CR100
Color Sensor

The recognition of finest color differences on surfaces of all kinds is the strength of the CROMLAVIEW® CR100 color sensor. Due to an optical fiber connection the sensor can be adapted to a large number of applications. Thus, the size of the measuring spot and the working distance are variable. Through a sophisticated control concept the sensor can be comfortably be parameterized via buttons. For more complex tasks a PC tool is provided which visualizes all settings and manages the 350 colors that can be stored in the sensor and be exported in a CSV file if required.

The functional principle of the CR100 is based on the three range procedure. The measuring light is assessed with the tristimulus value functions and assigned to the three wave length ranges red, green and blue. Through the assessment with these tristimulus value functions the sensor is able to perceive colors similar to the human eye.

The sensor contains an own white light source clocked with a frequency of up to 10 kHz. Sampling takes place in both, the light and the dark phase. Additive ambient light cannot change the difference between the light and dark phase, so that the sensor is independent from ambient light.

Key Features

- **Up to 350 colors can be stored**
- **Quick response time from 50 µs**
- **4 channels, with binary encoding 15 channels**
- **Long-term stability of color recognition without new teach-in by CROMLASTAB®-technology**
- **Finest color differences can be detected (ΔE < 1)**
- **Easy adjustment to the recognition task through optical fibers and optics**
- **Release of color recognition via trigger**
- **Signal settings and teach-in of colors via buttons**
- **PC software CR-Tool for parameterization and validation of color recognition**

Applications

- Presence check
- Print mark detection in Printing machines, banderoling machines, register controls
- Color inspection in final assembly
- Abrasion measurement
- PET preform inspection

Options and accessory

- CR-COMBox
- CR-TBox
- Fiber optics
- Optics
- Mounting Bracket

Technical Data

Sensing channels	1 Sensing channel
	1 Internal stabilization channel
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	Power white light LED,
	Adjustable (4096 steps)
	Can be switched off
Ambient light compensation	Can be switched off
Standard interfaces	4 Switching outputs
	2 Control inputs
	Serial (RS232)
Displays	9 LEDs for switching outputs and status
Buttons	3 Buttons for Teach-In
Color resolution	$\Delta E_{Lab} < 1$
Response time	$\geq 50\ \mu s$ [1]
On-/Off-Delay (channel specific)	0 ms … 65535 ms
Hysteresis	0 % … 255 %
Color value memory cells	350
Color output channels	4 (up to 15 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	Aluminium, anodized
Case Size	50 mm × 50 mm × 21 mm
Weight	Approx. 80 g

[1] Limited functionality

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