

## 1.1.1.6 Integrating Spheres

### 1.1.1.6.2 VIS 1.5" High Speed Response, Multi-functional Integrating Sphere

400nW – 4W

#### Features

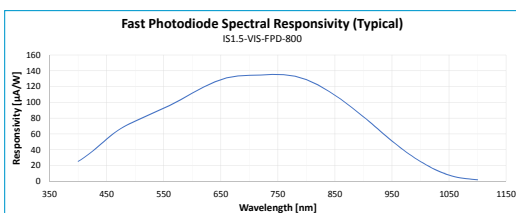
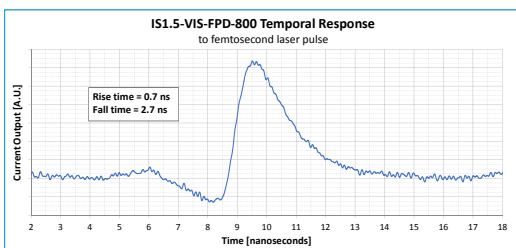
- Fast photodiode for pulse shape characterization of VCSELs
- Built in SMA fiber adapter for connection to a spectrometer
- Large, 20mm input port enabling long working distance
- Accepts beams with divergence angles up to  $\pm 60^\circ$
- Small integrating sphere with short time constant

IS1.5-VIS-FPD-800



Model	IS1.5-VIS-FPD-800		
Use	Multi-functional Integrating Sphere		
<b>Specifications</b>		<b>Detector 2</b>	
Input Port Aperture mm	Ø20	Type	Fast Si photodiode
Maximum Beam Divergence <sup>(a)</sup> , <sup>(b)</sup> deg°	±60	Function	Temporal pulse shape detection
Damage Threshold on Integrating Sphere Surface W/cm <sup>2</sup>	200 (average power)	Spectral Range µm	0.4 – 1.1
Integrating Sphere Time Constant nsec	0.7 typ.	Rise Time nsec	0.8
Fiber Optic Port	SMA connector, maximum NA 0.44	Fall Time nsec	2.8
Outputs	Smart Head for power measurement, BNC (50Ω) for temporal pulse shape detection, SMA for optical fiber	Bias Voltage Input VDC	12
Cooling	Convection	Peak CW Responsivity @ 740nm µA/W <sup>(d)</sup>	135 typ.
Operating Temperature Range °C	+15 to +40	CW Responsivity @ 940nm µA/W <sup>(d)</sup>	55 typ.
Storage Temperature Range °C	-20 to +60	Saturation Current Output mA	2.7 (for 10 ns pulse)
Humidity	The product must not be exposed to high humidity. Range 20% ~ 70% RH non-condensing	Dark Current nA	0.3 typ., 1 max
		Noise Current fA/√Hz	18 typ.
		Output	Analog current, BNC
<b>Detector 1</b>		<b>General</b>	
Type	Si photodiode, calibrated	Weight g	530
Function	Average power	Compliance	CE, UKCA, China RoHS
Spectral Range µm	0.4 – 1.1	Part number	7Z02491
Power Range	400nW – 4W		
Power Scales	4W to 40µW		
Power Accuracy <sup>(b)</sup>	±3% 430nm – 1000nm, ±4% < 430nm, ±7% > 1000nm		
Linearity with Power ±%	2		
Power Noise Level nW	20 typ.		
Saturation Pulse Energy mJ	2 typ.		
Calibration Uncertainty nm	±1.1% 430-1000 <sup>(c)</sup>		
Output	Smart Head, D15		

Notes: (a) For central 2 mm diameter of entrance aperture  
 (b) Power Accuracy and Sensitivity to Beam Size and Angle specifications apply to beam divergence up to  $\pm 45^\circ$  and central 5.6 mm diameter of entrance aperture, for larger divergence and/or area of entrance aperture these specifications increase by 2%  
 (c) For calibration uncertainty of wavelengths outside of this range see table on page 24  
 (d) Responsivity data provided with sensor



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