



## Color Sensors



Shanghai Lanbao Sensing Technology Co., Ltd.



## Shanghai Lanbao Sensing Technology Co., Ltd.

Established in 1998, Shanghai Lanbao Sensing Technology Co., Ltd. is a leading industrial automation products supplier in China. Our main businesses are industrial sensors R&D, production, sales and application, providing customers with standard and individual products and systems. Lanbao industrial sensors cover over 30 series, 3000 specifications, main products are inductive sensors, photoelectric sensors, capacitive sensors and pressure sensors. Lanbao has been making continuous breakthrough in new technology and new material application, which laid the foundation of its leading position in sensing technology.

Lanbao is an ISO9001:2008 quality management system and EU RoHS environmental directives implemented enterprise. Our series products are with CE, UL and CCC certification. The strict tests in function, quality, reliability and production feasibility at the design stage of each product and the strict quality management in production ensure excellent quality products.

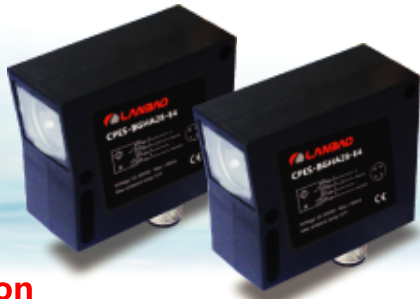
Focus on innovation, quality, service and global market, Lanbao insists on creating maximal value for customers.



LANBAO SENSOR  
LANBAO SENSOR



# Contrast Sensor



## Specification

		CPES-BGHA28-E4	CPES-BGHA28	CPES-IGHA28-E4	CPEM-BGHA28-E5	CPEM-BGHAL28-E5	CPEM-IGHA28-E5	CPEM-IGHAN28-E5
Light source	White LED 400...700 nm	■	■	■	■	■	■	■
Spot dia. @ 50 mm	3mm@28mm	■	■		■	■		
	1mm@28mm			■				
	0.5mm@28mm						■	■
Receiver	Photodiode	■	■	■	■	■	■	■
Sensing range	28 mm±3 mm	■	■	■	■	■	■	■
Recommended sensing distance	28mm	■	■	■	■	■	■	■
Response time	25µs	■	■	■	■	■	■	■
Switching frequency	40 kHz	■	■	■	■	■	■	■
Analog output	0...5V	■	■	■	■	■		
Display	0...50					■	■	
	0...99							■
Teach	Mark and background	■	■	■				
Manual adjustments						■	■	■
LED intensity	LED intensity, 3 settings					■	■	■
Threshold adjustment	Over full range					■	■	■
Hysteresis	0...9 steps below threshold					■	■	■
Output pulse stretch	0.10,20...90ms					■	■	■
Output function	NO/NC					■	■	■
Discrete output	Auto select, NPN/PNP	■	■	■	■	■	■	■
Current (max.)	100mA	■	■	■	■	■	■	■
Voltage (max.)	Sensor V+	■	■	■	■	■	■	■
Protection	Short-circuit, transient, EMI	■	■	■	■	■	■	■
Min. pulse duration ( ms )	0, 10, 20...90					■	■	■
Indicator	Red – detect					■	■	■
	Amber - detect	■	■	■				
	Green – power	■	■	■	■	■	■	■
Security	LOCK/UNLOCK keypad					■	■	■
Power	12...24V DC@60mA (max.)	■	■	■	■	■	■	■
Protection	Reverse polarity, over current ( PTC fuse)	■	■	■	■	■	■	■
Dimensions	51mm×61mm×25mm	■	■	■	■	■	■	■
Weight	95g	■	■	■	■	■	■	■
Housing material	Plastic	■	■	■				
	Metal alloy				■	■	■	■
Protection degree	IP65	■	■	■				
	IP67				■	■	■	■
Operating temperature	-10...55°C	■	■	■	■	■	■	■
Storage temperature	-20...70°C	■	■	■	■	■	■	■
I/O cable	2m		■					
I/O connector	Circular M12, 4 pin	■		■				
I/O connector	Circular M12, 5 pin				■	■	■	■
Certification	CE	■	■	■	■	■	■	■

## Features

- 3.0mm spot size
- 25µs response time
- Two-button teach
- Broad spectrum white LED
- Automatic LED intensity adjustment
- PNP/NPN
- Discrete output
- Analog output

## Accessories



Bracket

## Product application

- Sort products by color
- Detect registration marks
- Confirm presence of date codes
- Detection of glossy surfaces
- Detects cap inserts



# Semi-transparent Color Sensor



## Specification

Model name	Emitter	<b>CPR30-T300</b>
	Receiver	<b>CPR30-C2M300</b>
Color distinguish	Reaches 2 channels	
Average	Read 1...64	
Teach	RGB value from 1 to 100%	
Tolerance	0.5%...50%	
External trigger	Horizontal, Edge, Free travel	
luminance	0-100%	
Discrete output	High or low ( Virtual channel connection or grounding)	
RGB value display	Bar chart- Absolute value, Pie graph – relative value	
<hr/>		
Light source	White LED	
Detection range	300mm	
Response time	20KHz	
Receiver	RGB Photodiode	
Discrete output	2	
Communication	RS-232C/USB	
Circuit protection	Reverse polarity, over-current (PTC Heat resettable fuse)	
Power supply	12...30V DC	
External trigger	12...30V DC	
Operating temperature	-10°...55°C	
Storage temperature	-20°...70°C	
Protection degree	IP67	
Housing material	Metal alloy	
Certification	CE	

## Product application

Online , Semi-transparent packing ; Medicine container ; Food packing ;  
Personal care products ; Glass container ; Plastic bottle ; Semi-transparent thin film.

## Features

- Fast response
- Max resolution
- PC-base configuration software
- Programmable discrete output
- Serial data output
- Analog output (RGB)
- USB/RS232interface
- Lock service provider to avoid setting changes
- Unique M30 housing design
- Laser mark position sensor
- Adjustable bracket configuration

## Accessories and operational software



Accessory bag



Mounting Bracket



- Exclusive PC-based configuration.
- Operator lockout prevents operators from changing the sensor settings in order to avoid reporting manufacturing quality issues.
- Software driven control of discrete output logic.

# Color Light Measurement Sensor



## Specification

Model name	<b>CPR30-0C4M600-E12</b>
Color recognition	4 channels.
Average	Read 1 ...64
Teach	RGB values from 1 to 100%.
Tolerance	0.5%...50%
External trigger	Level, Edge, Free Run.
RGB value display	High or low ( Virtual channel connection or grounding)
Discrete output	Bar chart- Absolute value, Pie graph – relative value

Receiver	RGB photodiode
Recommended operating distance	50mm...600mm ( depends on source intensity )
Color recognition channels	4
Color recognition discrete outputs	4
Sampling frequency	20 kHz
Analog outputs	Red, green blue (3 channels 0...5V)
Power	12...30V DC
External trigger	12...30V DC
Communication	RS-232C/USB
Protection interface	Reverse polarity, over current (PTC thermal resettable fuse)
Dimensions	110mm×30mm
Weight	180g
Housing	316 Stainless steel
Operating temperature	-10°...55°C
Storage temperature	-20°...70°C
Circular connector	12-pin
Protection degree	IP67
Certification	<b>CE</b>

## Product application

Automotive lighting verification; LED, relative color measurement; LCD and LED display quality; Evaluation of all visible light sources.

## Features

- Fast response time
- Max resolution
- Versatile, user supplied light source
- PC-based configuration software
- Programmable discrete outputs
- Serial data output
- Analog outputs (RGB)
- USB / RS232 interface
- Lock out operator from changing settings
- Uhigen M30 housing

## Accessories and operational software



Accessory bag



- Exclusive PC-based configuration.
- Operator lockout prevents operators from changing the sensor settings in order to avoid reporting manufacturing quality issues.
- Software driven control of discrete output logic.

# Opacity Sensors



## Specification

Model name	<b>CPEM-ANHAN300-E5</b>
Normal operating mode	Displays relative reflection intensity
Calibration	User sensitivity adjustment
Threshold	Set detection level
Led intensity	Set LED, LO, MED, HI
Hysteresis level	Set undetect level 1...9 steps below threshold
Discrete output	Set normally open or normally closed
Output pulse stretch	Set minimum output period 10...90mS
Security	Lock/unlock pushbutton controls
Teach mode	Auto-set detection threshold

Light source	LED
Light source intensity	3 Levels
Sensing distance	up to 300mm
Response time	<150µs
Switching Frequency	6KHz
Relative intensity display range	00 ... 99
Sensitivity	Adjustable
Signal level	Two 7 segment digits
Detection threshold	Two 7 segment digits
Digital Output	Auto-Detect PNP / NPN
Output Function	NO/NC selectable
Analog Output	0...5V
Power indicator	Green LED
Detect indicator	Red LED
Programming indicator	Yellow LED
Data retention	EEPROM non—volatile memory
Supply Voltage	24V DC
Circuit protection	Reverse polarity, short-circuit protection, overload protection
Operating temperature	-20°C...55°C
Storage temperature	-20°C...70°C
Housing material	Metal alloy
Certification	<b>CE</b>

Indicators	7-Segment display	LED
	Green LED	Power
	Red LED	Detect
	Yellow LED	Program

M12 Connector	Pin 1	Power to 24VDC
	Pin 2	Discrete output PNP/NPN NO/NC
	Pin 3	Ground
	Pin 4	Analog output 0 to 5V DC
	Pin 5	Remote LOCK/UNLOCK input

## Features

- Small spot size
- High sensitivity and high resolution
- Fast response
- Display range 00-99
- Adjustable gain
- Analog output
- PNP/NPN discrete output

## Accessories



Mounting Bracket



Laser position sensor



Equipped with cable

## Product application

- Pharmaceutical containers
- Food packaging
- Personal care products
- HDPE containers
- LDPE containers
- Composite films
- Blow molded products
- Paper products



# Light Measurement Sensor



## Features

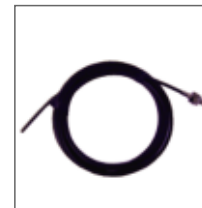
- High sensitivity and high resolution
- Fast response
- Display range 00-99
- Adjustable gain
- Analog output
- PNP/NPN discrete output
- Remote lock
- Replaceable fiber optic assembly

## Specification

Model name	<b>CPEM-XMHAN-E5</b>
Normal operating mode	Displays relative light source intensity User sensitivity adjustment
Calibration	Set detection level
Threshold	Set undetect level 1-9 steps below threshold
Hysteresis level	Set normally open or normally closed
Discrete output	Set minimum output period 10...90mS
Output pulse stretch	Lock/unlock pushbutton controls
Teach mode	Auto-set detection threshold

Optical input	2.2mm PMMA fiber optic
Fiber optic cable length	2 m
Receiver Spectral Response	350...1000nm
Response time	<150µs
Switching Frequency	6 kHz
Relative intensity display range	00 ... 99
Sensitivity	Adjustable
Signal level	Two 7 segment digits
Detection threshold	Two 7 segment digits
Digital Output	Auto-Detect PNP / NPN
Output Function	NO/NC selectable
Analog Output	0...5V
Power indicator	Green LED
Detect indicator	Red LED
Programming indicator	Yellow LED
Dimensions	51mm x 61mm x 25mm
Weight	95g
Supply Voltage	10...24 VDC
Operating Current	60 mA
Circuit protection	Reverse polarity, short-circuit protection, overload protection
Operating temperature	-20°C...55°C
Storage temperature	-20°C...70°C
Housing material	Metal alloy
Protection degree	IP67
Certification	CE

## Accessories



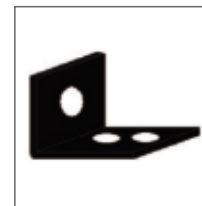
Fiber optic cable, 2m



Mounting Bracket



Equipped with cable



Fiber optic bracket

## Product application

- Automated testing processes
- Verify light source on/off
- Monitor brightness of light sources
- Use filters for color applications

Indicators	7-Segment display	LED
	Green LED	Power
	Red LED	Detect
	Yellow LED	Program

M12 Connector	Pin 1	Power to 24VDC
	Pin 2	Discrete output PNP/NPN NO/NC
	Pin 3	Ground
	Pin 4	Analog output 0 to 5V DC
	Pin 5	Remote LOCK/UNLOCK input

# Label Sensor



## Features

- Fast and easy teach-in
- Remote teach-in
- Output status indicator
- PNP or NPN output
- Light-on/dark on connections
- M8 connector
- Key lock

## Specification

Model name	<b>PU03-TDEB-E3/E3 1001</b>
Operating mode	The PU03 is in operating mode in detect and undetect state
Teach - standard	One press sets switching point for standard labels
Teach – thin	Two presses sets switching point for low contrast labels
Teach – custom	High sensitivity for nearly clear labels
Green LED ON	Gap detected
Red LED ON	Teach key locked
Red/green flashing	Output short circuit condition
Light source	High intensity IR min.100,000 hours
Fork width	3mm
Minimum gap or label size	2mm
Response time	<40µs
Switching Frequency	12.5kHz
Controls	Teach-in key
Light ON/Dark ON control	By connections
Digital Output	PNP / NPN, 100mA
Detect indicator	Green LED
2-press teach indicator	Yellow LED
Key lock indicator	Red LED
Fault indicator	Flashing red/green
Programming indicator	Yellow/green LED
Data retention	EEPROM non—volatile memory
Dimensions	38mm x 80mm x 12mm
Weight	95g
Supply Voltage	10...30 VDC
Consumption Current	40mA
Circuit protection	Reverse polarity, short-circuit protection, overload protection
Operating temperature	-20°C...55°C
Storage temperature	-20°C...70°C
Connector	M8, 4 pin
Housing material	Plastic
Protection degree	IP65
Certification	<b>CE</b>

## Accessories



Industry standard connector, wiring and mounting configuration

## Product application

- Label applicator machines
- Label counting
- Double sheet detection
- Mark detection on translucent film
- Splice detection
- Winder, re-winder
- Label registration
- High-speed dispensing

Indicators	Green LED	Detect
	Red LED	Key lock

M8 Connector	Pin 1	Power
	Pin 2	Remote Teach
	Pin 3	Power
	Pin 4	Discrete output PNP/NPN



360°SERVICE  
comprehensive scheme for the sensor  
**VALUE**  
TECHNOLOGY  
QUALITY

## Focus on global market, high-tech products

Try to build Lanbao to be a leading sensor and industrial automation group.

Mark sensors widely used in the printing, packing equipment, achieved to distinguish colors, detection the mark. Otherwise, it is work together with other device in order to achieve automatic positioning, length, color vision, cutting, deviation correction, counting and other functions.



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