

ISV410-LL LOW LIGHT INTEGRATING SPHERE MODEL ISV410-LL

System Use and Description

The **ISV410-LL** is a reliable easy to use Vis-NIR Source specifically designed for test and calibration of low light level sensors systems which respond in the visible and NIR light spectrum such as Night Vision Systems, image intensifier cameras, radiometers, remote sensing systems and vision enhancement systems.

The **ISV410-LL** source incorporates a dual sphere 6" and 12" diameter integrating spheres with a 4" diameter exit port. The Teflon interior sphere coatings provide uniform and lambertian luminance.



Illumination is provided by a quartz tungsten halogen lamp. The variable output lamp uses a closed loop control sensor and output attenuator to provide unprecedented ease of use and stability. The lamp is calibrated to a NIST traceable color temperature of 2856 \pm 25 K. True color temperature is achieved at low levels without the use of neutral density filters.

The **ISV410-LL** provides the uniform stimuli required for visible and NIR testing. When used with a Target Wheel and Collimator. Tests include Minimum Resolvable Contrast, Uniformity and MTF utilizing variable contrast USAF1951, open area and knife-edge targets. EOI offers a complete line of testing software to automate these and other test procedures.

Control

The **ISV410-LL** utilizes closed loop control of the detector/attenuator system to precisely set and maintain the desired output level. A silicon detector continuously monitors the output of the lamps and provides feedback to the attenuator, providing very stable and repeatable performance. An optional InGaAs detector is available. Control electronics and lamp power supplies are built into a single 5.25" high, 19" rack mount unit. Operation of the system is from the front panel keypad or via the built in Ethernet and RS-232 computer interfaces.



EOI Model ISV410-LL

- ◆ **Vis NIR Source**
- ◆ **True Color Temperature without N.D. Filters**
- ◆ **Designed for Night Vision Images**
- ◆ **Stable, Uniform**
- ◆ **Calibrated, Turnkey Source**



Specifications

Model	ISV410-LL
Sphere Diameter	6" (152.4) and 12" (304.8)
Output Port Diameter	4" (101.6) –optional 2" (50.8)
Luminance Range	10 ⁻¹¹ to 10 ⁻⁵ W/ cm ² -sr continuous adjst. 10 ⁻⁴ to 10 ² cd/m ² steps to 10 ⁻³ W/ cm ² -sr
Color Temperature	2856K (other color temps are optional)
Luminance Uniformity	>98%
Stability	± .2% or ± 3.0x10 ⁻¹¹ W/cm ² –sr whichever is greater
Set Point Resolution	1x10 ⁻¹¹ W/cm ² –sr
Display Resolution	1x10 ⁻¹² W/cm ² –sr
Sphere Coating Standard	PTFE
Detector	Silicon, InGaAs optional
Warm Up	<5 min. per lamp
Step Change	<60 sec within the continuous range
Lamp Life	Up to 1000 Hours
Controller Size	5.25 (133) H x 19 (483) W x 18 (457) D, Rack Mount
Controller Weight	19 lbs (9kg)
Computer Interface	Ethernet, RS-232, IEEE-488 (optional)
Power Requirements	100-240VAC, 50/60Hz

NOTE: Spectral output for ISV Series is 350nm to 2500nm