icore

Innovation to the core

2025

Products Selection Guide

Company Introduction

Innovation to the Core

All employees of iCore will always work with more determination than ever with gratitude to continue to develop products and technologies and retain customer trust for a long period of time.

Mission

We continue to develop products that meet customer needs through innovative and core technologies

Vision

We will grow together with customers. We will be a happy company for all customers and employees.

Core values

We exist because of our customers. We will never forget to appreciate our customers.

Members of iCore intend to develop products that anyone can use with confidence and unchanging trust.

We will create a workplace in which people can work with joy and manage a happy life.

Product

Strobe Controller

iPulse

01

Auto Focus Module

iFocus

02

High Power Light

iLight

03

Repeater / Splitter

iPlus

04

01. Strobe Controller

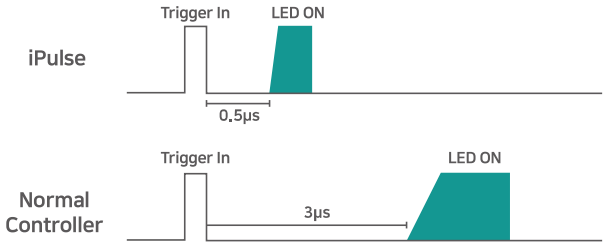
iPulse

iPulse is a high-power LED controller developed with iCore's unique know-how specifically for machine vision applications. The product can control high-speed current with high efficiency.

iCore has developed the world's first high-efficiency power circuit that generates ultra-precise current pulses of less than 0.5μs even under the condition of 200A or higher. It enables stable and precise strobe lighting with high-power LEDs.

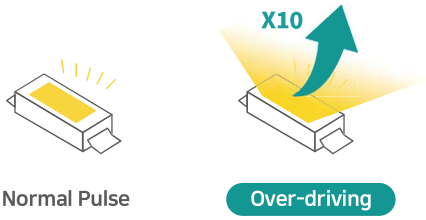
Fast Response

iPulse is an ultra-precise lighting controller featuring fast current response and high-precision control performance. It reacts within 0.5μs upon external trigger input, which is approximately six times faster than other brands. Its exceptional repeatability from trigger input to light output ensures faster and more precise lighting control during equipment operation.



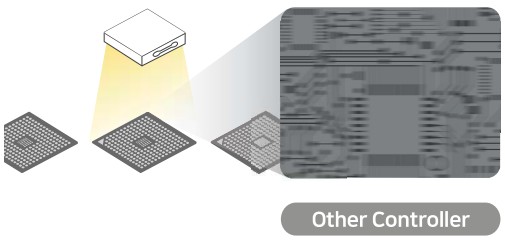
Over-Driving

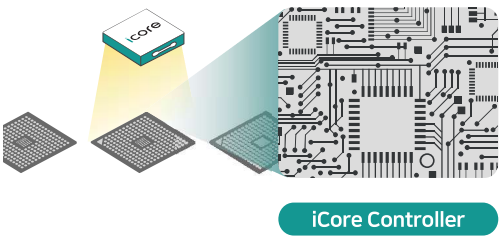
iPulse is a constant current controller for LED lighting. The product utilizes the advantage of constant current driving to provide up to 10x over-driving capability. Over-driving is a technology that instantaneously drives a current that exceeds the LED's rated current to increase the LED lighting's brightness by several times. iPulse can drive LEDs up to 200A, the highest in the industry, and assures constant LED current values at all times. It also has a built-in duration and duty ratio limiting function to protect LED elements.



On The Fly Inspection

iPulse's over-driving technology and fast response time can drastically improve on-the-fly review performance. Long exposure times and fast-moving objects easily cause blurred images. The minimum camera exposure time is around tens of μs, which is critical for special applications. iPulse's over-driving function reduces the actual exposure time to under 1 μs and instantaneously drives the current up to 200A. Users can benefit from the effect of eliminating blur and increasing image brightness simultaneously.





New Release

iPulse COM Series

New Lineup : COM Series

COM series features a fast response time of 4μs and supports up to 10x overdrive.
It also offers an independent trigger function, allowing each lighting channel to be controlled separately.

Feature

Competitive

Cost-effective, high-performance strobe controllers

Combine

Preserving iPulse's strengths while adding new functions tailored to customer needs

Compatible

Constant-current control ensures compatibility with a wide range of lighting products worldwide

Common

A user-friendly interface designed for easy operation by everyone.

Model	CH.	Max. Continuous Current	Max. Pulse Current	LED Voltage Range	Min. Pulse Width	Max. Frequency	Max. Power Output (Channel/Total)	Interface	Over Driving	Sequence Control	Auto Voltage
IP-COM2-02	2	2A	2A	3V ~ 48V	4μs	70kHz	48W / 200W	RS-485, RS-232	O	O	X
IP-COM2-10	2	2A	10A	3V ~ 48V	4μs	70kHz	48W / 200W		O	O	X
IP-COM2-20	2	2A	20A	3V ~ 48V	4μs	70kHz	48W / 200W		O	O	X
IP-COM4-02	4	2A	2A	3V ~ 48V	4μs	70kHz	48W / 200W		O	O	X
IP-COM4-10	4	2A	10A	3V ~ 48V	4μs	70kHz	48W / 200W		O	O	X
IP-COM4-20	4	2A	20A	3V ~ 48V	4μs	70kHz	48W / 200W		O	O	X
IP-COM8-02	8	2A	2A	3V ~ 48V	4μs	70kHz	48W / 250W		O	O	X
IP-COM8-10	8	2A	10A	3V ~ 48V	4μs	70kHz	48W / 250W		O	O	X
IP-COM8-20	8	2A	20A	3V ~ 48V	4μs	70kHz	48W / 250W		O	O	X
IP-COM16-02	16	2A	2A	3V ~ 48V	4μs	70kHz	48W / 300W		O	O	X
IP-COM16-10	16	2A	10A	3V ~ 48V	4μs	70kHz	48W / 300W		O	O	X
IP-COM16-20	16	2A	20A	3V ~ 48V	4μs	70kHz	48W / 300W		O	O	X

iPulse A Series

The Most Powerful iPulse : iPulse A Series

iPulse A Series is designed for high-speed strobing, supporting a maximum frequency of 300kHz. With up to 10x overdrive, it generates ultra-precise pulses of 200A current within 0.5μs.
Available in 1CH, 2CH, 4CH, and 8CH, the lineup offers a diverse range of models tailored to different rated currents, ensuring the optimal solution for any application.

Model	CH.	Max. Continuous Current	Max. Pulse Current	LED Voltage Range	Min. Pulse Width	Max. Frequency	Max. Power Output (Channel/Total)	Interface	Over Driving	Sequence Control	Auto Voltage
IP-1P1S-20A	1	2A	20A	3V ~ 80V	0.5μs	300kHz	30W / 30W	RS-485, RS-232	O	O	O
IP-1P1S-50A	1	5A	50A	3V ~ 80V	0.5μs	300kHz	30W / 30W		O	O	O
IP-1P1S-100A	1	5A	100A	3V ~ 80V	0.5μs	300kHz	30W / 30W		O	O	O
IP-2P2S-20A	2	2A	20A	3V ~ 80V	0.5μs	300kHz	30W / 60W		O	O	O
IP-2P2S-50A	2	5A	50A	3V ~ 48V	0.5μs	300kHz	125W / 250W		O	O	O
IP-2P2S-200A	2	20A(250W)	200A	3V ~ 48V	0.5μs	300kHz	250W / 500W		O	O	O
IP-2P2S-200B	2	20A(500W)	200A	3V ~ 48V	0.5μs	300kHz	500W / 1000W		O	O	O
IP-4P4S-20A	4	3A	20A	3V ~ 48V	0.5μs	300kHz	75W / 300W		O	O	O
IP-4P4S-50A	4	3A	50A	3V ~ 48V	0.5μs	300kHz	75W / 300W		O	O	O
IP-8P8S-20A	8	3A	20A	3V ~ 48V	0.5μs	300kHz	75W / 600W		O	O	O

iPulse Flashing Series for Areascan

Powerful Overdrive Performance : iPulse Flashing Series

iPulse Low Speed Series is a lighting controller specialized for overdrive. While its maximum frequency of 1kHz is similar to standard controllers, it perfectly supports 0.5μs high-speed strobing and delivers exceptional overdrive performance.

Model	CH.	Max. Continuous Current	Max. Pulse Current	LED Voltage Range	Min. Pulse Width	Max. Frequency	Max. Power Output (Channel/Total)	Interface	Over Driving	Sequence Control	Auto Voltage
IP-1P1S-200A	1	5A	200A	3V ~ 80V	0.5μs	1kHz	30W / 30W	RS-485, RS-232	O	O	O
IP-1P4S-20A	4	0.2A	20A	3V ~ 80V	0.5μs	1kHz	30W / 30W		O	O	O
IP-1P4S-50A	4	0.5A	50A	3V ~ 80V	0.5μs	1kHz	30W / 30W		O	O	O
IP-1P4S-100A	4	1A	100A	3V ~ 80V	0.5μs	1kHz	30W / 30W		O	O	O

iPulse C Series for Linescan

High-Speed performance with competitive price : iPulse C Series

iPulse C Series offers high-speed strobing with a maximum frequency of 300kHz while ensuring excellent compatibility with a wide range of lighting products through constant-current control. For applications with sufficient light output, this model optimizes high-speed strobe functionality without overdrive, maintaining performance while enhancing cost efficiency.

Model	CH.	Max. Continuous Current	Max. Pulse Current	LED Voltage Range	Min. Pulse Width	Max. Frequency	Max. Power Output (Channel/Total)	Interface	Over Driving	Sequence Control	Auto Voltage
IP-1P1S-2C	1	2A	2A	3V ~ 80V	0.5μs	300kHz	30W / 30W	RS-485, RS-232	X	O	O
IP-1P1S-5C	1	5A	5A	3V ~ 80V	0.5μs	300kHz	30W / 30W		X	O	O
IP-2P2S-2C	2	2A	2A	3V ~ 80V	0.5μs	300kHz	30W / 60W		X	O	O
IP-2P2S-5C	2	5A	5A	3V ~ 48V	0.5μs	300kHz	125W / 250W		X	O	O
IP-4P4S-1C	4	1A	1A	3V ~ 48V	0.5μs	300kHz	75W / 300W		X	O	O
IP-4P4S-3C	4	3A	3A	3V ~ 48V	0.5μs	300kHz	75W / 300W		X	O	O
IP-8P8S-3C	8	3A	3A	3V ~ 48V	0.5μs	300kHz	75W / 600W		X	O	O

Accessories

Enhance iPulse Experience with a diverse accessory lineup

Make iPulse even more convenient with a range of accessories, including a converter module that transforms RS485 to USB and a remote controller that enables full operation of iPulse without a PC.

	Model	Description
ACC	IPULSE USB-485	485-USB Converter to communicate the controller
	IPULSE RS485-HUB	485 Hub to communicate multiple controllers (MAX. 20 Channels)
	IPULSE Remote Controller	iPulse Remote Controller to manually control the controller without communicating at PC
	LRS-150-24 PKG	SMPS(LRS-150-24), Cable – AC(2m) / DC(2m) for iPulse
	LRS-350-48 PKG	SMPS(LRS-350-48), Cable – AC(2m) / DC(2m) for iPulse

02. Auto Focus Module

iFocus

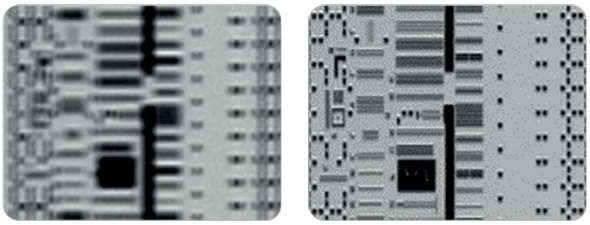
iFocus is the real-time auto focus model.

It is applied to the automatic optical inspection (AOI) of a high magnification optical system that measures the target object's position in real time and sets the optical image to detect defects of 1μm or less quickly in semiconductor and display inspection.

Real-time Auto Focus Solution

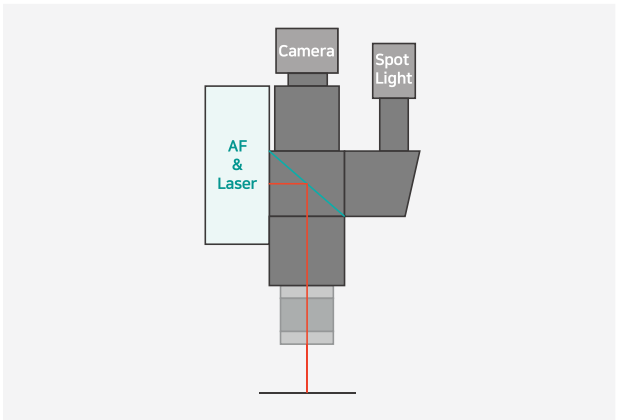
Auto focus function to set the focus automatically

Since the depth of field (DOF) is very shallow in high magnification optical systems, changing the height of the object may cause out of focus. iCore provides a solution that measures the distance and maintains a constant distance between the target object and the optical system in real time.



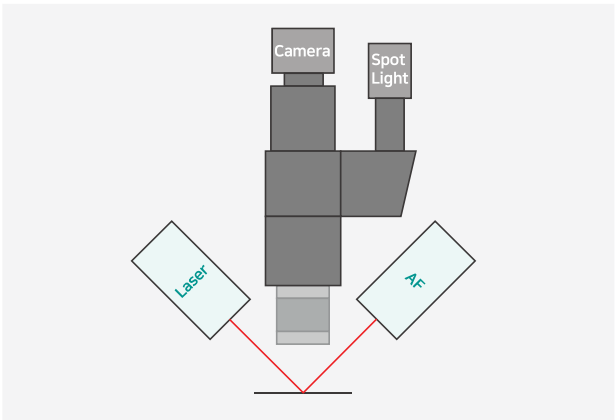
Through The Lens

TTL-type autofocus measures the distance to the sample based on laser light entering through the internal path of the lens to adjust the focus.



Optical Triangulation

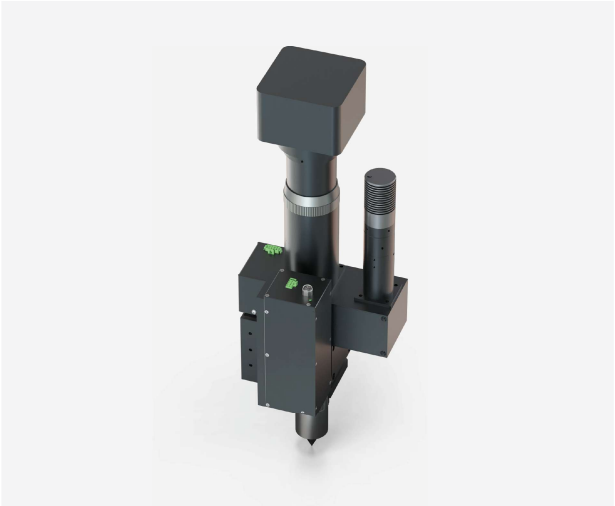
Optical Triangulation Autofocus adjusts the focus by detecting the sample's distance with an externally reflected laser, independent of the lens. This method is particularly effective for focusing on individual layers in stacked structures.



New Release

iFocus TTL Type

iFocus TTL Type is an autofocus system that measures the distance to the sample and adjusts focus using a laser light entering through the internal path of the lens.
Unlike optical triangulation methods, which can cause laser interference and restrict external lighting placement around the objective lens, iFocus TTL Type allows for greater lighting flexibility. It is particularly specialized for high-magnification optical systems of 20x or more, ensuring precise and reliable autofocus performance.



Selection Method for Auto Focus

Optical Lens

Objective Lens
for TTL Auto Focus
Tube Lens for TTL Auto Focus

Auto Focus Sensor

IT-AF-TTL1
TTL Type Auto focus Sensor

Z-axis Actuators

IAF-ZAA-02
Controls only the Z-axis
of the objective lens

IT-AF-TTL1 Auto Focus Sensor

TTL Type Auto Focus Sensor requires a specially designed Tube lens and Z-axis actuators.

Focus Update Rate	1.2kHz
Sensing Type	Through The Lens
Interface	RS485 (9,600bps~921,600bps)
Input Voltage	24V, 0.5A
Function	Auto Exposure / Auto Laser Control / Laser Brightness Control by PD Feedback

iFocus

Triangulation Type

iFocus Triangulation type is an auto focus module using optical triangulation in which the AF sensor captures the amount of displacement of the laser beam reflected from the target object.

The AF sensor calculates the distance in pixels that change around the focus position and performs motor control in real time.

Selection Method for Auto focus

Objective Lens

Excellent resolution at high magnification
Compact module design for AF configuration

FA Lens

Compatible with large-aperture cameras
More cost-effective than microscope lenses

IT-AF-MBK

Optimized for objective lenses
Easy installation and ideal
for compact configurations.

IT-AF-M

Suitable for large format FA lenses
While installation is more challenging,
it offers greater flexibility in AF settings.

IT-AF-S

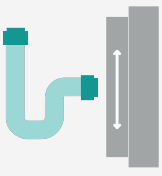
Similar to IT-AF-M, but direct motion control
is not possible. Only displacement values
can be output via RS232 communication.

IAF-ZAA-02

Control method that moves only
the Z-axis of the objective
lens based on the principle of
infinite optical systems

IAF-ZAA-01

Control method that moves
the entire Z-axis of the optical system.
Selected for use with FA lenses.



CABLE

Designed to be mounted beneath
the lens, with an integrated laser
module for easy installation.

IT-AF-MBK1 Auto Focus Sensor

An Auto Focus Sensor compatible with large format cameras. Designed to be mounted under the lens, it features an integrated laser module for easy installation.

Large Format Lens | IAF-ZAA-01

IT-AF-MBK2 Auto Focus Sensor

An Auto Focus Sensor optimized for objective lenses. With an integrated laser module for easy installation, it features a compact design that wraps around the tube lens.

IAF-TU | IAF-ZAA-02

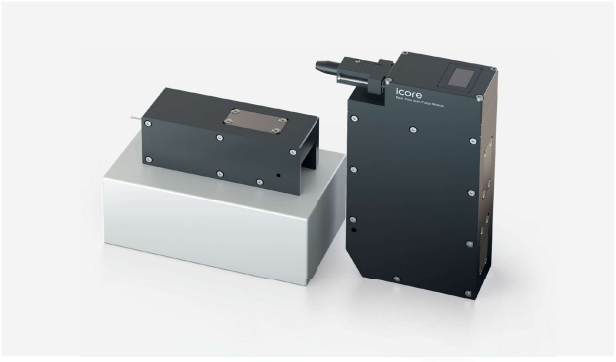
IT-AF-M1 Auto Focus Sensor

Auto Focus Sensor & Controller (IT-AF-M1) is a product integrating various functions for auto focus such as displacement measurement, motion control, and laser control. It also provides various interface options such as analog output, digital output function, and step motor drive so that it can be applied to AF systems under various conditions.

FA Lens | IAF-ZAA-01

IP-AF1 Auto Focus Sensor

It is an auto focus module that outputs height values as analog data, which has a fast sampling speed of 50kHz.



iFocus

Lens Module

iCore designs and offers custom products tailored to meet customer needs, including various AF Sensors and Objective Lenses. Also, we have developed a lens changer module designed for use with the AF Sensor, allowing easy replacement of tube units and objective lenses.

IAF-TU Series Lens

It can be customized to meet customer needs, including changes to the magnification of the tube lens, adding a beam splitter for coaxial lighting, and further configurations for TTL Autofocus.

IT-AF-TTL1 IT-AF-MBK2

IAF-LLC03 Linear Lens Changer

The Linear Lens Changer (LLC) is an Objective Lens Changer based on a high-speed Linear Shaft motor. It can shift the adjacent lenses within 0.2 seconds, ensuring ±1μm accuracy. Applied to iCore's iFocus (Auto Focus Module), it provides an optimized solution.

IT-AF-M1 IT-AF-TTL1

iFocus

Z-Axis Actuator

We offer customized designs tailored to the lenses in use, ranging from configurations that move the entire optical system to Z-axis actuators for microscope lenses that move only the objective lens.

IAF-ZAA-01 Z-axis Actuator

Z-Axis Actuator for Entire Optical System Movement
This universal Z-Axis Actuator is suitable for a wide range of lenses, including general FA lenses, large format lenses, and microscope lenses.

IT-AF-MBK1 IT-AF-MBK2 IT-AF-M1

IAF-ZAA-02 Z-axis Actuator

Z-Axis Actuator for Objective Lens
It is specially designed for microscope lenses, moving only the Z-axis of the objective lens. It is built on an infinite optical system, offering exceptional resistance to vibrations.

IT-AF-TTL1 IT-AF-MBK2

03. High Brightness Light

iLight

iLight is a lighting solution product that specializes in high-speed, high-magnification inspection in various fields and is optimized iPulse products (strobe controller).

It has Hybrid Spot Light that combines Laser and LED lighting technology, and there are also variety of high-brightness spot lights and Light Source products with a fast response speed of 0.5μs.

A Variety of Products

iCore offers a diverse lineup of spot lights, ranging from UV to NIR.

Hybrid Spot Light
(46mm)

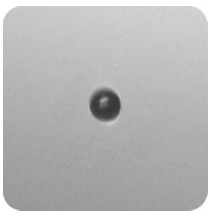
RGB Spot Light Coaxial
(75mm)

LED Spot Light
(29mm)

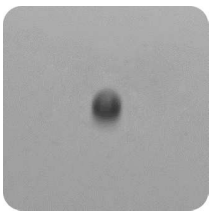
Projection Light
(45mm)

Drop Watcher

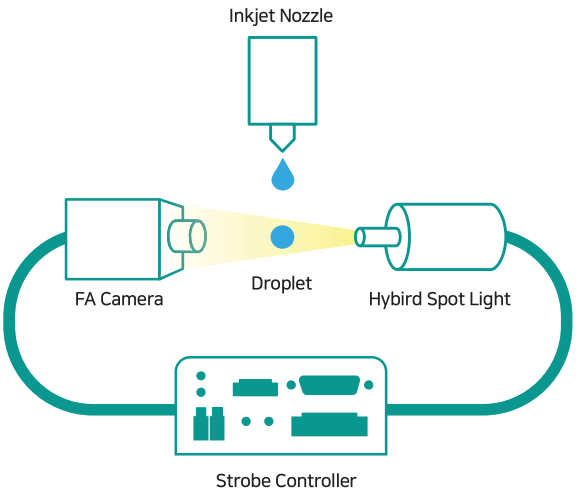
Drop watcher is an application that investigates ink drops after leaving the printhead. Very short period of lighting and high brightness are essential to catch the flight characteristics with sub-micron resolution.



Pulse duration 250ns



Pulse duration 1,000ns



New Release

Hybrid Spot M2 Type

Hybrid Spot M2 Type offers three times higher brightness output, compared to the existing Hybrid Spot M1 Type. It combines Laser and LED technologies, providing sharp, bright images without blur in high-speed and high-magnification inspection.

It can be used for coaxial spot lighting applications and can be connected to optical fibers via a dedicated adapter for extended lighting options.

Feature

Laser and LED combination

3X

3X brighter output than Hybrid Spot M1

Supports fiber connection

Line-up

Hybrid Spot Light

Model	Color	Wavelength	Power	Controller
ILS-HWS4800W-S46	White	5500K	Pulse : 4800W	IP-HYBRID-M2

Light Guide

Model	Light Guide	Diameter	Working Distance	Length
ILRG-D39-W16-L1000	Ring	39mm	16mm	1000mm

Light Guide Adaptor

Model	
AD-HWS-F01-SU	for Sumita
AD-HWS-F02-HY	for Hayashi
AD-HWS-F03-MO	for Moritex

AD-HWS-F01-SU

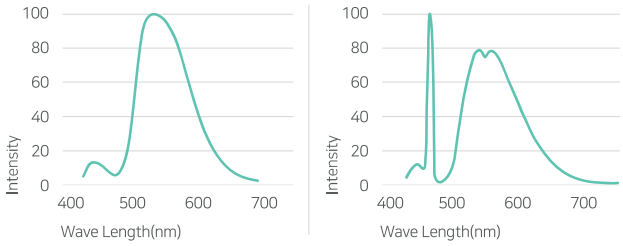
AD-HWS-F02-HY

AD-HWS-F03-MO

Hybrid Spot M1 Type

Hybrid Spot Lighting provides a higher luminance than the LED as an alternative to conventional LED and xenon lamp.
The combination of laser and LED technology provides 10,000 hours of life without short life and brightness fluctuations, which are disadvantages of xenon lamp.

Spectrum



ILS-HWS1600G-D46

ILS-HWS1600W-D46

Model	ILS-HWS1600G-D46	ILS-HWS1600W-D46
Color	Green	White
Wavelength / Kelvin	540nm	5500K
Power	DC : 10W / Pulse : 1600W	
Controller	IP-HYBRID-M1	

High-Brightness Spot Light

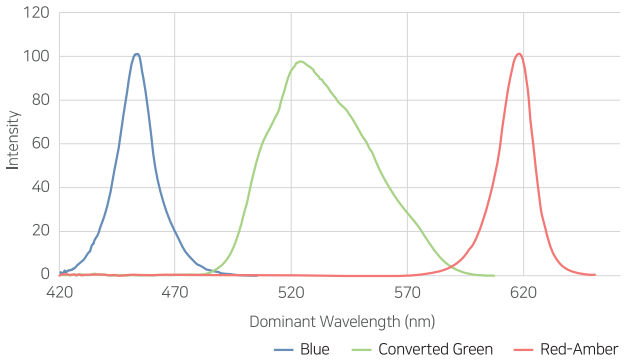
It is a 29mm type spot light with higher brightness and uniformity compared to typical spot light. It is available in various lineups covering UV to NIR wavelengths. It can be combined with our product iPulse to reliably overdrive.

Model	Color	Wavelength / Kelvin	Power	Current	Model	Color	Wavelength / Kelvin	Power	Current
ILS-UV5A-D29	UV	365nm	5W	1.2A	ILS-G10A-D29	Green	520nm	10W	3A
ILS-UV5B-D29	UV	380nm	5W	1.2A	ILS-G20A-D29	Green	520nm	20W	5A
ILS-UV5C-D29	UV	390nm	5W	1.2A	ILS-R5A-D29	Red	620nm	5W	2.5A
ILS-UV5D-D29	UV	400nm	5W	1.2A	ILS-R10A-D29	Red	620nm	10W	4A
ILS-UV10A-D29	UV	405nm	10W	2.8A	ILS-W10A-D29	White	6500K	10W	3A
ILS-UV3A-D29	UV	415nm	3W	1A	ILS-W20A-D29	White	6500K	20W	5A
ILS-B10A-D29	Blue	460nm	10W	3A	ILS-RGBW20A-D29	RGBW	620nm(R), 520nm(G) 460nm(B), 6500K(W)	20W x 4	5A x 4
ILS-B20A-D29	Blue	460nm	20W	5A					

RGB Spot Light Coaxial

It is a high brightness spot light that allows independent control of RGB. With its compact product size, it can be combined with iPulse for stable use. It enables the output of various colors of light by using RGB individually or in combination.

RGB Spot Spectrum



Model	ILS-RGB80A-COA
Color	RGB
Wavelength	613nm(R) / 555nm(G) / 455nm(B)
Power	20W(R) / 30W(G) / 30W(B)
Current	4A(R) / 5A(G) / 5A(B)

Projection Light

It is a high power spot Light with excellent light concentration and uniform output, designed with a precision optical system coated with AR. It consists of condenser lens and focusing lens, allowing to define the focus position. It is available in a diverse line up covering UV to NIR wavelengths.

Model	Color	Wavelength / Kelvin	Focal Length (mm)	Power
ILS-W90A-D45	White	6500K	DC : 90W	50/75/∞
ILS-UV90A-D45	UV	365/405 nm	DC : 90W	50/75/∞
ILS-R90A-D45	Red	620 nm	DC : 90W	50/75/∞
ILS-G90A-D45	Green	520 nm	DC : 90W	50/75/∞
ILS-B90A-D45	Blue	460 nm	DC : 90W	50/75/∞
ILS-NIR90A-D45	NIR	850/940 nm	DC : 90W	50/75/∞

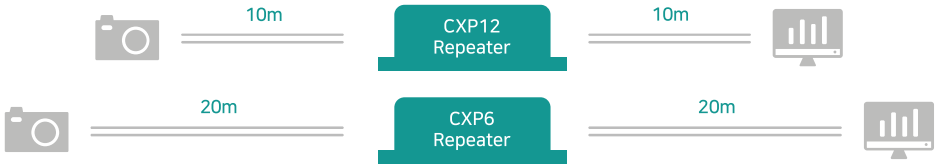
04. Repeater & Splitter

iPlus

iPlus is a repeater that increases the transmission distance between the camera and the frame grabber without data loss or splitter that splits the camera's data and transmits them to two or more frame grabbers.
It enables stable data transmission by applying a design optimized the interface and provides various models for user-friendliness to provide the optimal solution.

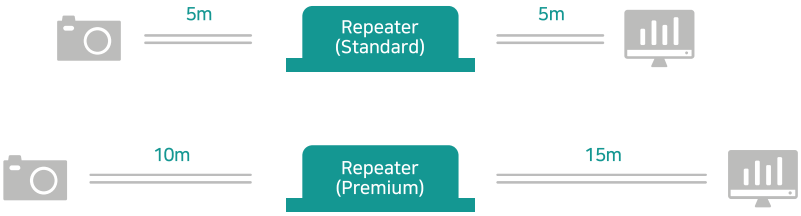
CXP6/CXP12 Repeater

High speed : Support for 6.25Gbps (CXP6) and 12.5Gbps (CXP12)
User-friendly features : PoCXP compatibility and use of external power available 4CH Model
CXP2.0 compatibility : Micro BNC connector and support for the CXP2.0 standard



Camera link Repeater

Simple length extension : Extended up to 25m (Premium) and 10m (Standard) at 85MHz Pixel Clock.
User-friendly features : PoCL standard compatibility and power input/output terminal
Clear data transmission : Equalization and pre-emphasis functions (Premium)



Camera link Splitter

Simple data forwarding : Splitting of the received image data to enable performing multiple tasks simultaneously
User-friendly features : CameraLink interface with PoCL standard compatibility and power input/output terminal
High speed : Support for 85MHz pixel clock and 80bit expansion

iPlus Line-up

CXP6/CXP12 Repeater

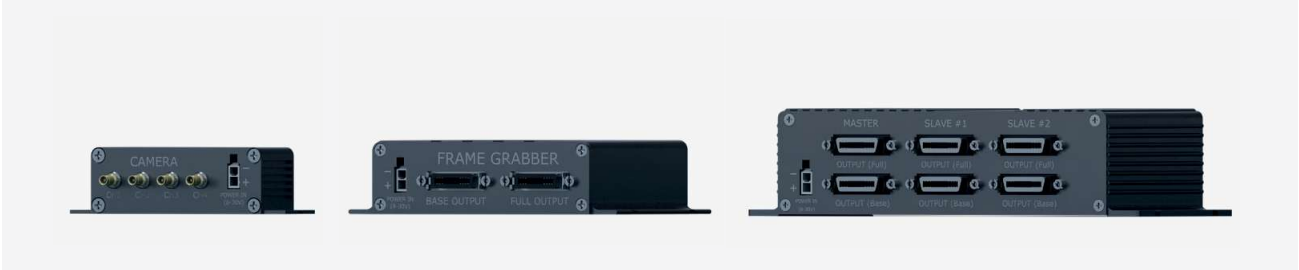
	Model	Description	Interface	Type
CXP 12G	IPLUS-CXPR-HDB1	Repeater CXP 12G, 1Channel, HDBNC	CXP	1Channel
	IPLUS-CXPR-HDB2	Repeater CXP 12G, 2Channel, HDBNC	CXP	2Channel
	IPLUS-CXPR-HDB4	Repeater CXP 12G, 4Channel, HDBNC	CXP	4Channel
CXP 6G	IPLUS-CXPR-DIN1	Repeater CXP 6G, 1Channel, DIN	CXP	1Channel
	IPLUS-CXPR-DIN2	Repeater CXP 6G, 2Channel, DIN	CXP	2Channel
	IPLUS-CXPR-DIN4	Repeater CXP 6G, 4Channel, DIN	CXP	4Channel

Camera Link Repeater

	Model	Description	Interface	Type
CL Standard	IPLUS-CLR-SFS	Repeater CL Full Type, MDR	Camera Link	Standard
	IPLUS-CLR-DBS	Repeater CL Dual Base Type, MDR	Camera Link	Standard
	IPLUS-CLR-SBS(S)	Repeater CL Base Type, SDR	Camera Link	Standard
	IPLUS-CLR-DBS(S)	Repeater CL Dual Base Type, SDR	Camera Link	Standard
	IPLUS-CLR-SFS(S)	Repeater CL Full Type, SDR	Camera Link	Standard
CL Premium	IPLUS-CLR-SFP	Repeater CL Full Type, MDR	Camera Link	Premium
	IPLUS-CLR-SBP(S)	Repeater CL Base Type, SDR	Camera Link	Premium
	IPLUS-CLR-DBP(S)	Repeater CL Dual Base Type, SDR	Camera Link	Premium

Camera Link Splitter

	Model	Description	Interface	Type
CLS	IPLUS-CLS-SF2	Splitter CL Base / Medium / Full, SDR	Camera Link	2Channel
	IPLUS-CLS-SF4	Splitter CL Base / Medium / Full, SDR	Camera Link	4Channel
	IPLUS-CLS-MF2	Splitter CL Base / Medium / Full, MDR	Camera Link	2Channel
	IPLUS-CLS-MF3	Splitter CL Base / Medium / Full, MDR	Camera Link	3Channel



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