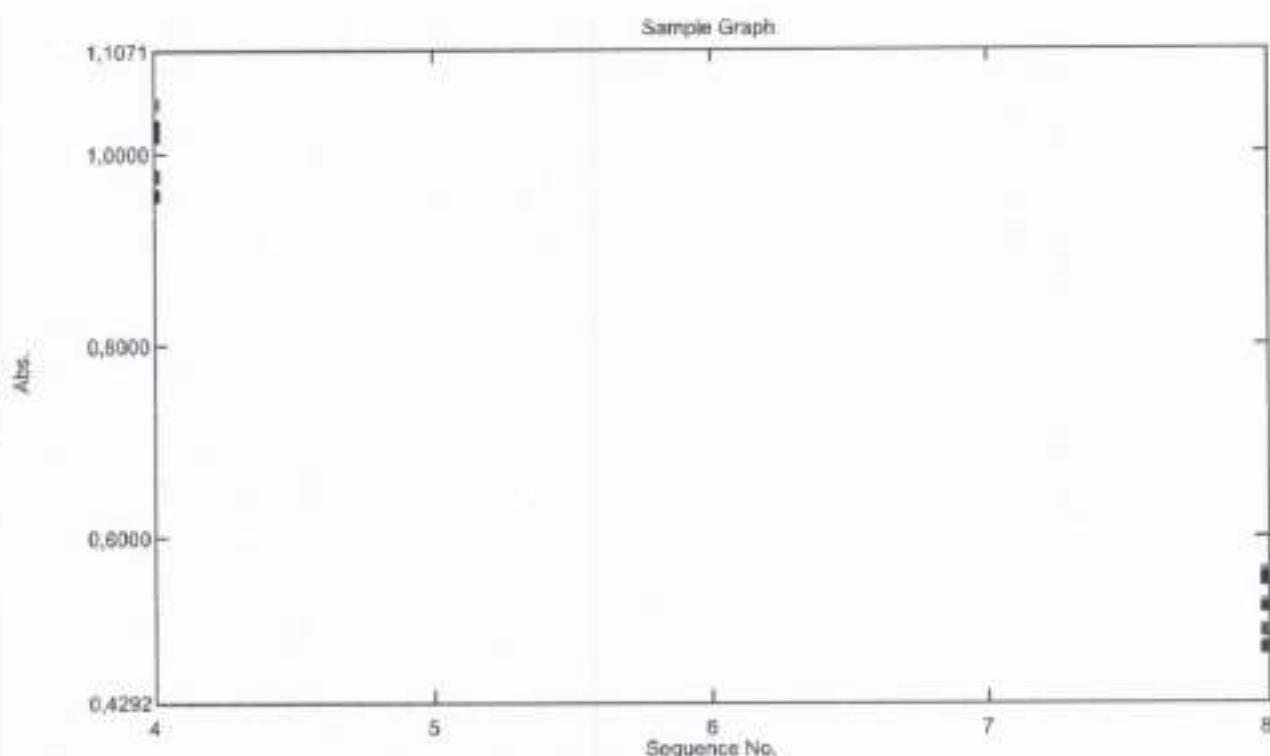


| No. | P/V | Wavelength | T%     | Description |
|-----|-----|------------|--------|-------------|
| 68  | ●   | 424.80     | 79.111 |             |
| 69  | ●   | 418.58     | 61.822 |             |
| 70  | ●   | 401.99     | 90.990 |             |
| 71  | ●   | 397.82     | 91.072 |             |
| 72  | ●   | 396.50     | 91.064 |             |
| 73  | ●   | 390.80     | 88.613 |             |
| 74  | ●   | 385.84     | 82.358 |             |
| 75  | ●   | 381.64     | 83.408 |             |
| 76  | ●   | 360.82     | 14.851 | 0.03        |
| 77  | ●   | 352.00     | 84.613 |             |
| 78  | ●   | 347.73     | 80.195 |             |
| 79  | ●   | 344.54     | 81.958 |             |
| 80  | ●   | 341.26     | 84.037 |             |
| 81  | ●   | 333.92     | 71.961 |             |
| 82  | ●   | 289.81     | 37.847 |             |
| 83  | ●   | 287.47     | 27.815 |             |
| 84  | ●   | 279.22     | 18.274 | 0.08        |

# Sample Table Report

11/06/2025 11:52:17

File Name: C:\Ditek\11062025\Photometric Accuracy.unk



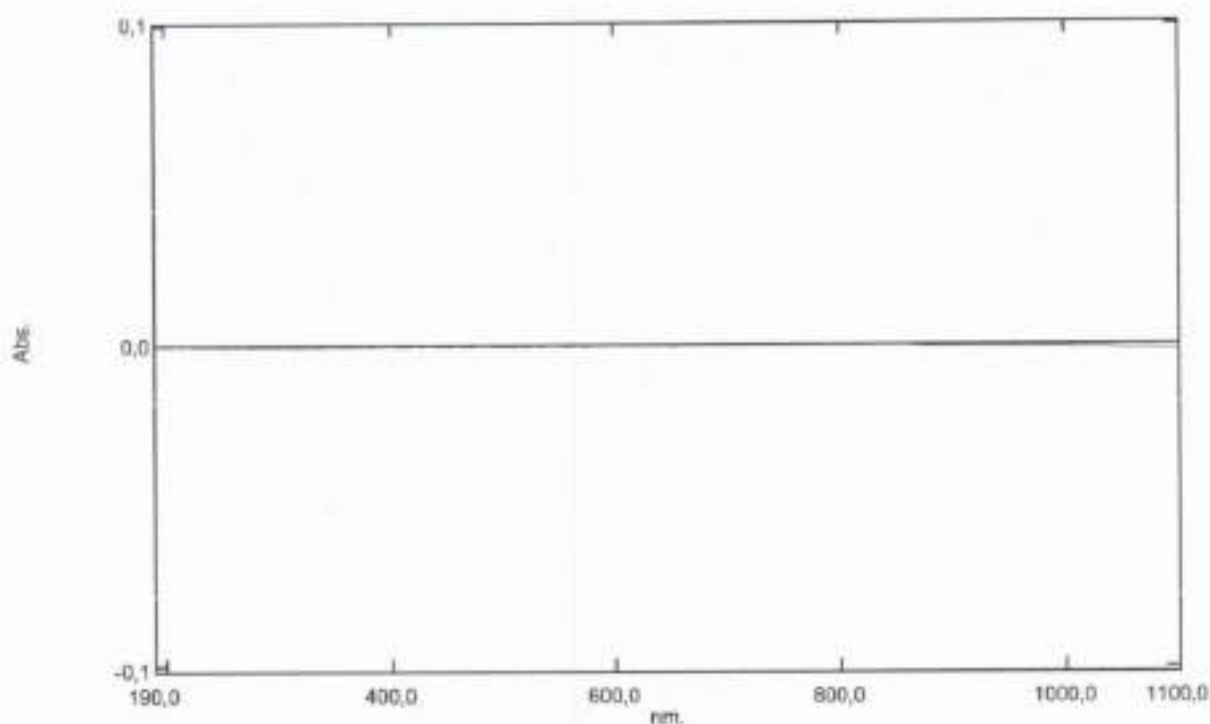
Sample Table

|   | Sample ID   | Type       | Ex | WL440,0 | WL465,0 | WL546,1 | WL590,0 | WL635,0 | Comments           |
|---|-------------|------------|----|---------|---------|---------|---------|---------|--------------------|
| 1 | Near1       | Unk-Repeat |    | 1.0282  | 0.9557  | 0.9767  | 1.0507  | 1.0181  |                    |
| 2 | Near1-2     | Unk-Repeat |    | 1.0282  | 0.9558  | 0.9767  | 1.0506  | 1.0181  |                    |
| 3 | Near1-3     | Unk-Repeat |    | 1.0281  | 0.9556  | 0.9767  | 1.0506  | 1.0181  |                    |
| 4 | Near1-Avg   | Average    |    | 1.0282  | 0.9557  | 0.9767  | 1.0506  | 1.0181  | Avg of preceding 3 |
| 5 | Near0.5     | Unk-Repeat |    | 0.5294  | 0.4856  | 0.5021  | 0.5618  | 0.5571  |                    |
| 6 | Near0.5-2   | Unk-Repeat |    | 0.5294  | 0.4857  | 0.5020  | 0.5618  | 0.5571  |                    |
| 7 | Near0.5-3   | Unk-Repeat |    | 0.5294  | 0.4856  | 0.5020  | 0.5618  | 0.5571  |                    |
| 8 | Near0.5-Avg | Average    |    | 0.5294  | 0.4857  | 0.5020  | 0.5618  | 0.5571  | Avg of preceding 3 |
| 9 |             |            |    |         |         |         |         |         |                    |

# Spectrum Peak Pick Report

10:51:42

Data Set: C:\Ditek\Baseline Flatness.spc - RawData

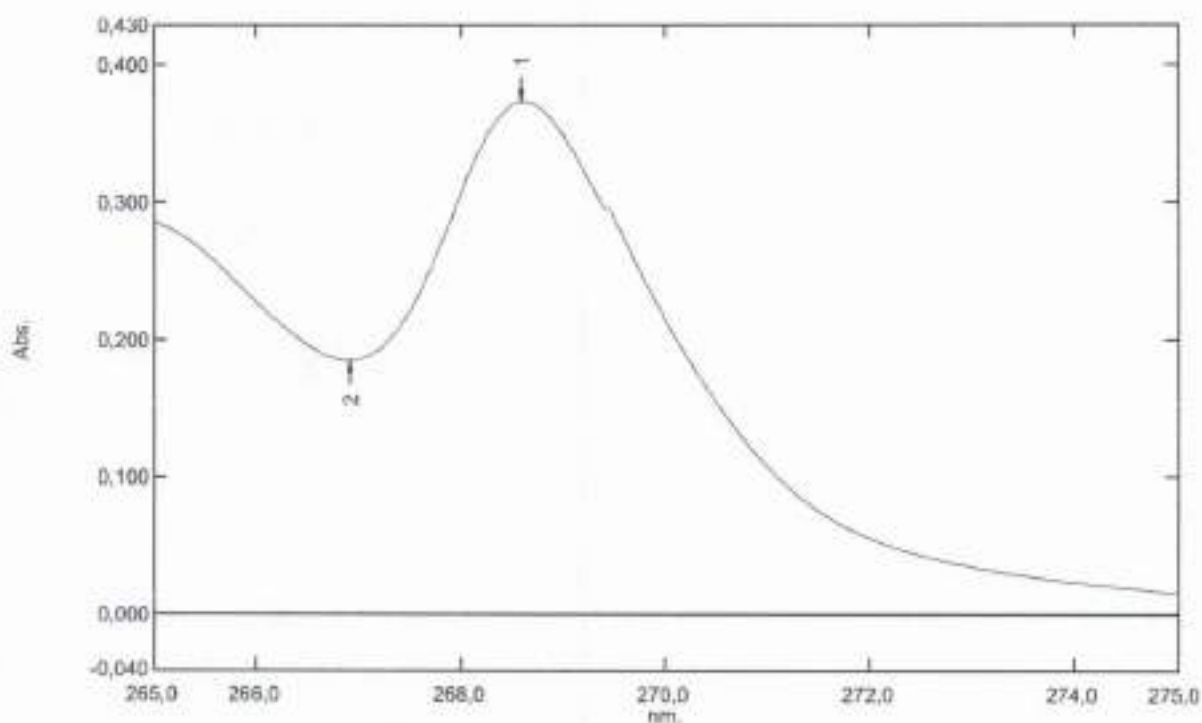


| No. | P/V | Wavelength | Abs. | Description |
|-----|-----|------------|------|-------------|
|-----|-----|------------|------|-------------|

# Spectrum Peak Pick Report

11:05:38

Data Set: C:\Ditek\Resolution Absorbance.spc - RawData



| No. | P/V | Wavelength | Abs.  | Description |
|-----|-----|------------|-------|-------------|
| 1   | ⊕   | 268.5      | 0.374 |             |
| 2   | ⊖   | 266.9      | 0.185 |             |

$$\frac{0.374}{0.185} = 2.0211$$

## Lampiran Hasil Kalibrasi

### Resolution Bandwidth



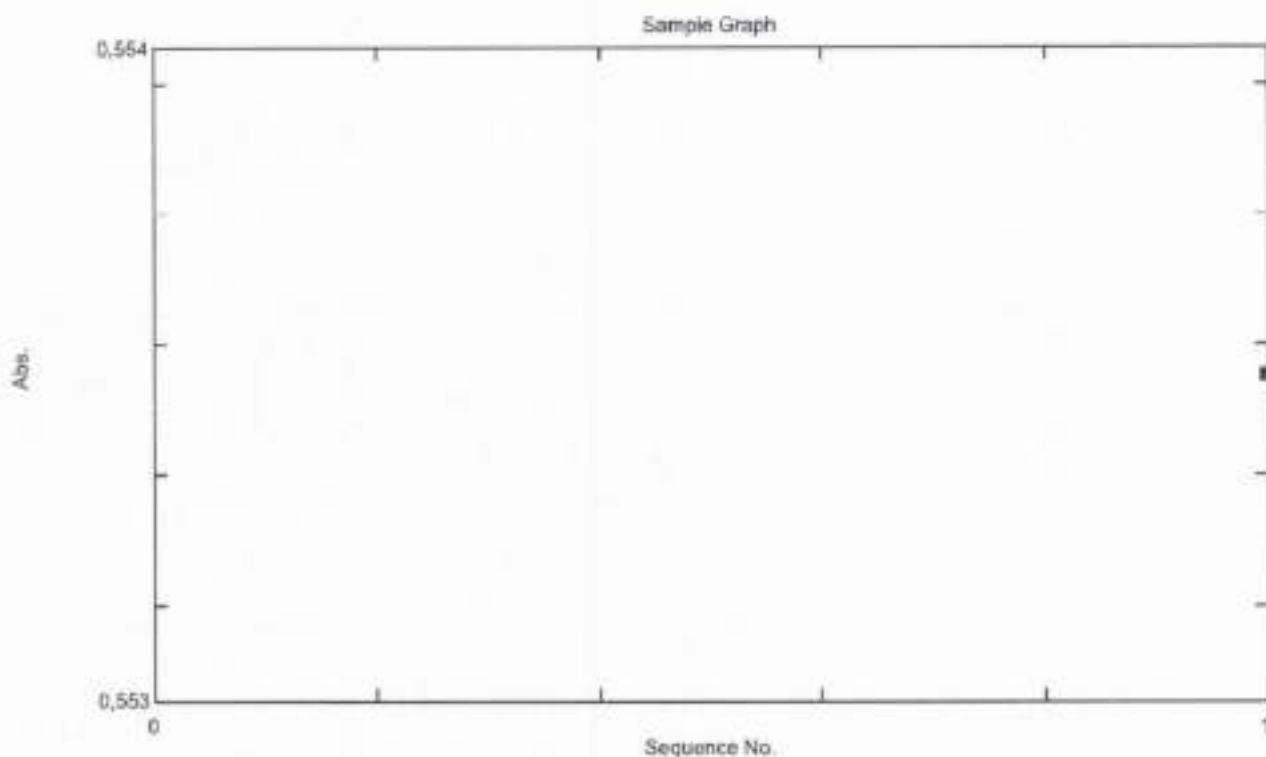
### Noise



# Sample Table Report

11/06/2025 11:55:42

File Name: C:\Ditek\11062025\Straylight.unk



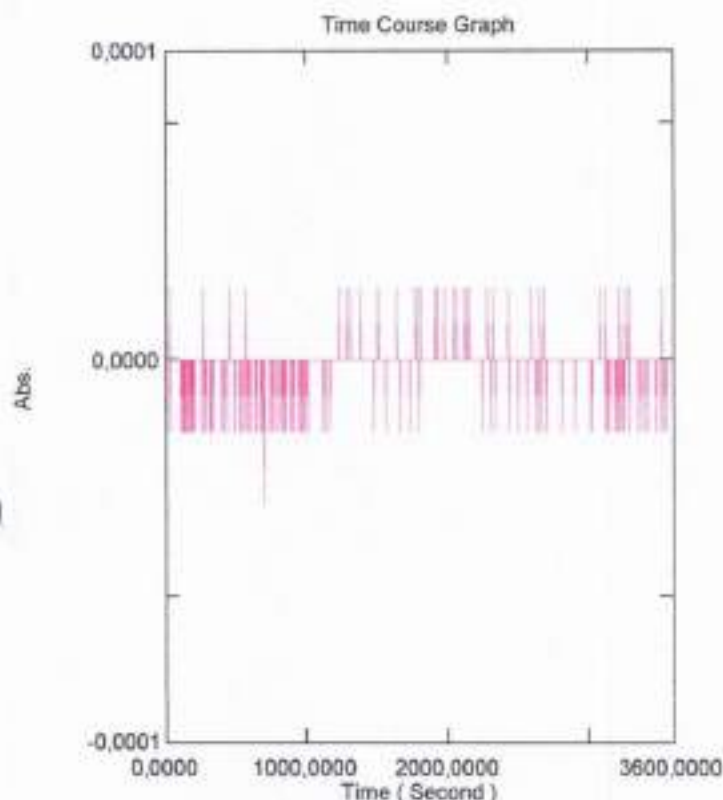
Sample Table

|   | Sample ID | Type    | Ex | WL198,0 | Comments |
|---|-----------|---------|----|---------|----------|
| 1 | Stray     | Unknown |    | 0,554   |          |
| 2 |           |         |    |         |          |

# Kinetics Peak Pick Report

11/06/2025 13:38:25

Data Set: Stability - RawData



| No. | P/V | Time ( Seco | Abs. | Description |
|-----|-----|-------------|------|-------------|
|-----|-----|-------------|------|-------------|

## [Measurement Properties]

Data Acquisition: Auto  
Total Time: 3600.000  
Time Unit: Second  
Cycle Time: 2.0  
Number of Readings: 1801  
Enable Delay: Off  
Activity Start: 0.000  
Activity End: 3600.000  
Record Events: Off  
Wavelength mode: Single Wavelength  
Wavelength 1: 700.0nm  
Factor: 1.000  
Correction Factor: 1.000

## [File Option Properties]

Auto increment of filename: Off  
Save multi cell data in same file: Off

## [Instrument Properties]

Instrument Type: UV-1900 Series  
Measuring Mode: Absorbance  
Slit Width: 1,0 nm  
Light Source Change Wavelength: 340,8 nm  
S/R Exchange: Normal

## [Attachment Properties]

Attachment: None

## [Acquisition Parameters]

Start Time: 0.00 Second  
End Time: 3600.00 Second  
Data Points: 1801  
Acquisition Rate: 2.00 Second

## [Sample Preparation Properties]

Weight:  
Volume:  
Dilution:  
Path Length:  
Additional information:



## Windows Printer Test Page

You have correctly installed your EPSON L120 Series on DESKTOP-F66LO5G.

### PRINTER PROPERTIES

Submitted Time: 10:46:53  
Date: 11/06/2025  
User Name: DESKTOP-F66LO5G\user  
Computer Name: DESKTOP-F66LO5G  
Printer Name: EPSON L120 Series  
Printer Model: EPSON L120 Series  
Color Support: Yes  
Port Name(s): USB001  
Data Format: RAW  
Printer Share Name:  
Printer Location:  
Print Processor: winprint  
Comment:  
Separator Page  
Location:  
OS Environment: Windows x64

### PRINT DRIVER PROPERTIES

Driver Name: EPSON L120 Series  
Driver Type: Type 3 - User Mode  
Driver Version: 2.13.0.0

### ADDITIONAL PRINT DRIVER FILES

C:\Windows\system32\spool\DRIVERS\x64\3\E\_YDSPLUE.DLL  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YJBCLUE.DLL  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YUMRLUE.DLL  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YB301LUE.BIN  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YCONLUE.DLL  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YAUDLUE.DLL  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YREDLUE.DLL  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_WATO46.EXE  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YTSLUE.EXE  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YTSLUE.DAT  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YUIRLUE.DLL  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YUI1LUE.DLL  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YUIPLUE.DLL  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_TCXLUA.CFX  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_TCXLUE.CFX  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_TCXLUE.USX  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_TCXLUE.DCX  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_TCF0LUE.DEV  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YGRCLUE.DLL  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YPRULUE.DLL  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YPRELUE.EXE  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YLMWLUE.DLL  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YLC1LUE.LMC  
C:\Windows\system32\spool\DRIVERS\x64\3\E\_YLC2LUE.LMC

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