HGH
Enlighten the Unseen

ELECTRO OPTICAL
TEST SOLUTIONS

INTEGRATING SPHERES SOURCES

hgh-infrared.com

ISV

ISV - VISIBLE TO SWIR INTEGRATING SPHERE BASED SOURCES

The ISV Integrating Sphere Sources are compact, **reliable and easy-to-operate** reference sources providing an adjustable luminance and radiance output with unprecedent accuracy and **stability**, over the Visible to NIR and SWIR spectral ranges.

They have been specifically designed for the calibration and test of cameras and sensors such as visible cameras, night vision systems, low light cameras, radiometers, visible to SWIR focal plane arrays and detectors

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The emitting head is controlled via a 2U electronic unit through an **ergonomic interface**. Superior stability and repeatability are obtained through a **closed loop control regulation** based on an optical reading and acting on an iris attenuator. As well as all other HGH sources, the ISV sources are delivered with a **certificate of radiometric calibration** linked to International Primary Standards demonstrating the accuracy and reliability of these reference sources.

BENEFITS

- Highly uniform output port up to 4 inches (>101.6 mm)
- Intuitive interface
- Real time display of the luminance or radiance
- High stability suitable for most sensitive sensors
- Wide dynamic range with ultra-stable spectrum
- Control through coloured touchscreen panel
- Radiometric calibration over multiple bandwidths including SWIR
- Easy selection of luminance and radiance units
- Display of colour temperature and night levels
- Remote control via Ethernet link, RS232, IEEE488
- Built-in test equipment (BITE)
- Infratest-Platform control software

ISV SOURCES RANGE

			
Parameters	**ISV210-F**	**ISV410**	**ISV410-SWIR**
Colour temperature	2856 K ± 100 K Factory adjustable between 2750K and 2950K		
Spectral range of radiation	300nm to 2500nm		
Maximum luminance @ 2856 K	**7000 cd/m²**	**25000 cd/m²**	
Maximum Radiance over 1.9 to 2.4 µm			**180 W/m²/sr**
Minimum radiance at peak wavelength (1000 nm)	180 W/m²/sr/µm at 3000 cd/m²	900 W/m²/sr/µm at 24 000 cd/m²	1100 W/m²/sr/µm at 120 W/m²/sr
Dynamic range	700 000	2 500 000	
Output spatial uniformity	> 98%		
Stability (peak to peak)	**1 cd/m² or 0.1% of setpoint whichever is greater**		**0.5 W/m²/sr or 0.1% of setpoint whichever is greater**
Display resolution	0.01 (cd/m² and fL)		0.01 W/m²/sr
Available units	cd/m² and FL		W/m²/sr
Warm up time	120 seconds		
Step Change Time (lamp switching excluded)	< 30 s for any 2000 cd/m² change	< 30 s for any 3000 cd/m² change	< 30 s for any 20 W/m²/sr change
Lamp life	> 500 hours		
Detector type	**Silicon**		**Cooled InGaAs**
Coating type	Teflon		
Sphere diameter	**6 inches**	**12 inches**	
Output port diameter	**2 inches**	**4 inches**	
Head weight	2.5 kg	10 kg	11 kg
Controller size and weight	2U / 5.5 kg		
Remote interface / control	Ethernet, RS232, IEEE488 / Infratest software		
Power supply	90-260 VAC – 50/60Hz - 150W	90-260 VAC – 50/60Hz - 250W	

A DEDICATED MODEL FOR SWIR SENSOR TESTING

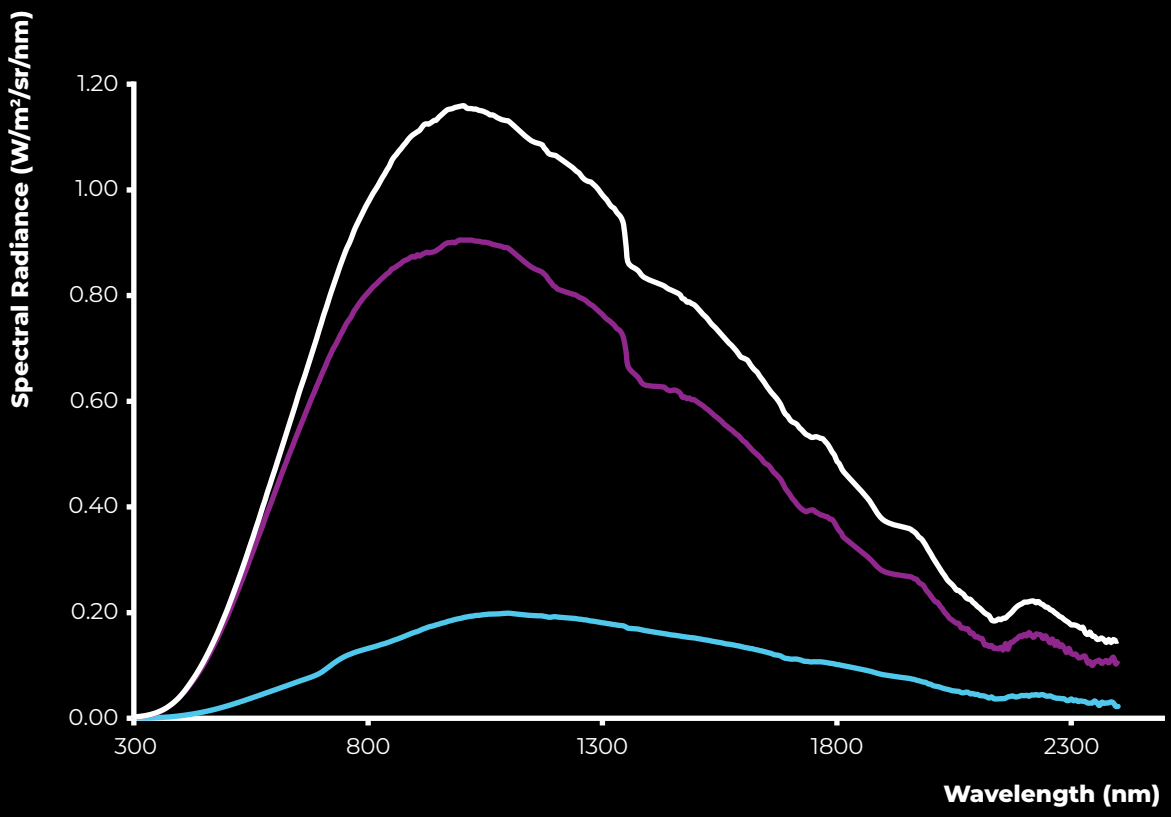
The ISV410-SWIR source meets the most demanding specifications of SWIR sensor and SWIR camera testing applications. It features a cooled InGaAs detector ensuring a **highly stable radiance output even above 1.9 µm** and includes a Primary Standard traceable certificate of radiance over a customer defined wavelength range in SWIR. The ISV410-SWIR source is also available in double detector configuration Silicon + InGaAs for higher accuracy radiation over the widest spectrum.

SPECTRAL RADIANCE CURVE

ISV210-F
3 000 cd/m²

ISV410
24 000 cd/m²

ISV410 SWIR
120W/m²/sr [1.9 - 2.4 µm]



OPTIONS

- Automated shutter for immediate ON/OFF radiation
- Target or filter holder at output port
- Set of Neutral Density filters
- Low or high contrast USAF 1951 targets for resolution and MRC testing
- Targets for LSF/MTF, distortion, FOV tests

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