

LUMINA

Image Intensifiers for Scientific Detectors

LUMINA is a fully integrated scientific image intensifier that mounts in front of the camera you already use (CCD or scientific CMOS). Add single-photon sensitivity, nanosecond-scale gating, and cooled dark-count suppression, without replacing your camera or optical path.

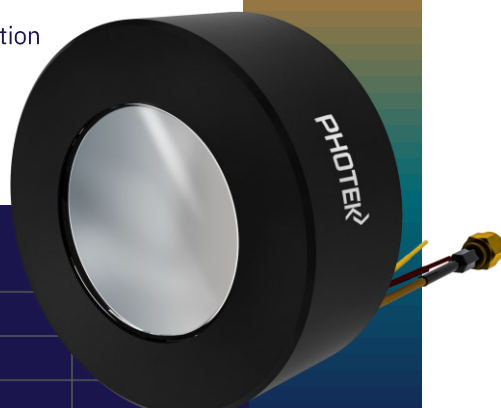
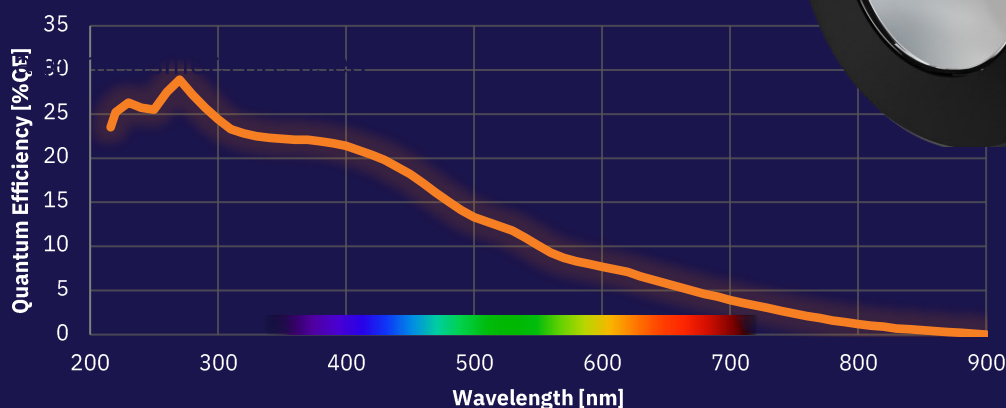


Applications

- **Quantum Imaging:** Add single-photon sensitivity for coincidence counting and ion/atom trap imaging, without buying a new camera. Best suited to UV-to-visible sources.
- **Plasma & Combustion Diagnostics:** Nanosecond gating isolates a laser pulse or transient event from continuous background emission, with relay optics that adapt as your rig changes.
- **Voltage Imaging & Neuroscience:** Detect GEVI signals too faint for standard sCMOS cameras, on your existing widefield setup. No new microscope required.
- **Bioluminescence & Preclinical Imaging:** Cooling suppresses dark counts for the long exposures that bioluminescence and Cherenkov imaging demand.
- **FLIM & TCSP:** Add wide-field, nanosecond-gated acquisition to fluorescence lifetime measurements, complementing point-scanning TCSPC for dynamic samples.

PHOTEK
ENVISAGE THE FUTURE

S20B Average Sensitivity



Specifications

Technical Specifications	
MCP Configuration	25 mm Dual-Stage MCP (Chevron)
Photocathode	Photek S20B Broadband
Coupling	C-Mount in, C or M-Mount out (adapters available)
Illumination Area	1:1 version: 25 mm circle 1:2 version: 40 mm circle
Relay Optics	Infinity-corrected relay lens, F0.9,
Photon Gain	1:4.000.000 (photon to photon)
Gating Option	200 nanoseconds or 10 nanoseconds
Cooling Option	Cathode Cooling, reducing dark counts by factor 500
Electronics	Fully integrated power supplgating and gain control
Dimensions / Weight	

LUMINA is built around a Photek 25 mm dual-stage chevron MCP with ALD coating, paired with a broadband S20B photocathode optimized for UV-to-visible detection. Incoming photons are converted at the photocathode, amplified through the microchannel plate stack by up to 4,000,000×, and converted back to light at the phosphor screen. All inside a self-contained housing with integrated high-voltage supply and gain control via USB-C, so no external power supplies or gate drivers are needed.

Two options adapt the base unit to demanding applications:

- ❖ Cooling suppresses dark counts at the photocathode, reducing background by up to 500×, the main limiting factor in long, low-light integrations such as coincidence counting, bioluminescence, and extended-exposure FLIM.
- ❖ Fast gating, down to 10 ns, turns the photocathode on and off electronically, rejecting continuous background and enabling time-domain acquisition synchronized to a pulsed source — useful for plasma and combustion diagnostics as well as time-gated fluorescence work.

Relay optics couple the intensifier output to your camera sensor. LUMINA ships with a 1:1 (25 mm) relay as standard, with a 1:2 (40 mm) option available for larger-format sensors up to 1 inch. Both are customer-exchangeable, so the same unit can be re-optioned as your camera or experiment changes.

Lumina Starting Price: 58,430.-- €

Includes 1:1 relay lens. Cooling and fast gating available as factory-fitted upgrades. Typical lead time: under 4 weeks. Prices exclude customs duties and taxes. Shipments outside the EU may be subject to export control approval. Contact us for a detailed configuration overview and quotation.



Including Gain Control and Power Supply



High-end relay optics (f0.95)



Robust Pelicase with all accessories provided