

CASE STUDY

ENHANCING MERIO'S MULTI-AXIS SYSTEM TESTING WITH HGH MULTI-FUNCTIONAL OPTICAL PROJECTOR: IRCOL COLLIMATOR



> Background

Merio is a French manufacturer designing, manufacturing, and marketing gyro-stabilized camera systems commonly known as “payloads” or “gimbals” for the aerial, land, and marine sectors since 2014.

Today, Merio is a leading French/European player in the defense and drone sector.

Naturally, constant search for innovation and quality has led Merio to evolve their working methods and production tools.



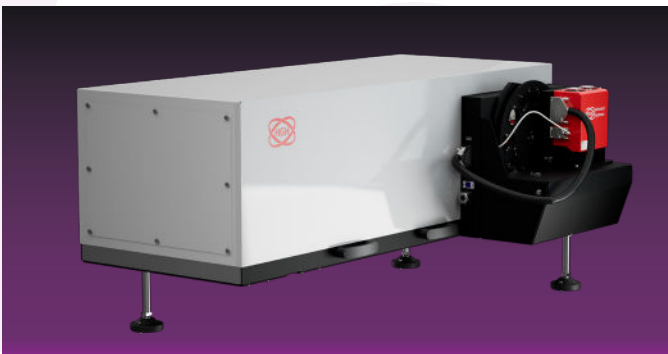
Credits : © Merio

> Challenges

Offering “**multi-sensor**” systems that include cameras for both the visible and infrared - NIR, IR (LWIR, MWIR), rangefinders (LRF), and lasers of various classes, - Merio needed a versatile testing tool without compromising on performance.

An **HGH IRCOL 150/1000** collimator with its targets and blackbody was initially used to calibrate infrared detectors (shutterless calibrations), focus lenses, and collimation i.e. align the lines of sight between the different sensors incorporated into Merio's gimbals.

Due to an evolution of the product range Merio now required a collimator with a larger aperture. Having been completely satisfied with the HGH IRCOL collimator, Merio naturally decided to acquire an IRCOL 300/1500 collimator, which now covers the needs of the entire product range.



HGH IRCOL 300/1500 collimator

> Solution

The IRCOL Test bench solution provided by HGH is a multi-functional optical projector designed for the characterization and performance validation of electro-optical systems. Ideal for testing visible to SWIR cameras, night vision devices, thermal imagers, laser rangefinders, and multi-axis sighting devices, the IRCOL provides

- A wide clear aperture for superior optical performance
- Wide range of Focal Lengths and Apertures compatible with all standard test requirements
- High-Quality Optics ensuring accurate and reliable test results
- Best-in-class and guaranteed wavefront flatness and high transmittance across wide spectral range (visible to IR)

As a result, Merio benefits from a reliable and standardized optical validation process that directly impacts the quality of delivered systems. By ensuring precise camera focusing and accurate sensor alignment, the collimator guarantees optimal performance from the very first use in the field.

By integrating this tool at both design and production levels, Merio reinforces its commitment to delivering high-performance, ready-to-operate solutions that meet the highest industry standards.

> Conclusion

The HGH IRCOL test bench has become essential for Merio and is used both for experimental purposes in design and by production to ensure that cameras are focused and sensors aligned.

The performance and reliability of Merio's payloads are considered a critical priority for all teams involved in their design and production. In this context, the selection of high-quality optical equipment is essential to guarantee precision, repeatability, and long-term robustness.

"It was therefore essential for us to find a collimator that was robust, ergonomic, and of perfect optical quality in order to meet our needs and ensure the consistent quality of our products: mission accomplished!"

Pierre, Support Service at Merio



Credits : © Merio



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