

# CR200EI

## Color Sensor

The CROMLAVIEW® CR200EI color sensor processes colors in a perceptual way (i.e. according to human perception). The two channels allow for applications that demand high standards of the sensor technology. By using the second color sensor channel this sensor can be used in different modes of operation.

For easy integration in industrial automation, the CR200EI has been equipped with an EtherNet/IP interface. This interface is frequently used for the control of sensors and actuators in production engineering. The control itself is performed by a central control (SPS), which often plays an important role in standard diagnostic options.

In the dual channel mode the sensor can be operated as two single sensors, which work with the same gain and illumination intensity.

With the activated stabilization function (CROMLASTAB®) the sensor can be used with an external stabilization target as a single channel sensor. The symmetric design of the sensor facilitates very high drift stability against age and temperatures.

In the color difference mode, compliance and synchronism between the two sensing channels are crucial. The balancing method CROMLABALANCE® is available for this purpose. It allows for simple and effective channel balancing over the client's entire color space.



### Key Features

- Two color sensing channels
- Color differences can be detected and displayed
- Up to 100 colors, respectively color differences can be stored
- Quick response time from 50  $\mu$ s
- 12 channels, with binary encoding up to 4096 output combinations
- Finest color differences can be detected ( $\Delta E < 1$ )
- Standard interfaces: USB, RS232, 12 push-pull outputs (24 V/100 mA)
- Field bus interface: EtherNet/IP
- PC software CR-tool for parameterization and visualization of color values

### Applications

- Print mark detection
- Check the presence of assembly parts
- Checking functional and color coatings
- Color inspection for quality assurance
- Sorting tasks

### Options and accessory

- CR-TBox
- Fiber optics
- Optics
- Fiber Spacer
- USB cable

## Technical Data

Sensing channels	2 Sensing channels
Drift stabilization	CROMLASTAB®, can be switched off
Receiving detector	Three range photo diode
Sensitivity	Adjustable by user
Sensitivity steps	8 (1x, 4x, 20x, 40x, 80x, 200x, 400x, 800x)
Receiving signal resolution	3 x 4096 steps
Object illumination	High-power white light LED, Adjustable (4096 steps) Can be switched off
Ambient light compensation	Can be switched off
Standard interfaces	12 Switching outputs 2 Control inputs Serial (RS232) USB
Field bus interface	EtherNet/IP
Displays	22 LEDs for outputs and status
Buttons	3 buttons for Teach-In
Color resolution	$\Delta E_{Lab} < 1$
Response time	$\geq 50 \mu s$ <sup>1)</sup>
On-/Off-Delay	0 ms ... 65535 ms
Hysteresis	0 % ... 250 %
Color output channels	12 (up to 100 at binary encoding)
Protection standard	IP 54
Power supply	18 ... 28 VDC, max 500 mA
Case temperature during operation	-10 °C ... 55 °C
Coupling in signal path	Via optical fiber
Case material	Aluminum, anodized
Case size	100 mm x 70 mm x 30 mm
Weight	Approx. 295 g

<sup>1)</sup> Limited functionality