Vision Light Tech
creating optical solutions

LED Lighting Controller with Ethernet Connectivity

OPPD-30 Series

Easy Ethernet connectivity

- Automatic brightness management
- "FALUX sensing" for monitoring brightness and temperature monitoring and for controlling feedback

CE

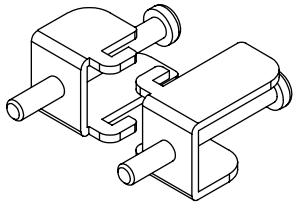
Specifications

Model	PWM Frequency / Intensity Steps	Illumination Output	Capacity	Input Voltage	Weight [g]
OPPD-30E	100 kHz, 1,000 steps	2ch	Max. 30 W (total for 2 channels)	24 VDC ±10%	150

Options (sold separately)

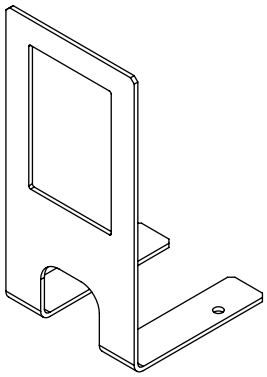
Panel mounting bracket

Model	Weight [g]
BKT-OP-01	30



Panel stand

Model	Weight [g]
PNL-OPPD	50



Simplify lighting control with an Ethernet-connectable compact controller

OPPD-30E

Size: W48 × H72 × D72 mm
Communication method: Ethernet
Capacity: 30 W
Illumination output: 2 ch

OPPD-30E is an LED lighting controller with Ethernet connectivity that reduces the effort required for lighting control. Due to the simple configuration of light intensity and ON/OFF control for lighting from a PC or a PLC, the OPPD-30E can be used in a variety of engineering environments in the manufacturing field.
The OPPD-30E also makes it easy to catch decreases in lighting brightness, allowing for predictive lighting maintenance through IoT (Internet of Things) setups.

Features

■ **Simple light intensity and ON/OFF control through Ethernet communication Connecting is simple. Just plug in a LAN cable!**

With support for DHCP, the OPPD-30E automatically obtains IP addresses and other information necessary for connection.
Manual configuration of network settings required with conventional models is unnecessary, and communication can be easily established simply by connecting a LAN cable within a DHCP server network environment.

■ High-speed communication

With the OPPD-30E, light intensity values can be rewritten for both channels in about 6 ms.

OPPD-30E : Approx. 6 ms / 2 ch
Conventional Optex FA models : Approx. 11 ms / 2 ch
Other manufacturer products or equivalent : Approx. 18 ms / 1 ch

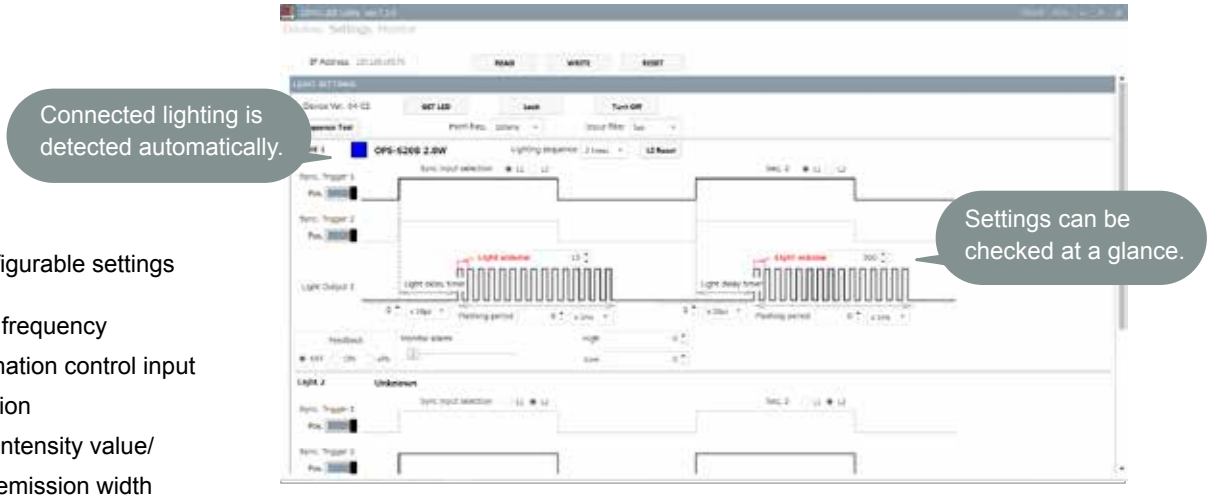
■ Simple PC software-based setup

Dedicated PC software is available for the OPPD-30E. This software can be used to configure light intensity, ON/OFF control and frequency, among other aspects.
Access the Optex FA homepage to download the software for free.

*LAN cable required separately.

● Intuitively operable interface

The software interface has been developed so that light intensity and ON/OFF control can be seen at a glance.
Settings can be easily configured through pull-down menus or through direct input.



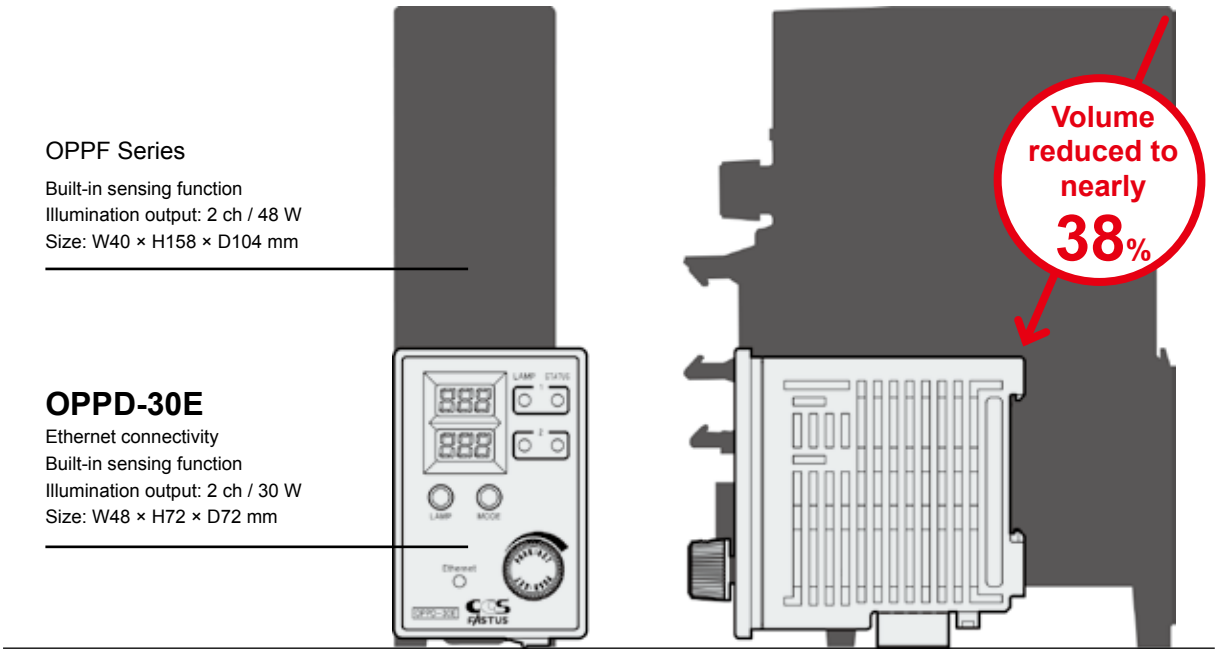
*Screen content and layout subject to change.

● Configurable settings

- PWM frequency
- Illumination control input selection
- Light intensity value/ Light emission width
- Lighting delay time
- Feedback
- Monitor brightness alarm, etc.

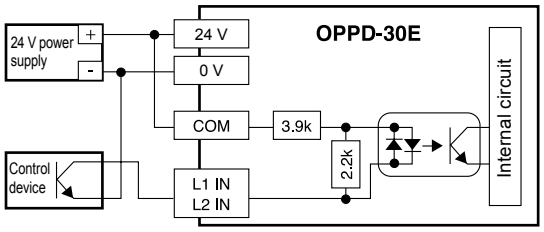
■ Compact size

Thanks to high-density mounting technology and an optimuml heat dissipation design, the OPPD-30E boasts a size just 38% that of OPPF Series products.

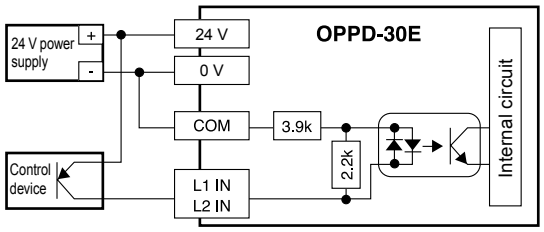


Connection to external device (illumination control)

■ With NPN open collector output device



■ With PNP open collector output device



*When connecting voltage output control equipment, apply 12 to 30 VDC between IN and COM. The photocoupler input is bipolar.

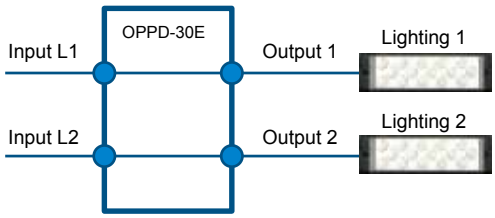
■ New lighting control features

Illumination control input allocation function

An industry first!

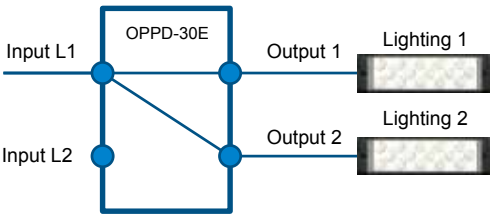
With conventional models, one lighting output is allocated per controller input.
With the OPPD-30E, users can switch between one or two lighting units for every input at the controller.
In addition to reducing the number of wiring, the OPPD-30E enables flexible input changes
even after wiring has been completed.

Conventional setup

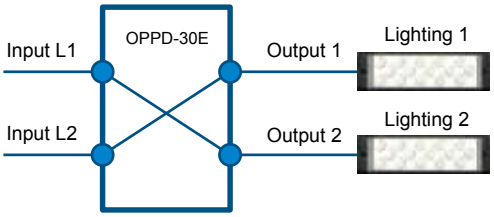


Allocation examples

Ex. 1: Simultaneous output to 2 channels for 1 input



Ex. 2: Switchable output



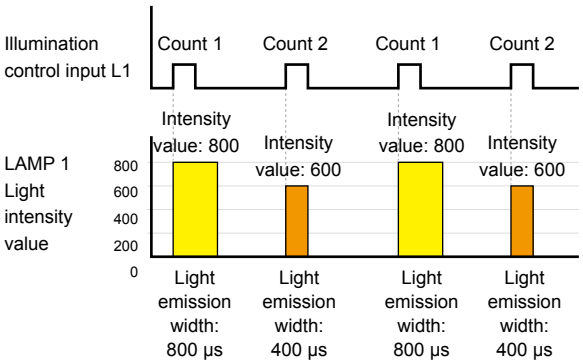
Lighting control sequence

An industry first!

With the OPPD-30E, up to four illumination setting patterns including light intensity values can be configured.
Each pattern can be configured in an illumination control sequence with ordered switching for each illumination control input.
(Lighting delay time settings are shared.)
With intensity values and illumination widths set in advance, automatic switching is only performed for illumination control input, allowing the time required for changing settings to be kept to a minimum.
With conventional models, control is not possible without using a PLC and setting up complex ladders.
With the OPPD-30E, such control can be achieved with no other equipment required.

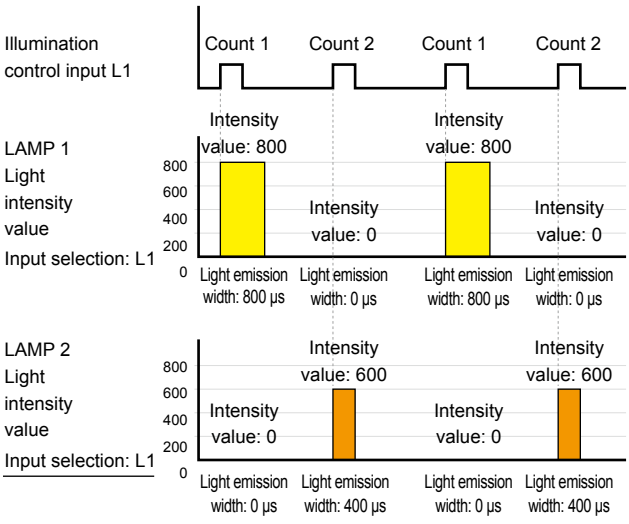
Ex. 1: Light intensity value and emission width switching

Lighting control sequence: 2-count setting



Ex. 2: Lighting switching

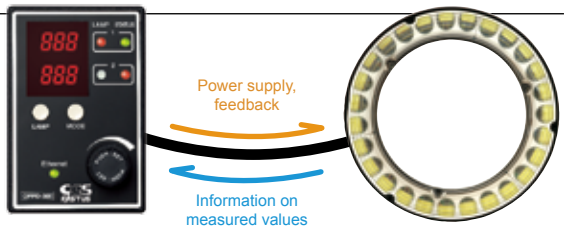
Lighting control sequence: 2-count setting



■ Automatic brightness management and predictive lighting maintenance

Brightness/temperature monitoring and feedback control

Connecting the OPPD-30E to lighting equipped with "FALUX sensing" enables monitoring of the lighting brightness and temperature.
Based on these monitored values, light intensity feedback control can be performed, allowing brightness to be kept constant.



● Monitoring function

The lighting's built-in photodiodes are used to monitor the brightness of the lighting.

Alarm output: Setting a threshold in advance makes it possible to output an alarm when brightness decreases to a predetermined level.

Instrumental error adjustment: Absolute brightness monitoring makes it possible to adjust for lighting instrumental errors.

● Light intensity feedback control

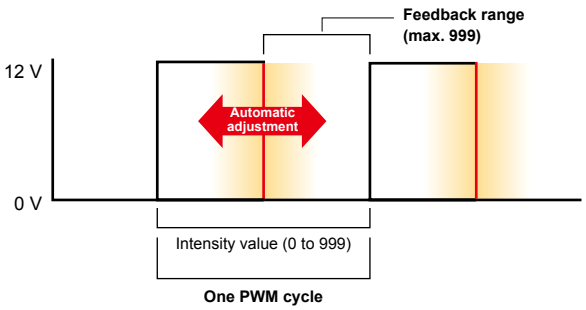
Automatic brightness management

With LED lighting, decreases in brightness can occur due to various factors including drops in voltage caused by extension cables and LED deterioration.
The factory default brightness is maintained through automatically corrected intensity values to prevent drops in brightness.
Corrections can be verified as "Corrected intensity value."
The feedback range is determined by the set intensity value and the maximum intensity value (999).
A signal is output as a feedback error when the maximum intensity value is reached.

[Feedback mechanism]

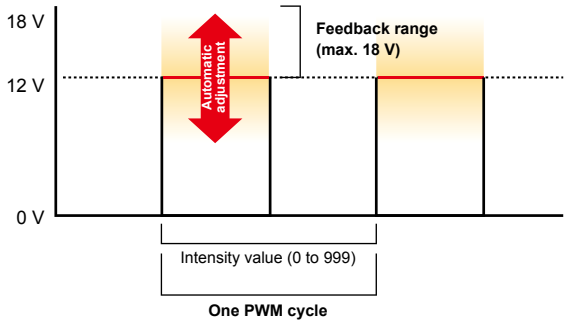
OPPD-30E

The PWM ON time is corrected according to changes in brightness, allowing brightness to be automatically adjusted.



<Reference> OPPF Series

Output voltage is corrected according to changes in brightness, allowing brightness to be automatically adjusted.



Measured brightness/temperature logging function

Measured values such as brightness and temperature can be collected and displayed in a graph using the dedicated software (PC).
Data can be output as a .csv file. Displaying monitored values allows users to recognize LED degradation.
This feature is useful as a function for predictive lighting maintenance.

● Recordable items

- Light intensity value • Monitored value
- Corrected intensity value
- Lighting temperature
- Controller temperature

Monitor screen (dedicated software)

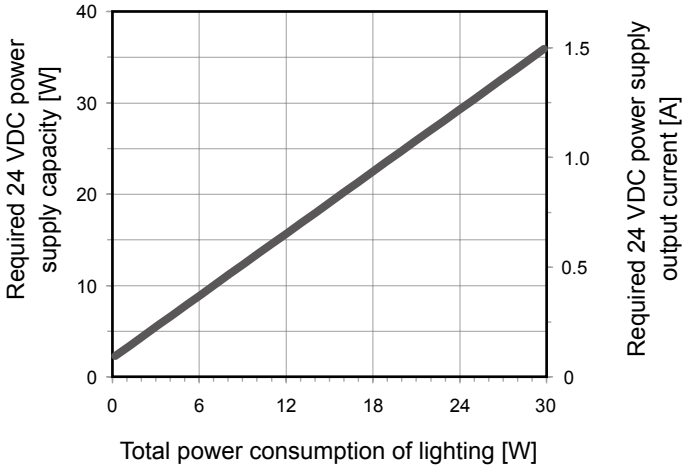
Specifications

Model	OPPD-30E
Power supply voltage	24 VDC ±10%
Current consumption	Max. 1.3 A
Illumination output	2 ch
Connectable lighting	Max. 30 W (total for 2 channels)
Illumination output voltage	PWM mode: 12 VDC
Illumination output current	Max. 2.5 A (total for 2 channels)
Light intensity control	PWM itensity control, Frequency: 50/100/99/98/97 kHz
Monitoring	Lighting brightness monitor / Lighting internal temperature monitor, Monitor brightness alarm upper/lower limit value setting
Feedback	PWM correction method
Input	External illumination control × 2 ON voltage: 12 V or more, OFF voltage: 2 V or less, Max. input voltage: 30 V Input response time (actual value) With 24 V input (OFF→ON: 5 µs), (ON→OFF: 50 µs) With 12 V input (OFF→ON: 8 µs), (ON→OFF: 45 µs) Input resistance: 3.9 kΩ, insulated
Communication interface	Ethernet 10BASE-T/100BASE-TX, AutoMDI-X
Communication protocol	UDP/IP, DHCP
Communication response speed	From command reception to response completion: 6 ms (typ.)
Protective functions	Overcurrent, controller internal temperature monitoring (PWM output cut to 1/4 at 105°C)
Regulations	Conforms to EMC (2014/30/EU) / RoHS (2011/65/EU, directive 32)
Standards	Conforms to EN 61326-1: 2013, EN 55011: 2009 / A1: 2010 Group 1, Class A
Protection rating	IP30 (IEC 60529: 1989 / A1: 1999 + A2: 2013)
Ambient temperature/humidity	0 to 40°C / 35 to 85% RH (no condensation)
Storage temperature/humidity	-20 to 70°C / 35 to 95% RH (no condensation)
Vibration resistance	10 to 55 Hz; amplitude: 1.5 mm; 2 hours in each of the X, Y, and Z directions
Shock resistance	Approximately 10 G, 3 times in each of the X, Y, and Z directions
Insulation resistance	500 VDC, 10 MΩ or more
Material	Housing: Polycarbonate and aluminum
Weight	150 g
Accessories	Instruction manual, Terminal block × 1
Options	Panel mounting bracket, Panel stand

■ Required 24 VDC power supply capacity to handle power consumption of lighting

Based on the total power consumption of the LED lighting to be connected, select a 24 VDC power source that offers more than the required capacity.

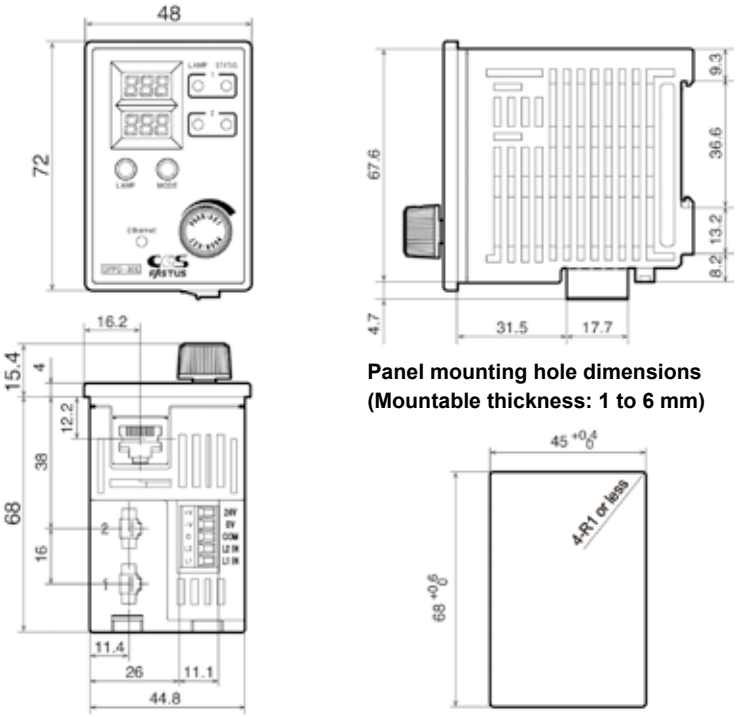
Note:
When using in conjunction with other equipment, the characteristics of the other equipment will affect the power supply, so be sure to choose a power supply that has a sufficient margin (about twice as much) as that shown in the graph.



Dimensions

(unit: mm)

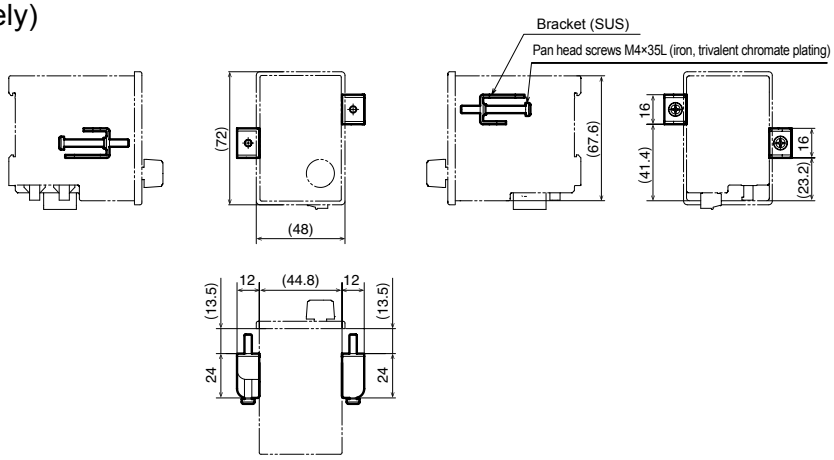
■ Main unit



Panel mounting hole dimensions
(Mountable thickness: 1 to 6 mm)

■ Options (sold separately)

Panel mounting bracket
BKT-OP-01



Panel stand
PNL-OPPD