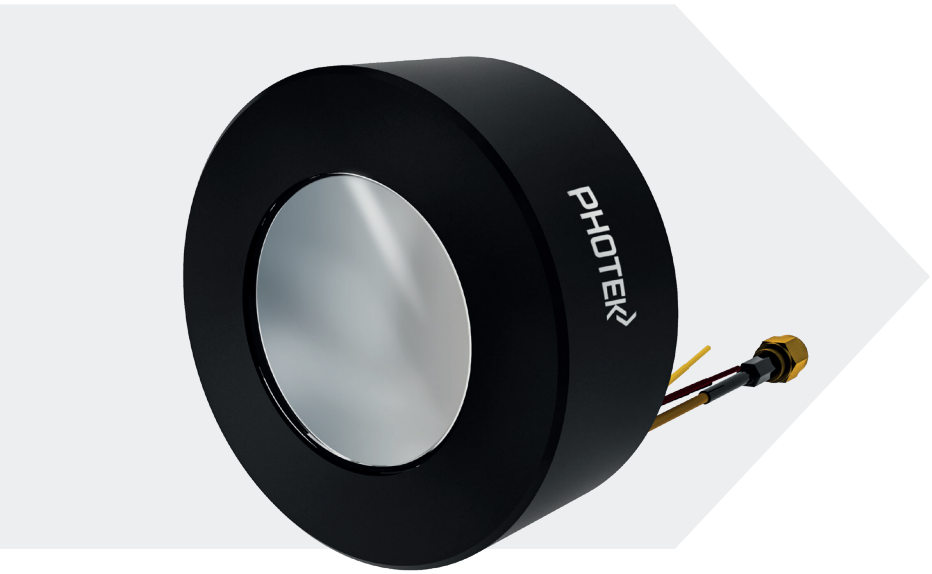
PHOTEK
ENVISAGE THE FUTURE

Image Intensifier

Fast gating, high gain light amplification



Features

- **Range of active diameter sizes** 18, 25, 40, 75 and 150 mm - the world's largest image intensifier
- **Wide choice of spectral response** across X-ray, EUV, UV, Solar Blind, Visible and NIR
- **Fast gating** allows for optical shuttering with gating to 2 ns
- **Capability/Adaptability** with compact size and ideal for use in high magnetic field environments
- **Customised** for specific applications and effortless integration

Photek's range of Image Intensifiers provide the highest performance in terms of resolution, speed of response and in-service reliability to deliver photonic measurements for world-class scientific research.

Photek Image Intensifiers are available in a wide range of sizes (18, 25, 40, 75 and 150 mm) and can be supplied with integral high voltage power supplies and ultra-high speed gate units customised to meet the requirements of specific applications.

A range of photocathodes and input window materials enables a wide choice of spectral responses to suit many applications.

The standard fibre optic output ensures a defined output focal place and allows efficient coupling to a variety of image sensors. A range of MCP configurations satisfies all gain requirements.

Applications

- Bioluminescence
- Corona imaging
- Fluorescence lifetime imaging
- High speed imaging
- Low light level imaging
- Missile warning systems
- Photon counting
- Combustion imaging
- Space science
- Spectroscopy
- Plasma physics
- Time resolved imaging

DATASHEET
Image Intensifier

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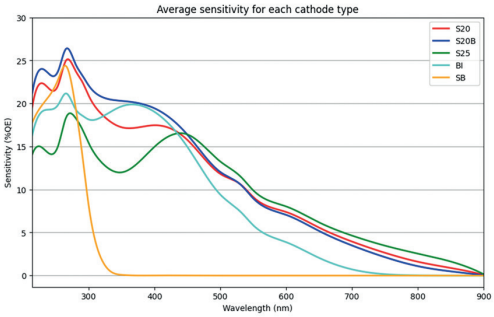
Standard Product Range

MCP	Size	Input	Photocathode	Phosphor	Output
1	18	**F** (Fibre)	**SB** (Solar Blind)	P43	**IFO** (Fibre Optic)
2	25	**Q** (Fused Silica)	**BI** (Bialkali)	P46	**G** (Glass)
3	40	**G** (Glass)	**S20B**	P47	**ITA** (Fibre Taper)
	75	**M** (MgF_2)	**S20**		
	150	**S** (Sapphire)	**S25**		

Other Photocathodes available on request

Photocathode Response



Note: The underlay on the cathode can affect the QE.

Phosphor Options

Type	Peak Wavelength	Relative Efficiency	Decay Characteristic
P43	548 nm	1	1.2 ms/decade,true exponential
P46	530 nm	0.23	300 ns
P47	410 nm	0.27	80 ns

Gating Options: 25 mm (S20)

Min Gate Width (ns)	Transmission Loss (%)	Notes
500	0	Standard
50	~10%	200 nm - 900 nm
10	~30%	200 nm - 900 nm
< 1	~10%	350 nm - 900 nm
3	~40%	200 nm - 900 nm
< 3	19%	Fine mesh

Typical Performance

Photocathode	Spectral Range (nm)	Peak Wavelength (nm)	QE Quantum Efficiency (%)	Gγ Photon Gain (ph/ph)		EBI (typical max) ph/cm²s	EBI (typical max) lux
S20	175 - 800	400	21	1 MCP 2 MCP	1×10^4 2×10^6	2000	2×10^{-7}
S20B	175 - 800	260	30	1 MCP 2 MCP	2×10^4 4×10^6	5000	2×10^{-7}
Bialkali	175 - 700	350	21	1 MCP 2 MCP	1×10^4 3×10^6	50	2×10^{-7}
S25	175 - 900	450	16	1 MCP 2 MCP	1×10^4 2×10^6	20,000	2×10^{-6}
Solar Blind	175 - 340	270	24	1 MCP 2 MCP	2×10^4 3×10^6	5	n/a

All specifications quoted are typical for a 25 mm tube with a Fused Silica input window having no gating under-layer and P43 phosphor on a Fiber Optic output window.

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