MOLECULAR DEVICES

Validation Certificate

Instrument

Product	Serial No.	Version	Date
QuickDrop	#900346	V1.0.3 May 11 2020	21 Nov 2022 2:36 PM

Wavelength Accuracy

Filter	Expected	Observed	Tolerance	Result
Holmium Perchlorate	240.97 nm	240.11 nm	2.11 nm	Pass
Holmium Perchlorate	277.93 nm	277.70 nm	2.11 nm	Pass
Holmium Perchlorate	287.78 nm	287.49 nm	2.11 nm	Pass
Holmium Perchlorate	333.47 nm	333.14 nm	2.11 nm	Pass
Holmium Perchlorate	345.58 nm	345.34 nm	2.11 nm	Pass
Holmium Perchlorate	361.13 nm	360.71 nm	2.11 nm	Pass
Holmium Perchlorate	386.44 nm	385.69 nm	2.11 nm	Pass
Holmium Perchlorate	417.32 nm	416.35 nm	2.11 nm	Pass
Holmium Perchlorate	451.40 nm	451.07 nm	2.11 nm	Pass
Holmium Perchlorate	485.25 nm	484.91 nm	2.11 nm	Pass
Holmium Perchlorate	641.66 nm	641.06 nm	2.11 nm	Pass
Holmium Oxide HG	334.16 nm	333.76 nm	2.10 nm	Pass
Holmium Oxide HG	361.11 nm	360.75 nm	2.10 nm	Pass
Holmium Oxide HG	418.59 nm	417.86 nm	2.10 nm	Pass
Holmium Oxide HG	536.76 nm	536.53 nm	2.10 nm	Pass
Holmium Oxide HG	637.95 nm	637.33 nm	2.10 nm	Pass
Didymium DG	528.59 nm	528.43 nm	2.11 nm	Pass
Didymium DG	585.56 nm	585.39 nm	2.11 nm	Pass
Didymium DG	684.70 nm	684.09 nm	2.11 nm	Pass
Didymium DG	747.61 nm	747.00 nm	2.11 nm	Pass
Didymium DG	807.04 nm	806.61 nm	2.11 nm	Pass

Stray Light

Filter	Expected	Observed	Result
Sodium Iodide (220 nm)	< 0.500 %T	0.473 %T	Pass
Sodium Nitrite (340 nm)	< 0.500 %T	0.226 %T	Pass
GG375 (340 nm)	< 0.500 %T	0.261 %T	Pass

Absorbance Accuracy

Filter	Expected	Observed	Tolerance	Result
3N (440 nm)	0.5127 A	0.5222 A	0.0107 A	Pass
3N (546 nm)	0.4740 A	0.4827 A	0.0107 A	Pass
3N (590 nm)	0.5077 A	0.5149 A	0.0107 A	Pass
3N (635 nm)	0.5149 A	0.5226 A	0.0107 A	Pass
N3 (440 nm)	1.5705 A	1.5905 A	0.0259 A	Pass
N3 (546 nm)	1.4784 A	1.4988 A	0.0243 A	Pass
N3 (590 nm)	1.5082 A	1.5248 A	0.0247 A	Pass
N3 (635 nm)	1.4245 A	1.4439 A	0.0236 A	Pass
N1 (440 nm)	2.0706 A	2.0861 A	0.0336 A	Pass
N1 (546 nm)	1.9485 A	1.9724 A	0.0318 A	Pass
N1 (590 nm)	1.9879 A	2.0089 A	0.0354 A	Pass
N1 (635 nm)	1.8778 A	1.8989 A	0.0309 A	Pass
D3 (440 nm)	2.7440 A	2.7357 A	0.0703 A	Pass
D3 (546 nm)	2.5288 A	2.5584 A	0.0411 A	Pass
D3 (590 nm)	2.6082 A	2.6072 A	0.0681 A	Pass
D3 (635 nm)	2.4554 A	2.4632 A	0.0394 A	Pass

Test Location: Unit 7 Enterprise zone, 3970 Cambridge Research Park, Beach Drive, Waterbeach, Cambridge CB25 9PE UK

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Noise 260 nm(Air)

Value	Expected	Observed	Tolerance	Result
Peak to Peak	< 0.005 A	0.00079 A	n/a	Pass
RMS (mean deviation)	< 0.002 A	0.00028 A	n/a	Pass

Noise 546 nm(Air)

Value	Expected	Observed	Tolerance	Result
Peak to Peak	< 0.005 A	0.00093 A	n/a	Pass
RMS (mean deviation)	< 0.002 A	0.00031 A	n/a	Pass

Baseline

Value	Expected	Observed		Result
Air (220nm - 800nm)	< 0.006 A	0.00177 A		Pass

Filter Calibration Data

Name	Serial No.	Calibrated	Comment	Traceable to
Holmium Perchlorate	111183	2022-03-08	+/- 0.11 nm	NIST SRM 2034
Holmium Oxide HG	73994	2022-03-08	+/- 0.10 nm	NIST SRM 2034
Didymium DG	110003	2022-03-08	+/- 0.11 nm	NIST SRM 2034
Stray Light Blank	110196	2022-03-08		
Sodium Iodide	107832	2022-03-08		NIST SRM 2032
Sodium Nitrite	114589	2022-03-08		NIST SRM 2032
GG375	54528	2022-03-08		NIST SRM 2032
9N	69410	2022-03-08	Absorbance Blank	NIST 930e & 1930
3N	74248	2022-03-08	+/- 0.0027 A	NIST 930e & 1930
N3	74337	2022-03-08	+/- 0.0052 A	NIST 930e & 1930
N1	73681	2022-03-08	+/- 0.0059 A	NIST 930e & 1930
D3	72093	2022-03-08	+/- 0.0110 A	NIST 930e & 1930

Test Engineer: Lawrence Young

Signed: Lawrence Young **Date:** 21 NOV 2022

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Product Number	*5047178*
Product Description	*QuickDrop Spectrophotometer*
Item Description	**Qty**
QuickDrop	1
Power Supply 18V 2.2A 2.5mm	1
Mains Leads 3/Pack Figure 8 Co	1
USB Cable A-B EMC Special	1
Dust Cover	1
USB Stick	1
Quick Start Guide	1
Validation Certificate	1
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A