



OPAL-IR testing thermal camera

OPAL

MAINTENANCE TEST BENCH FOR MILITARY EQUIPMENT

A VERSATILE AND PORTABLE TEST BENCH

OPAL is a **multispectral portable bench** dedicated to the **test** and the **maintenance** of **military EO devices**. It has been designed to be robust and very easy to use, be it in a lab or on the field. OPAL is based on a compact collimator for **field application** and includes infrared and visible reference sources such as a blackbody and an integrating sphere, as well as specific targets and filters.

The **modular and versatile** configuration of OPAL, associated with dedicated exhaustive test software and ruggedized PC, make it compatible with the main light EO devices on the market. It enables the testing of:

- Thermal & SWIR imagers (1 - 2.5 μm / 3 - 5 μm / 8 - 14 μm)
- Night vision and day goggles
- Laser rangefinders and illuminators
- Multispectral portable devices
- Weapon sights and clip-on equipped with Thermal, Intensifier Tubes and LRF modules



AVAILABLE TESTS

- Test for IR Devices
- Test for Night Vision Devices (NVD) / Visible Devices
- Test for Multispectral Devices (IR/ Visible/ NVD and lasers)

	OPAL-MS	OPAL-IR	OPAL-NV	OPAL-MS Premium
Resolution / MRTD	●	●		●
DRI (Detection, Recognition and Identification Ranges)		●		●
NETD *		●		●
SiTF*		●		●
NUC*		●		●
Noise Tests (Temporal/ Fixed Pattern/ 3D)*		●		●
Detection and correction of Bad Pixels*		●		●
Spatial Resolution (USAF Target)	●		●	●
MRC (USAF Targets with contrast)			●	●
Spot defect detection (automatic)			●	●
Gain			●	●
Collimation test (parallelism of bi-tubes NVG)			●	●
MTF (IR*/ NV/ Visible)		●	●	●
Manual Boresighting (IR/ NV/ Visible/ Laser emitter axis)	●			●
Automatic Boresighting (IR*/ NV/ Visible/ Laser emitter axis)				●

*Require an available video output channel on the Unit Under Test. Compatible communication links are given below.
Other available tests (quoted on demand): Distortion (1D or 2D) & FoV measurement / Zero and focus of eyepiece

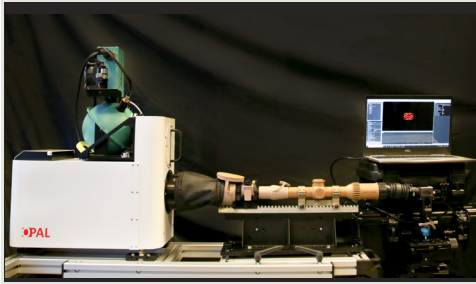


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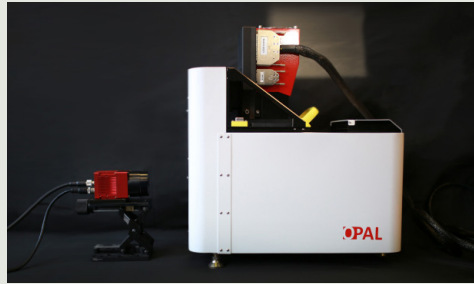
TEST BENCH

FOR MILITARY EO EQUIPMENT

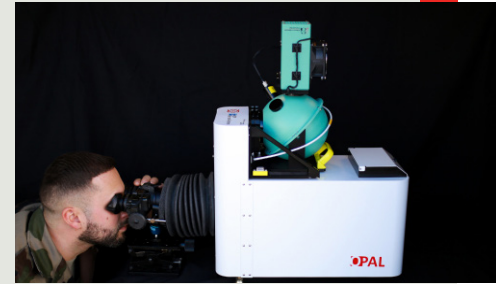
ref. OPAL en-ajl



OPAL-NV testing night vision weapon sight



OPAL-MS configurations
With IR camera & NV goggles



TECHNICAL SPECIFICATIONS

Aperture	100 mm
Focal length	635 mm
Field of view	2.2°
Spectral range	0.4 to 14µm
Spatial resolution of the collimator	50 cy/mrad (diffraction limited)
Maximum Spatial Frequency for MRTD	5 cy/mrad
Operating temperature range	+15°C to +35°C
Packaging for transportation	Compliant with AECTP 400 NATO publication (recorded in STANAG 4370)
Weight with packaging	(OPAL-MS Premium): 100kg in 4 cases (each case is easily carried by two people)
Power consumption	800 W
Power supply	100-240 VAC, 50/60 Hz
Computer interfaces	Ethernet, RS-232, IEEE-488
Compatible video communication links for IR devices	Analog: CCIR, RS170, PAL, NTSC Digital: Gigabit Ethernet, CameraLink, LVDS, 3G SDI, HD SDI, SD SDI, DVI, HDMI
Irradiance range	From 0.2 mlx (Night Level 5 - Overcast starlight) to 4 lux (Day Light) Lower irradiance available on demand
Target and filter	Target & filter manually interchangeable (one position for each) Storage for 6 targets or filters

Above information is subject to change without notice

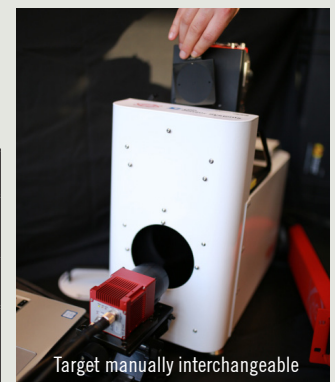
Sources:

Blackbody: DCN1000H2
Included with OPAL-IR, OPAL-MS and Premium

Integrating Sphere: ISV210
Included with OPAL-NV, OPAL-MS and Premium

Blackbody Temperature range (at 20°C ambient temp.)	Absolute: -15°C to +150°C Differential: -35°C to +130°C
Stability	0.5mK
Thermal uniformity	0.01°C at ambient ± 5°C and 0.1°C at 50°C
Temperature measurement accuracy	Differential mode : ± 0.01°C Absolute mode : ± 0.03°C

Luminance range	15 cd/m ² to 3,500 cd/m ²
Luminance stability	< 0.1% or < 2 cd/m ² whichever is greater
Luminance uniformity	> 98%
Color temperature	2856K ± 25K (other on demand)



Target manually interchangeable



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