



icore

INNOVATION TO THE CORE

—
Products Selection Guide

Company Introduce

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 will always embody innovative and unique technologies in products preferred by our customers.



Vision

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

Core values



Customer

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



Trust

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



Happiness

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



Light Source

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 $0.5\mu\text{s}$ even under the condition of 200A or higher. It enables stable and precise strobe lighting with high-power LEDs.

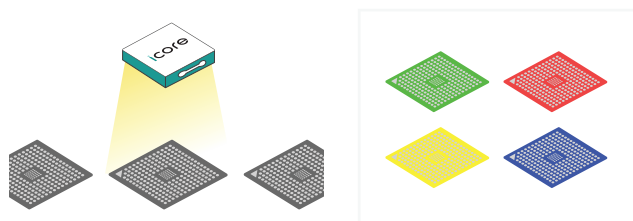


Model	No. of channel	Min. Pulse width	Max. Switching frequency	Max. Voltage output	Max. Current output (Continuous/Pulse)	Max. Power (Continuous/Pulse)
IP-1P1S-20A	1	0.5 μs	300KHz	80V	2A / 20A	60W / 1500W
IP-1P1S-50A					5A / 50A	60W / 4000W
IP-1P1S-2C					2A / 2A	60W / 160W
IP-1P1S-5C					5A / 5A	60W / 400W
IP-1P1S-80A	1	0.5 μs	1KHz	80V	5A / 80A	60W / 6400W
IP-1P1S-200A	1				5A / 200A	60W / 16000W
IP-1P4S-20A	4	0.5 μs	1KHz	80V	0.2A / 20A	60W / 1600W
IP-1P4S-50A	4				0.5A / 50A	60W / 4000W
IP-1P4S-100A	4				1A / 100A	60W / 8000W
IP-2P2S-20A	2	0.5 μs	300KHz	80V	2A / 20A	60W / 1500W
IP-2P2S-50A				48V	5A / 50A	125W / 2000W
IP-2P2S-2C				80V	2A / 2A	60W / 160W
IP-2P2S-5C				48V	5A / 5A	125W / 250W
IP-4P4S-20A	4	0.5 μs	300KHz	48V	3A / 20A	100W / 1000W
IP-4P4S-50A					5A / 50A	100W / 2400W
IP-4P4S-3C					3A / 3A	100W / 150W
IP-8P8S-20A	8	0.5 μs	300KHz	48V	3A / 20A	100W / 1000W
IP-8P8S-3C					3A / 3A	100W / 150W
IP-2P2S-200A	2	0.5 μs	300KHz	48V	20A / 200A	250W / 9600W
IP-2P2S-200B					20A / 200A	500W / 9600W



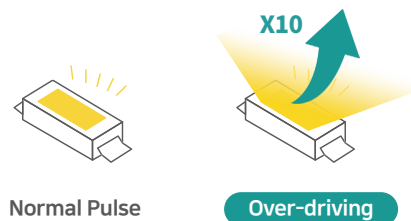
Multi-strobing

iPulse has a built-in sequence function to drive each LED channel sequentially with a trigger. Using the function, users can easily acquire multi-strobing images. Users can designate up to eight sequences to individually control eight LEDs or control them differently by combining multiple LEDs. The product can acquire multiple images with a single-line scan camera without an expensive multispectral line scan camera.



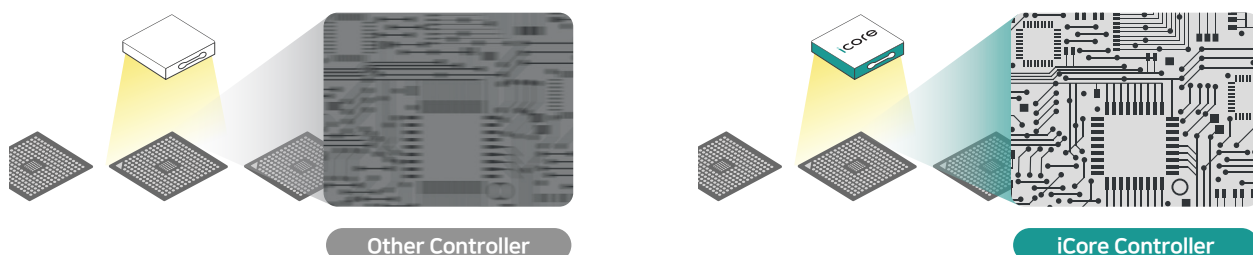
Over-Driving

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.



Flying inspection

iPulse's over-driving technology and fast response speed can drastically improve the flying review performance. Because of the camera exposure time, capturing a fast-moving object can result in a blur phenomenon in which the object appears blurry. The minimum camera exposure time is around tens of us and can be a critical disadvantage for special applications. iPulse's over-Driving function can reduce the lighting exposure time to under 1μs and drive the instantaneous current up to 200A. Users can benefit from the effect of eliminating blur and increasing image brightness simultaneously.



02

Auto Focus Module

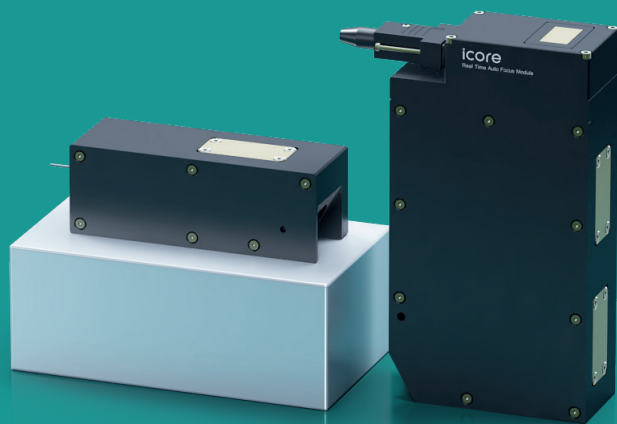
iFocus

iSAF is the FPGA-based real-time auto focus model using the principle of optical triangulation.

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 1 μ m or less quickly in semiconductor and display tests.

iSAF

Model	iSAF
Focus Update Rate	2KHz
Capture Range	$\pm 1500\mu\text{m}$
Laser	Wavelength : 655 \pm 5 (nm) 32mA
Interface	RS232 (9600bps ~ 115200bps) / Ethernet
Input Voltage	24V
DIO	Input 4CH, Output 4CH



iP-AF1

Contents	iP-AF1
Sensor Active Area	6mm (Length) X 1mm (width)
Max Sampling Speed	
Input	Output
100KHz 16/18 bit ADC	Output Signal : -10 ~ 10V (Differential)
Analog Input BW:100KHz	Output Signal : -5 ~ 5V (Single ended)
	Output impedance : 50ohm
	Analog Output BW : 50KHz
Position Resolution	< 0.15 μm (at Single Sampling)
Linearity Error	< 0.4%
Digital Interface	RS-485 (Modbus)
Operation	Off, Continuous, Pulse
Display	Position, Brightness, Error Code
Power Input	Normal Operation : 24V / 0.1A Power Input Range : 8 ~ 48V
Power Consumption	< 0.5W

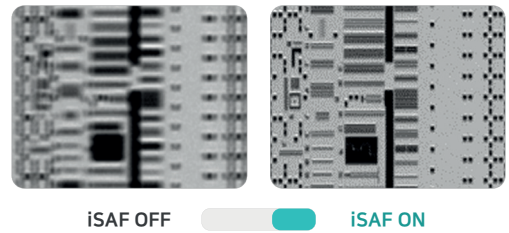
Function

- 1 Ambient Light Cancelling Function
- 2 Laser Current Control
- 3 Low Pass Filter Setting
- 4 Output Gain / Offset Control
- 5 Position Range Setting

Auto focus

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.

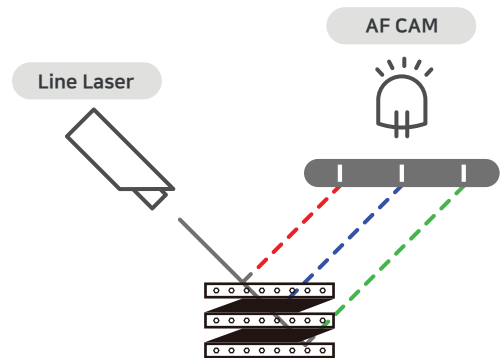


Optical triangulation

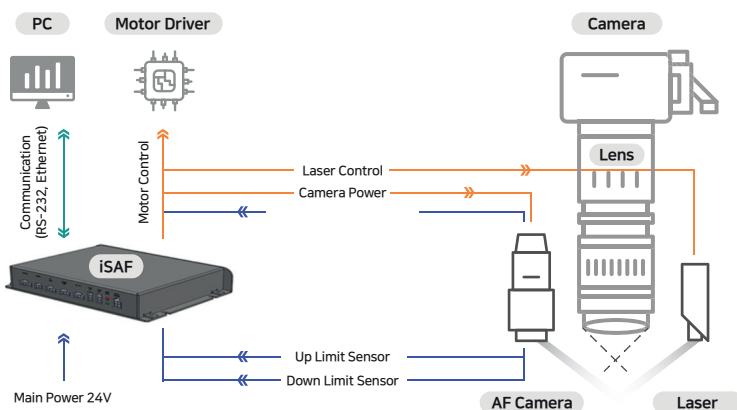
Features of optical triangulation iSAF

iSAF is an auto focus module using optical triangulation in which the AF camera captures the amount of displacement of the laser beam reflected from the target object. The AF camera calculates the distance in pixels that change around the focus position and performs motor control in real time.

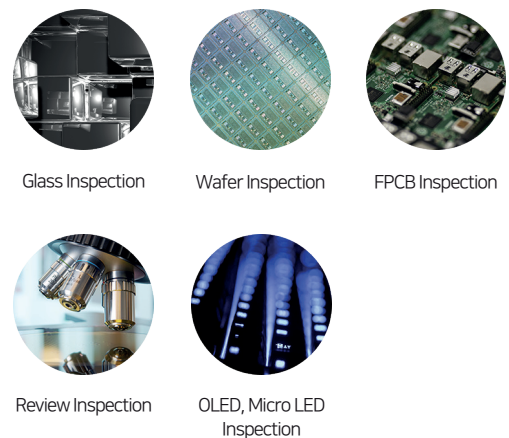
Its non-contact distance measuring sensor ensures high-speed and high-precision measurement and assures uniform image quality over the entire image area. Since iSAF has a built-in FPGA in its module, it can quickly control the AF System.



iSAF Detailed structure



Application



03 Spot Light iLight



iLight

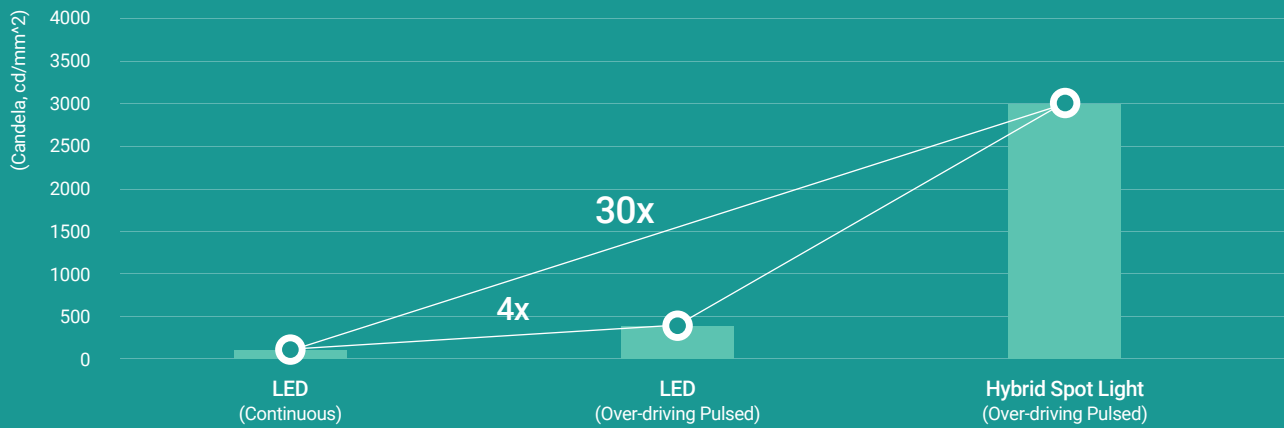
iCore Spot Light is equipped with high-power and high-brightness LED with the latest technology. It provides bright, uniform lighting for Objective Lens and Telecentric Lens with a high condensing optical system. It can be used with iPulse controller to monitor brightness and life under over-driving conditions to provide optimal driving conditions.

Hybrid Spot Light

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.

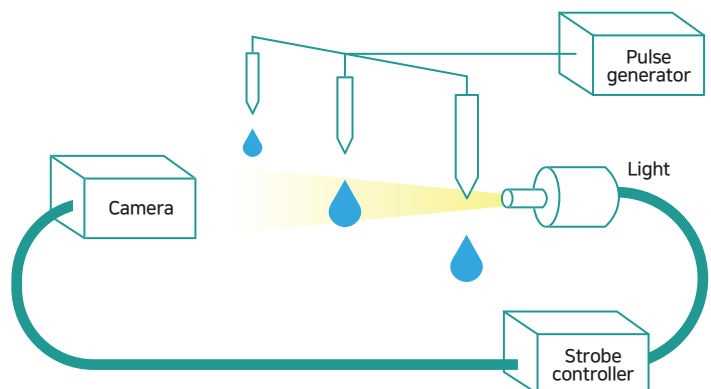
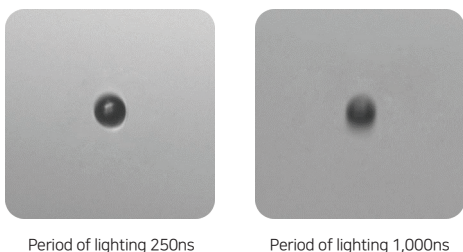
Model	Color	Wavelength	Power	Controller
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I LS-HWS1600W-D55	White	5500K	DC:10W Pulse:1600W	Exclusive controller for Hybrid spot light
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Drop watcher

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.



High Power LED Spot Light 45mm



Model	Color	Wavelength	Focal Length (mm)	Power	Controller
ILS-W90A-D45	White	6500nm	50/75/∞	DC : 90W	IP-1P1S-200A IP-2P2S-200A
ILS-UV90A-D45	UV	365/405nm	50/75/∞	DC : 90W	
ILS-R90A-D45	Red	620nm	50/75/∞	DC : 90W	
ILS-G90A-D45	Green	520nm	50/75/∞	DC : 90W	
ILS-B90A-D45	Blue	460nm	50/75/∞	DC : 90W	
ILS-NIR90A-D45	NIR	850/940nm	50/75/∞	DC : 90W	

LED Spot Light 29mm



Model	Color	Wavelength	Power	Current	Controller
ILS-UV5A-D29 ILS-UV5B-D29 ILS-UV5C-D29 ILS-UV5D-D29	UV	365nm 380nm 390nm 400nm	5W	1.2A	IP-1P1S-20A
ILS-B10A-D29 ILS-B20B-D29	Blue	460nm	10W 20W	3A 5A	IP-1P1S-20A IP-1P1S-50A
ILS-G10A-D29 ILS-G20A-D29	Green	520nm	10W/20W	3A 5A	IP-1P1S-20A IP-1P1S-50A
ILS-R5A-D29 ILS-R10A-D29	Red	620nm	5W/10W	2.5A 4A	IP-1P1S-20A IP-1P1S-50A
ILS-W10A-D29 ILS-W20A-D29	White	6500K	10W 20W	3A 5A	IP-1P1S-20A IP-1P1S-50A
ILS-RGBW20A-D29	RGBW	460/520/620nm 6500K	20W X 4	5A X 4	IP-1P4S-20A IP-4P4S-20A

Light Source



Model	iL1001	iL1002	iL2001	iL2002
CH	1	2	1	2
Output Power (Continuous/Pulse)	100W / 700W		150W / 1000W	
Continuous Brightness	0 ~ 100%			
Pulse Brightness	0 ~ 1000%			
Minimum Pulse Width	0.5μs			
Maximum Strobe Cycle	300KHz			
Optical Fiber	15mm			
Interface	RS-485, RS-232			
Over-Driving	0			
Sequence Control	0			
Filter Wheel	Optional			

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.



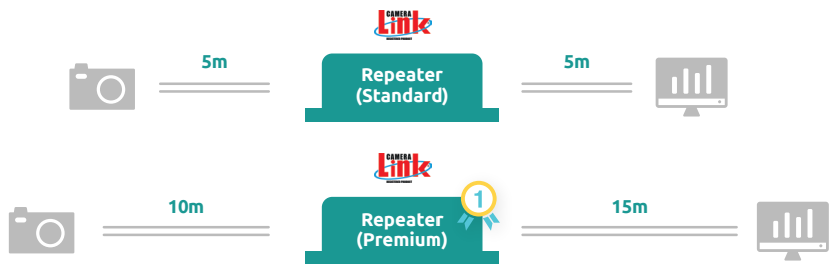
CXP6/CXP12 Repeater

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



Camera link Repeater CL 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 CL 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



	Model	Specification	Channels	Interface	Data Rate	Connector type	Power Supply
CL Repeater	iPLUS-CLR-DFP	Repeater CL Dual Full Type (Premium) - Repeater CL Full Premium	2	Camera Link Full	20-85MHz	MDR26	Power adapter (not included) or PoCL compliant
CL Splitter	iPLUS-CLS-MF3	Splitter CL Base/Medium/Full - 3 Channel Splitter CL	3	Camera Link Full	20-85MHz	MDR26	Power adapter (not included) or PoCL compliant
CXP Repeater	iPLUS-CXPR-HDB4	Repeater CXP 12G - 4 Channel, HDBNC	4	CXP12	41.66Mb/s	Micro BNC (HD BNC)	Power adapter (not included) or PoCL compliant

Acc.

Acc.0 : iPulse USB-485

485-USB converter to communicate the controller.

Acc.1 : iPulse RS485-HUB

485 Hub to communicate multiple controllers. (MAX. 20 Channels)

Acc.2 : iPulse Remote Controller

iPulse Remote Controller to manually control the controller without communicating at PC.

Acc.3 : SC-100 (Trigger Converter)

Trigger converter to convert TTL or LVDS signal.

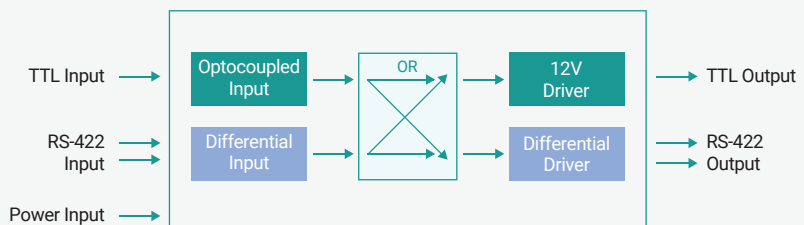
Trigger Converter SC-100

Specifications

Port	Type	Description
Input	Single Ended (Opto coupler)	Input Range : 3.0V - 24V, > 3mA Input Freq. : < 1MHz
	Differential (LVDS, RS-422)	Input Range : 3.0V - 5.0V Input Freq. : < 10MHz
Output	Single Ended Output	Output Range : 12.0V Output Freq. : < 1MHz
	Differential (LVDS, RS-422)	Output Range : 5.0V Output Freq. : < 101MHz
Power	Power Input	12 - 48V, 0.5A

Application

- TTL to TTL (3V → 12V Repeater)
- RS-422 to RS-422 Repeater
- TTL to RS-422 Transfer
- RS-422 to TTL Transfer





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