HGH Infrared Systems

COPI

→ Test of a Laser Rangefinder

COPI

UNIVERSAL OPTRONIC TEST BENCH

FOR VISIBLE, LIGHT INTENSIFICATION INFRARED & LASER DEVICES

→ COPI UNIVERSAL TEST BENCH

ALL-IN-ONE TEST SOLUTION

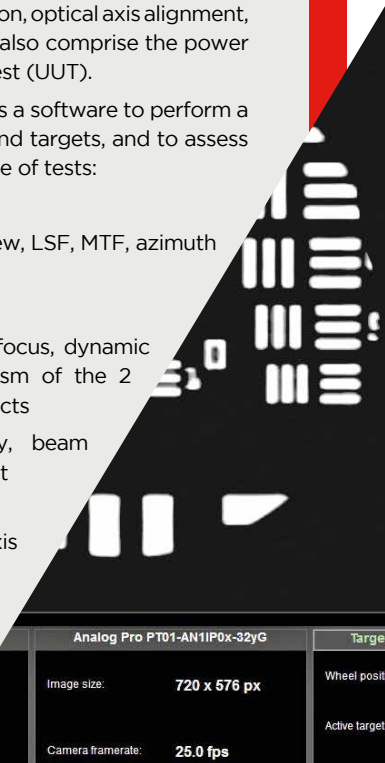
COPI is a universal test bench able to fully characterize the performance of any optoelectronics system, operating from visible wavelengths to far-infrared. It replaces the multitude of specific testing tools related to each equipment by a single and polyvalent optronic test system.
The modular and versatile mechanical configuration of the universal multispectral collimator, associated with a dedicated exhaustive test software, enable very fast configuration setting for testing all existing or in-development optoelectronics systems :

- TV cameras
- Night and day vision goggles
- Thermal imagers 3-5/8-12 µm
- Laser rangefinders and illuminators (1.06 - 1.54 - 10.6 µm)
- Complete sighting systems

VERSATILE AND COMPREHENSIVE TEST BENCH

COPI universal test bench consists of 3 parts:

- The optical bench, with an off-axis parabolic mirror, collimates radiation from a set of sources selected via a motorized rotating mirror. it includes motorizations, to select the required focal length and to adjust the optical axis in azimuth, elevation and height. Depending on tests to be performed, it can also include acquisition sensors (CCD camera, radiance meter, joule meter, laser beam analysers, high-speed and high-sensitivity detectors)
- Electronic cabinets control sources and targets selection, optical axis alignment, acquisition sensors power supplies and signals. they also comprise the power supplies and the electronic racks for the unit under test (UUT).
- The computer cabinet, with a ruggedized PC, includes a software to perform a bench autotest, to control the selection of sources and targets, and to assess the performance of the UUT, with an exhaustive range of tests:
  - ➤ Noise tests: temporal noise, SiTF, NETD
  - ➤ Spatial tests: optical axis alignment, field of view, LSF, MTF, azimuth and elevation ranges
  - ➤ Range tests: MRTD, DRI ranges, MDTD, TOD
  - ➤ Visible tests: Gain, spatial resolution, infinity focus, dynamic range, zero and focus of eyepiece, parallelism of the 2 optical axes of goggles, detection of spot defects
  - ➤ Laser and rangefinder tests: laser energy, beam divergence, accuracy of distance measurement
  - ➤ Alignment test and measurement:
    - → between IR or visible axis and mechanical axis
    - → between IR axis and visible axis
    - → between transmitter and sight axis
    - → between receiver and visible axis



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UNIVERSAL **OPTRONIC TEST BENCH**

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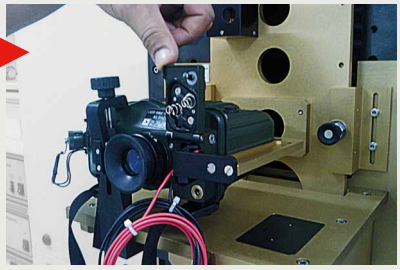

→ Test of an IR Monocular

→ Test of a Thermal Scope

TECHNICAL DATA

COLLIMATOR	
Optical aperture	150 mm diameter
Focal length	1524 mm
Spatial resolution	20 µrad for 50 mm aperture
Focusing range	60 m to ∞, motorized (optional : shorter distance)
Beam orientation	-30° to +60° elevation motorized, ±1.5° azimuth motorized for a 100 mm aperture
Orientation accuracy	0.002° relative 0.04°absolute
Motorized vertical translation	500 mm range
Spectral bandwidth	0.5 to 14 µm
Sources selection	Motorized

COMPUTER CABINET	
Control computer	Industrial type
Video display	LCD monitor
Video acquisition formats	CCIR, RS170, PAL, NTSC, Camera Link, LVDS, Gigabit Ethernet
Power supply	Uninterruptible power supply

VISIBLE AND NEAR INFRARED SOURCE: VIS1000	
Spectral bandwidth	0.5 to 1.1 µm
Radiance	0.00032 to 32 Cd m^{-2}
Colour temperature	2856K and / or 3000K
Targets	Motorized selection for alignment, focus, resolution, etc.
Autocollimator	CCD camera with 0.1 mrad resolution

DIFFERENTIAL BLACKBODY : DCN1000H2	
Spectral bandwidth	3 to 14 µm
Temperature difference	Adjustable from -35 °C to +130 °C
Stability	± 0.002 °C
Emissivity	> 0.98 ± 0.02
6 position motorized target wheel	for MRTD, NETD, MTF, etc.

LARGE AREA SOURCE	
Spectral bandwidth	Visible
Size	160 mm diameter
Irradiance	1.75 kLux

LASER & RANGEFINDER TEST RESSOURCES	
Wavelengths	1.06 - 1.55 µm
Laser beam analyzer	
Joulemeter	
Flight distance simulation	through fiber optic or time delay generator

ACCESSORIES
Periscope for test of multisensor systems
Specific support for heavy UUT

Above information is subject to changes without notice

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