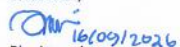


TOC Analyzer

Parameter	Requirement	Criticality	a	Score	Criticality x Score	b	Score	Criticality x Score	c	Score	Criticality x Score
Image											
Local Distributor	Available		Vision Scientific			Vanadia Utama			Seotra Sains Indonesia Hase Utama		
Brand	N/A		Veolia			Analytik Jena			Teledyne Indonesia		
Type	N/A		TOC M9 Laboratory with Autosampler			Multi N/C 4300			TOC Fusion UV/Persulfate		
Indent Time	N/A		6 - 10 weeks			12-14 weeks (will be informed if arrived earlier)			8 - 12 weeks		
Price (Before tax, based on Quotation)	N/A		IDR 1.721.564.750			IDR 1.355.000.000			IDR 1.550.000.000		
Placement	Benchtop	2	Benchtop	1	2	Benchtop	1	2	Benchtop		
Measuring range	5 ppb - 10 ppm	3	0.03 ppb to 50 ppm	1	3	0 - 10000 ppm	1	3	0.2 ppb to 4000 ppm	1	3
Operation mode	Using PC	2	Using PC or standalone	1	2	PC/laptop	1	2	PC/laptop	1	2
Sample volume	20 - 50 ml	2	40 ml	1	2	20 ml	1	2	40 ml	1	2
Sample temp	5 - 80 C	2	5-95 °C	1	2	5 - 80 C	1	2	5 - 80 C	1	2
Precision	NMT 5% RSD	3	< 1%	1	3	1%-2% RSD	1	3	1%	1	3
Accuracy	+/- 5% or +/- 2 ppb	3	± 2% or ± 0.5 ppb, whichever is greater	1	3	+/- 5%	1	3	Precision: = 1.0% RSD, +/- 2 ppb or +/- 0.02 µgC, typical of a mid-range standard (Whichever is greater over seven replicates)	1	3
Dimension WDH	NMT 75 x 80 x 100 cm	1	24.6 x 40.0 x 42.2 cm	1	1	Main unit : 513 x 547 x 464 mm Autosample : Approx. 350 mm x 400 mm x 470 mm	1	1	45.7 x 62.2 x 81.3 cm	1	1
Weight	NMT 50 kg	1	9.4 kg	1	1	Main unit : 18 kg Autosample : Approx. 15 kg	1	1	50 kg	1	1
Data transfer/connectivity	Printer and USB	1	Printer and USB	1	1	Printer and USB	1	1	Printer and USB	1	1
Report file	Uneditable (e.g., PDF)	3	PDF dan CSV (excel). File di aplikasi bawaan software tidak dapat diedit	1	3	PDF dan CSV (excel). File di aplikasi bawaan software tidak dapat diedit	1	3	reports exportable XML, CSV (excel) and HTML format. File di aplikasi bawaan software tidak dapat diedit	1	3
Printer	Included	1	Included	1	1	Included	1	1	Included	1	1
PC/laptop	Included	1	Included	1	1	Included	1	1	Included	1	1
Autosampler	Available	3	Available	1	3	Available	1	3	Available	1	3
Sample port number	NLT 12 samples (using autosampler)	2	63 (40 ml)	1	2	AS varie 100 racks/samples (20ml Vial)	1	2	75 (40 ml) 120 (20 ml)	1	2
Consumable	N/A	2	Vial, septa, reagent (acid + base)	1	2	Vial, aluminium foil, Argon gas (high purity grade)	1	2	Vial, septa, Nitrogen gas (high purity grade)	1	2
Installation	Easy, no special requirement	3	Easy, no special requirement	1	3	Need Argon gas pipe installation	0	0	Need Nitrogen gas pipe installation	0	0
CFR 21 part 11 compliance	Comply	3	Comply, with Dataguard Software	1	3	Comply, with Pharma software	1	3	Comply, with reLink Operation Software	1	3
IQ OQ PQ	Included	3	Included IQ OQ PQ	1	3	Included IQ OQ PQ	1	3	Included IQ OQ PQ	1	3
Calibration	Included	3	Included	1	3	Included	1	3	Included	1	3
CSV	Included	2	Included	1	2	Not available	0	0	Not available	0	0
Total Score			44			39			39		
Remark			TOC M9 Laboratory with Autosampler tidak memerlukan jalur piping dan satu-satunya vendor yang dapat memenuhi ketentuan CSV (dengan biaya tambahan). Harga yang dicantumkan mencakup set unit, IQOQPQ, kalibrasi, software 21CFR part 11, serta CSV			Multi N/C 4300 memerlukan jalur pipa karena proses rutinnya memerlukan gas argon, di mana instalasi pipa tersebut sudah include dalam penawaran vendor. Kekurangan dari brand ini adalah tidak bisa provide CSV. Harga yang dicantumkan mencakup set unit, IQOQPQ, kalibrasi, software 21CFR part 11, serta instalasi jalur pipa			TOC Fusion UV/Persulfate memerlukan jalur pipa karena proses rutinnya memerlukan gas Nitrogen. Instalasi tersebut belum termasuk ke dalam penawaran vendor, sehingga jika brand ini dipilih maka akan ada biaya tambahan untuk instalasi pipa. Selain itu, untuk jasa CSV tidak dapat diprovide. Harga yang dicantumkan mencakup set unit, IQOQPQ, kalibrasi, serta software 21CFR part 11		

Conclusion:
Berdasarkan kemampuan alat, ketiganya memiliki performa yang comparable dan memiliki kekurangan yaitu tidak semua format laporannya uneditable (.csv dapat diedit di excel) sehingga memerlukan kontrol internal Biovac (SOP). Namun, TOC M9 (Vision Teknik) memiliki keunggulan dapat memenuhi ketentuan CSV (dengan biaya tambahan) serta memiliki inden yang lebih singkat. Berdasarkan hal tersebut, maka user merekomendasikan untuk TOC M9. Meskipun harga total yang ditawarkan lebih tinggi, namun jika dengan spesifikasi apple to apple (tanpa CSV) maka brand TOC M9 ini memiliki harga yang comparable dibandingkan dengan brand lainnya.

Dibuat oleh,

Diny Lucyane
Quality Manager

Disetujui oleh,

Dyah Arum M.
Site Head

Note	Criticality	3	High
		2	Medium
		1	Low
	Compliance Score	1	Meet specification
		0	Not meet specification