

Reduce overall system costs



IMAC has created a more sophisticated lighting system by integrating controls using Ethernet. This not only increases the degree of flexibility of control, but also helps reduce total system costs through advanced image processing applications; high-mix, low-volume manufacturing; and labor-saving initiatives in system development and manufacturing.

The diagram illustrates the PoE Vision System architecture. At the top left, a laptop icon represents the PC. A dashed line connects the PC to the 'Control lighting from a PC' section. Below the PC is a 'PoE Hub' with eight ports. A dashed line connects the PoE Hub to the 'Power via PoE' section. To the right of the PoE Hub is a 'PoE Unit' (blue box). A dashed line connects the PoE Unit to the 'Strobe lighting' section. Above the PoE Unit is a 'Strobe signals' box. A dashed line connects the PoE Unit to the 'Ethernet cameras connected' section. Below the PoE Unit is a 'PLC' (Programmable Logic Controller) box. A dashed line connects the PLC to the 'Flexible control via Ethernet' section. The PoE Unit is connected to four Ethernet cameras (represented by icons with lenses). The PoE Unit is also connected to four strobe lighting units (represented by icons with colored bases: red, blue, yellow, and green). The PoE Unit is connected to the PoE Hub via a dashed line. The PoE Unit is connected to the PLC via a dashed line. The PoE Unit is connected to the Strobe signals box via a dashed line. The PoE Unit is connected to the Ethernet cameras via a dashed line. The PoE Unit is connected to the Strobe lighting units via a dashed line. The PoE Unit is connected to the PoE Hub via a dashed line. The PoE Unit is connected to the PLC via a dashed line. The PoE Unit is connected to the Strobe signals box via a dashed line. The PoE Unit is connected to the Ethernet cameras via a dashed line. The PoE Unit is connected to the Strobe lighting units via a dashed line.

Control lighting from a PC
Optimal light control conditions can be set easily while viewing images used for image processing.

Control lighting on 4 channels
Lighting on 4 channels can be switched and flash parameters can be controlled from a PLC. High-mix, low-volume production and inspections for multiple items can be controlled from a single station.

Power via PoE
The unit employs a PoE power supply system. Requires no wiring due to integrated communication and power supply. Ethernet allows vision systems to be installed far away from control panel.

Compact housing
Compact housing enables installation in a wider range of locations.

Flexible control via Ethernet
Lighting can be controlled from a variety of devices on the Ethernet. RS-232C and I/O are not required for lighting control. Control is possible from a variety of devices including PCs and displays with Ethernet connectivity as well as from PLCs, enabling flexible system design.

Strobe lighting
Strobe lighting produces brighter light than normal. Single unit can be used even on high-speed lines.

CE Compliant

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Communication System	TCP/IP protocol (100M/10Mbps)
Input	Power supply from PoE injector (PoE standard: IEEE 802.3af)
Output	Voltage: 12 to 36 V (Variable)
	*1 Capacity: Connected lighting/30W or below
	Current: 4 A or below (Peak strobe current)
	Duty cycle: 5% or below (With interlock protection circuit function)
	Pulse width: 1 ms or less (0 to 999 μs)
	Light control: 10 bit (1,024 levels)
Trigger Response Speed	Approximately 1 μs
Voltage Variation Response Speed	max. Approximately 70ms
Delay Time	0 to max. 5 ms (with variable function)
Internal Light	Frequency: 4 kHz / Width: 12.5 μs (fixed)

Communication System	TCP/IP protocol (100M/10Mbps)
Input	Power supply from PoE injector (PoE standard: IEEE 802.3af)
Output	Voltage: 12 V (fixed)
	*2 Capacity: Connected lighting/30W or below
	Current: 650 mA
	PWM approx. 80 kHz
Trigger Response Speed	Light control: 8 bit (256 levels)
	Approximately 1 μ s

*1 There are limits on light emission width and trigger frequency when using lighting with a total of 7.8 W or more on 4 Channels.

*2 Output voltage drops when using lighting with a total of 7.8 W or more on 4 channels.