OL 770VIS-DMS and OL 770VIS/NIR-DMS
Display Measurement Systems Specifications

OL 770VIS-DMS Specifications	
Wavelength Range	380 – 780 nm
Optical Bandwidth	3 nm standard (with 100 µm input slit; 50 µm and 200 µm slits also available)
Spectral Resolution	0.4 nm
Wavelength Accuracy	± 0.5 nm
Luminance Accuracy [1]	± 2%
Chromaticity Accuracy [2]	± 0.002 x,y
Chromaticity Repeatability	± 0.00015 x, ± 0.0002 y
Polarization Error	< 1%
Stray Light (tungsten source)	< $2.5E^{-4}$
Linearity Error	< 0.5%
Measurement Time	Auto or manual integration times from 0.02 to 60 seconds.
A/D Resolution	16 bit
A/D Rate	250 KHz
Interface	USB, RS232 (OL 610 USB only)
Operating Humidity	0 – 90% non-condensing
Operating Temperature	0 – 40° C
Power Input	100/115/220/230 VAC, 50/60 Hz

Luminous Sensitivity Range & Measurement Spot Size

Imaging Telescope	Lens Model #	Aperture Size	Lens Focal Length / Aperture		FOV	Minimum Working Distance	Spot Size @ Min. Focus	Luminance Sensitivity [3] Min. [4]	Luminance Sensitivity [3] Max. [5]
OL 610-1.0	OL 610-L-100	1 mm ϕ	50 mm f/1.8		1°	33 cm	6.0 mm ϕ 0.236”ϕ	0.001 fL 0.003 cd/m^2	350 fL 1200 cd/m^2
OL 610-1.0	OL 610-L-110	1 mm ϕ	60 mm f/2.8 Macro		1°	7 cm	1.0 mm ϕ 0.039” ϕ	0.001 fL 0.003 cd/m^2	350 fL 1200 cd/m^2
OL 610-1.0	OL 610-L-110 / 210 Combination	1 mm ϕ	60 mm f/2.8 Macro w/ Close Up Lens Kit	+ 1	1°	6 cm	0.95 mm ϕ 0.037” ϕ	0.001 fL [6] 0.003 cd/m^2	350 fL [6] 1200 cd/m^2
				+ 2	1°	5.7 cm	0.9 mm ϕ 0.035” ϕ	0.001 fL [6] 0.003 cd/m^2	350 fL [6] 1200 cd/m^2
				+ 4	1°	5.5 cm	0.75 mm ϕ 0.030” ϕ	0.001 fL [6] 0.003 cd/m^2	350 fL [6] 1200 cd/m^2
OL 610-0.5	OL 610-L-100	0.5 mm ϕ	50 mm f/1.8		½°	33 cm	3.0 mm ϕ 0.118” ϕ	0.004 fL 0.014 cd/m^2	1400 fL 4800 cd/m^2
OL 610-0.5	OL 610-L-110	0.5 mm ϕ	60 mm f/2.8 Macro		½°	7 cm	0.5 mm ϕ 0.020” ϕ	0.004 fL 0.014 cd/m^2	1400 fL 4800 cd/m^2
OL 610-0.5	OL 610-L-110 / 210 Combination	0.5 mm ϕ	60 mm f/2.8 Macro w/ Close Up Lens Kit	+ 1	½°	6 cm	0.48 mm ϕ 0.019” ϕ	0.004 fL [6] 0.014 cd/m^2	1400 fL [6] 4800 cd/m^2
				+ 2	½°	5.7 cm	0.45 mm ϕ 0.018” ϕ	0.004 fL [6] 0.014 cd/m^2	1400 fL [6] 4800 cd/m^2
				+ 4	½°	5.5 cm	0.38 mm ϕ 0.015” ϕ	0.004 fL [6] 0.014 cd/m^2	1400 fL [6] 4800 cd/m^2

Notes:
[1] The luminance accuracy for an illuminant A incandescent source with a CCT of 2856K.
[2] The chromaticity accuracy for an illuminant A source.
[3] Sensitivity ranges when measuring an illuminant A source.
[4] Minimum value with an integration time of 10 seconds and 10:1 signal to noise ratio.
[5] The maximum luminance value can be increased by a factor of 30 when the lens aperture is closed to f/22.
[6] The minimum and maximum sensitivity values increase by ~ 10% when a close up lens is fitted to the macro lens.

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OL 770VIS/NIR-DMS Specifications

Wavelength Range	380 – 1100 nm
Optical Bandwidth	5.0 nm standard (with 100 µm input slit; 50 µm and 200 µm also available)
Spectral Resolution	0.75 nm
Wavelength Accuracy	± 1.0 nm
Luminance Accuracy [7]	± 2%
Chromaticity Accuracy [8]	± 0.002 x,y
Chromaticity Repeatability [8]	± 0.00015 x, ± 0.0002 y
Polarization Error	< 1%
Stray Light (tungsten source)	< $2.5E^{-4}$
Linearity Error	< 0.5%
Measurement Time	Auto or manual integration times from 0.02 to 60 seconds.
A/D Resolution	16 bit
A/D Rate	250 KHz
Interface	USB, RS232 (OL 610 USB only)
Operating Humidity	0 – 90% non-condensing
Operating Temperature	0 – 40° C
Power Input	100/115/220/230 VAC, 50/60 Hz

Luminous Sensitivity Range & Measurement Spot Size

Imaging Telescope	Lens Model #	Aperture Size	Lens Focal Length / Aperture		FOV	Minimum Working Distance	Spot Size @ Min. Focus	Luminance Sensitivity [9]	
								Min. [10]	Max. [11]
OL 610-1.0	OL 610-L-100	1 mm ϕ	50 mm f/1.8		1°	33 cm	6.0 mm ϕ 0.236"ϕ	0.001 fL 0.003 cd/m^2	350 fL 1200 cd/m^2
OL 610-1.0	OL 610-L-110	1 mm ϕ	60 mm f/2.8 Macro		1°	7 cm	1.0 mm ϕ 0.039" ϕ	0.001 fL 0.003 cd/m^2	350 fL 1200 cd/m^2
OL 610-1.0	OL 610-L-110 / 210 Combination	1 mm ϕ	60 mm f/2.8 Macro w/ Close Up Lens Kit	+ 1	1°	6 cm	0.95 mm ϕ 0.037" ϕ	0.001 fL [12] 0.003 cd/m^2	350 fL [12] 1200 cd/m^2
				+ 2	1°	5.7 cm	0.9 mm ϕ 0.035" ϕ	0.001 fL [12] 0.003 cd/m^2	350 fL [12] 1200 cd/m^2
				+ 4	1°	5.5 cm	0.75 mm ϕ 0.030" ϕ	0.001 fL [12] 0.003 cd/m^2	350 fL [12] 1200 cd/m^2
OL 610-0.5	OL 610-L-100	0.5 mm ϕ	50 mm f/1.8		½°	33 cm	3.0 mm ϕ 0.118" ϕ	0.004 fL 0.014 cd/m^2	1400 fL 4800 cd/m^2
OL 610-0.5	OL 610-L-110	0.5 mm ϕ	60 mm f/2.8 Macro		½°	7 cm	0.5 mm ϕ 0.020" ϕ	0.004 fL 0.014 cd/m^2	1400 fL 4800 cd/m^2
OL 610-0.5	OL 610-L-110 / 210 Combination	0.5 mm ϕ	60 mm f/2.8 Macro w/ Close Up Lens Kit	+ 1	½°	6 cm	0.48 mm ϕ 0.019" ϕ	0.004 fL [12] 0.014 cd/m^2	1400 fL [12] 4800 cd/m^2
				+ 2	½°	5.7 cm	0.45 mm ϕ 0.018" ϕ	0.004 fL [12] 0.014 cd/m^2	1400 fL [12] 4800 cd/m^2
				+ 4	½°	5.5 cm	0.38 mm ϕ 0.015" ϕ	0.004 fL [12] 0.014 cd/m^2	1400 fL [12] 4800 cd/m^2

Notes:
7 The luminance accuracy for an illuminant A incandescent source with a CCT of 2856K.
8 The chromaticity accuracy for an illuminant A source.
9 Sensitivity ranges when measuring an illuminant A source.
10 Minimum value with an integration time of 10 seconds and 10:1 signal to noise ratio.
11 The maximum luminance value can be increased by a factor of 30 when the lens aperture is closed to f/22.
12 The minimum and maximum sensitivity values increase by ~ 10% when a close up lens is fitted to the macro lens.

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