

IS

Integrating sphere detector for laser power measurement up to 1 kW



**INNOVATIONS AWARDS
2022
LaserFocusWorld**

**WILLIAM M.
STEEN AWARD**

OUTPUT OPTIONS

- > **integra ALL-IN-ONE-METER**
Connects directly to a PC
Two models available:
 - USB output (-INT)
 - RS-232 output (-IDR)

COMPATIBLE PC INTERFACES



INTEGRA

KEY FEATURES

- > **FASTEST RESPONSE**
With its silicon sensor, the integrating sphere is as fast as a photodiode.
- > **WIDE POWER RANGE**
Very low noise level = wide power range with just one device
- > **HIGH AVERAGE POWER**
Measure up to 1000 W of continuous power.
- > **RESISTANT COATING**
Our proprietary coating is designed to be strong. Its damage thresholds are orders of magnitude higher than any other "white" coatings on the market.
- > **PRECISE CALIBRATION**
The IS detectors have a NIST-traceable calibration for the entire calibrated spectral range.

ACCESSORIES



Stand with delrin post



Fiber adaptors & connectors
(for IS12L only)



Pelican carrying case



Isolation tube
(for IS12L only)



IS

Specifications

CE NIST*
Traceable

 VDE
*Also traceable to NRC-CNRC



	IS12L-9S-RSI-INT-D0	IS50A-1KW-RSI-INT-D0
MAXIMUM AVERAGE POWER	9 W	1000 W
EFFECTIVE APERTURE	12 mm ϕ	50 mm ϕ
COOLING METHOD	Convection	Water
MEASUREMENT CAPABILITY		
Spectral range	340 - 1100 nm	340 - 1100 nm
Calibrated spectral range	400 - 1070 nm	400 - 1070 nm
Maximum average power	9 W	1000 W
Noise equivalent power ^a	1 μ W at 1070 nm	10 μ W at 1070 nm
Maximum divergence	10° (half-angle)	10° (half-angle)
Maximum incidence angle	$\pm 10^\circ$	$\pm 25^\circ$ for beam diameter < ϕ 12mm $\pm 5^\circ$ for beam diameter > ϕ 12mm
Typical rise time	< 0.2 s	< 0.2 s
Sampling rate	15 Hz	15 Hz
Calibration uncertainty	$\pm 5.0\%$ (400 - 499 nm) $\pm 3.5\%$ (500 - 1069 nm) $\pm 2.5\%$ (1070 nm)	$\pm 5.0\%$ (400 - 499 nm) $\pm 3.5\%$ (500 - 1069 nm) $\pm 2.5\%$ (1070 nm)
Back reflections ^b	6%	12%
Linearity with power	$\pm 1\%$	$\pm 1\%$
DAMAGE THRESHOLDS		
Maximum average power density ^c	2 kW/cm ²	5 kW/cm ²
Maximum energy density ^d	400 mJ/cm ²	400 mJ/cm ²
PHYSICAL CHARACTERISTICS		
Effective aperture	12 mm ϕ	50 mm ϕ
Mounting thread	SM1	SM2
Sphere inner diameter	50 mm ϕ	100 mm ϕ
Sensor	Silicon	Silicon
Dimensions	66H x 78W x 66D mm	127H x 140W x 115D mm
Weight	0.75 kg	4 kg
ORDERING INFORMATION		
Available output options	USB or RS-232	USB or RS-232
Compatible stand	STAND-S-443	STAND-S-443-C
Product page		

- a. Nominal value. Actual value depends on environmental electromagnetic interference and wavelength.
 b. The backscattered power (also known as back reflections) is concentrated in a cone with an apex located at the back of the sphere. For IS12, the cone has a 7.5-degree half-angle. For IS50, the cone has a 15-degree half-angle.
 c. At 1064 - 1070 nm, CW.
 d. At 1064 - 1070 nm, 7 ns.

Specifications are subject to change without notice