



More Precision

colorSENSOR // Colour Sensors, LED Analyzers





- Colour sensor for fluorescent objects
- 31 colours can be saved
- UV illumination to detect luminescent colours
- Colour and grey scale evaluation
- PC programmable via RS232

Features:

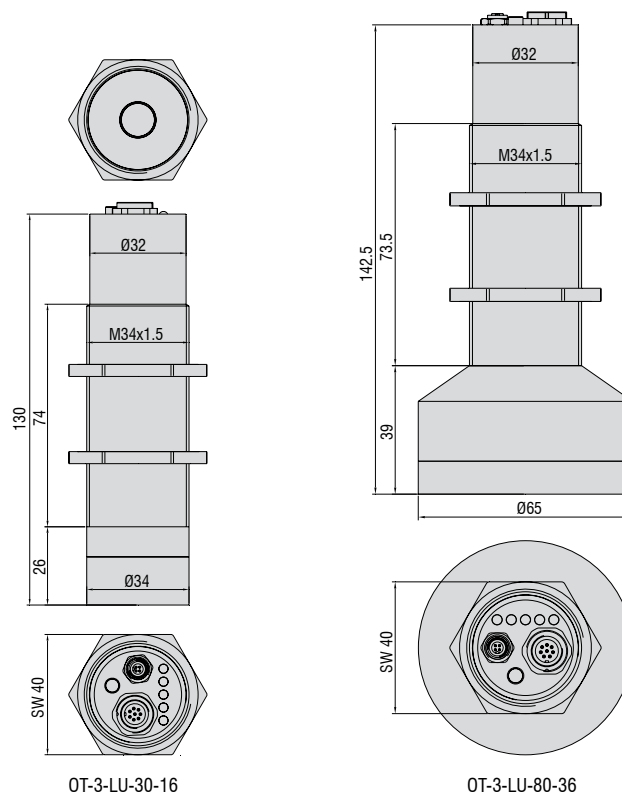
- UV-LED ring with black glass cover, 385nm
- Object distance typ. 10mm - 100mm
- Colour memory: 31 colours via Teach-in and software
- RS232 interface (USB adapter optional)
- Recognition of different luminescent colours
- Insensitive to external light up to 5000Lux
- Switchable brightness readjustment
- Switching frequency max. 30kHz
- A variety of evaluation algorithms can be activated, e.g. „BEST HIT“ mode
- Switching state display via 5 yellow LEDs
- Switchable averaging

Application examples:

- Presence of the applied adhesive
- Detection of safeguarding thread
- Turbidity of liquids

Dimensions:

Dimensions in mm, not to scale



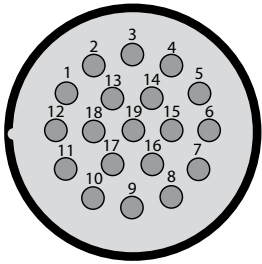
Type	OT-3-LU-30-16	OT-3-LU-80-36
Article number	10234087	10234088
Object distance	typ. 10mm-40mm ideal distance 30mm	typ. 40mm-100mm ideal distance 80mm
Light spot	Ø 8-20mm	Ø 30-40mm
Light spot diameter	Ø 16mm at 30mm	Ø 36mm at 80mm
Colour difference	$\Delta E \geq 0.5$	
Colour spaces	X/Y INT; s/i M (Lab)	
Averaging	more than max. 32768 values	
Size of the colour memory	max. 31 colours in non-volatile EEPROM with parameter sets	
Switching frequency	max. 30kHz (depending on number of colours being taught and the setting for the averaging)	
Reproducibility	in the x,y colour range, 1 digit each with 12-Bit-A/D conversion	
Temperature drift X,Y	< 0.01% /K	
Light source	8x UV-LED, 385nm <small>AC-, DC mode (adjustable or OFF for self-luminous objects, software-switchable)</small>	12x UV-LED, 385nm <small>AC-, DC mode (adjustable or OFF for self-luminous objects, software-switchable)</small>
Type of illumination	UV 385nm, focused	
Effect through illumination	luminescent colours	
Ambient light	to 5000Lux (AC mode)	
Intermittent light operation	AC: typ. 10kHz to 40kHz (depending on amplification level AMP1 to AMP8) DC: switchable by PC software	
Power supply	+24VDC ($\pm 10\%$), inverse polarity protected, overload-proof	
Current consumption	typ. 320mA	
Max. switching current	100mA, short-circuit protected	
TEACH button/inputs	1 button and IN0 for external teaching of the colour references	
Outputs	OUT 0 - OUT 4, digital (0V/+Ub), short-circuit protected, 100mA max. switching current nnp-, pnp-capable (bright or dark switching, switchable)	
Switching state display	visualisation by means of 5 yellow LEDs	
Interface	RS232 (optional USB)	
Type of connector	to PLC: 8-pole flange socket (binder series 712) to PC: 4-pole flange socket (binder series 707)	
Connection cable	to power/PLC: art. no. 11234091 / to PC: art. no 11234095 (RS232); 11234096 (USB).	
Receiver	3-colour filter detector (TRUE COLOR detector, colour filter curve as per CIE 1931)	
Software	colorCONTROL S	
Pulse extension	adjustable 0ms-100ms	
Signal amplification	8 stage (AMP1 - AMP8), adjustable	
Housing material	aluminium, black anodised	
Operating temperature	-20°C - +55°C	
Storage temperature	-20°C - +85°C	
Protection class	IP67 (lens), IP64 (electronics)	
EMC test according	DIN EN 60947-5-2	

colorSENSOR accessories		
Art. no.	description	suitable for:
11234089	CAB-M23-19P-co-fm-straight; 2m-PUR; open ends	colorSENSOR WLCS M-41 (power and PLC)
11234097	CAB-M23-19P-co-fm-straight; 5m-PUR; open ends	colorSENSOR WLCS M-41 (power and PLC)
11234090	CAB-M9-3P-co-straight; 2m-PUR; RS232	colorSENSOR WLCS M-41 (RS232)
11234098	CAB-M9-3P-co-straight; 5m-PUR; RS232	colorSENSOR WLCS M-41 (RS232)
11234091	CAB-M9-8P-co-straight; 2m-PUR; open ends	colorSENSOR LT and OT series (power and PLC)
11234099	CAB-M9-8P-co-straight; 5m-PUR; open ends	colorSENSOR LT and OT series (power and PLC)
11234092	CAB-M9-5P-co-straight; 2m-PUR; RS232	colorSENSOR OT-3-XX-200 (RS232)
11234100	CAB-M9-5P-co-straight; 5m-PUR; RS232	colorSENSOR OT-3-XX-200 (RS232)
11234093	CAB-M9-4P-co-straight; 2m-PVC; RS232	colorSENSOR LT-1-ST; LT-2-XX (RS232)
11234101	CAB-M9-4P-co-straight; 5m-PVC; RS232	colorSENSOR LT-1-ST; LT-2-XX (RS232)
11234094	CAB-M9-4P-co-straight; 2m-PVC; USB	colorSENSOR LT-2-XX (USB)
11234102	CAB-M9-4P-co-straight; 5m-PVC; USB	colorSENSOR LT-2-XX (USB)
11234095	CAB-M5-4P-co-straight; 2m-PUR; RS232	colorSENSOR LT-1-LC-20; LT-3; OT-3 series (RS232)
11234103	CAB-M5-4P-co-straight; 5m-PUR; RS232	colorSENSOR LT-1-LC-20; LT-3; OT-3 series (RS232)
11234096	CAB-M5-4P-co-straight; 2m-PVC; USB	incl. RS232 to USB adapter suitable for: colorSENSOR LT-1-LC-20; LT-3; OT-3 series (USB)
11234104	CAB-M5-4P-co-straight; 5m-PVC; USB	incl. RS232 to USB adapter suitable for: colorSENSOR LT-1-LC-20; LT-3; OT-3 series (USB)
11234368	CAB-M5-4P-co-straight; 2m-PVC; RJ45-co-fm-Eth	incl. RS232 to Ethernet adapter suitable for: colorSensor LT-1-LC-20; LT-3; OT-3 series (Ethernet)
11234274	reflectance standard 1.25" Fluorilon	colorSENSOR and colorCONTROL
11233482	white reference modul	colorSENSOR LT-2-DU
2420065	PS2030 power supply 24V/24W/ 1A; 2m-PVC; terminal-2P-co-fm-straight	Power supply of all sensors with 24 V DC

colorCONTROL MFA accessories		
Art. no.	description	suitable for:
10814105	POF-2.2mm plastic fibre optic cable	colorCONTROL MFA
11251112	thread fitting; LWL; M4	POF-2.2
11251113	lens optic 6mm	thread fitting; LWL; M4
11253931	thread fitting; 3mm lens; LWL; M4	POF-2.2
11254108	thread fitting; 90° optics; LWL; M5	POF-2.2
11253959	reducer sleeve 2.2/1mm POF; 2 pcs.	colorCONTROL MFA for use of POF-1mm
10813842	POF-1mm fibre optic cable	colorCONTROL MFA in connection with the reducer sleeve 2.2/1mm POF
11253906	guide sleeve 1mm	POF-1mm
10824431	guide sleeve 1 mm x 50 mm	POF-1mm
11234305	CAB-M8-4P-co-fm-straight; 2m-PUR; open ends	colorCONTROL MFA-1 (power and PLC)
11234306	CAB-M8-4P-co-fm-straight; 5m-PUR; open ends	colorCONTROL MFA-1 (power and PLC)
11294205	CAB-M9-2P-co-fm-straight; 2m-PUR; open ends	colorCONTROL MFA-5 (power)
11294206	CAB-M9-2P-co-fm-straight; 5m-PUR; open ends	colorCONTROL MFA-5 (power)
11234094	CAB-M9-4P-co-straight; 2m-PVC; USB	colorCONTROL MFA-5 (USB)
11234102	CAB-M9-4P-co-straight; 5m-PVC; USB	colorCONTROL MFA-5 (USB)
11234095	CAB-M5-4P-co-straight; 2m-PUR; RS232	colorCONTROL MFA-5 (RS232)
11234103	CAB-M5-4P-co-straight; 5m-PUR; RS232	colorCONTROL MFA-5 (RS232)
11294243	assembly kit MFA-10	colorCONTROL MFA-5 + MFA-5-M
11294244	assembly kit MFA-15	colorCONTROL MFA-5 + 2 x MFA-5-M
11294245	assembly kit MFA-20	colorCONTROL MFA-5 + 3 x MFA-5-M
11294203	CAB-socket board-6P-co-fm-straight; 2m-PVC; 2P-open ends	colorCONTROL MFA-5-P (power)
11294054	CAB-socket board-6P-co-fm-straight; 1m-PVC; USB	colorCONTROL MFA-5-P (USB and power)
11294204	CAB-socket board-4P-co-fm-straight; 2.5m-PVC; RS232	colorCONTROL MFA-5-P (RS232)

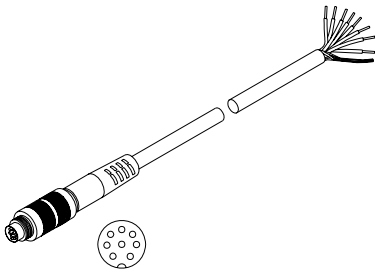
Pin assignment

CAB-M23-19P-co-fm-straight; Xm-PUR; open ends
(Art. no.: 11234089; 11234097)



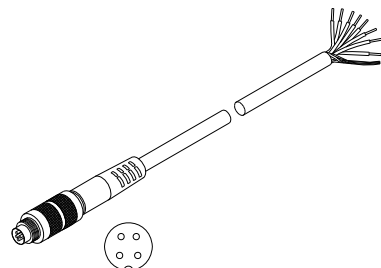
Pin	Colour	WLCS-M-41
1	green	IN TF
2	grey	OUT Int. OK
3	pink	n.c.
4	red	OUT 4
5	white	OUT 2
6	blue	GND (0V)
7	violet	n.c.
8	grey/pink	n.c.
9	red/blue	IN HOLD
10	white/green	IN 1
11	brown/green	IN 2
12	yellow	PE
13	white/yellow	Common
14	-	-
15	black	OUT 1
16	yellow/brown	OUT 3
17	white/grey	IN 3
18	grey/brown	IN 4
19	brown	+24V DC (±10%)

CAB-M9-8P-co-straight; Xm-PUR; open ends
(Art. no.: 11234091; 11234098)
Connection cable to power/PLC or digital I/O
(max. length. 10m, sheath PUR)



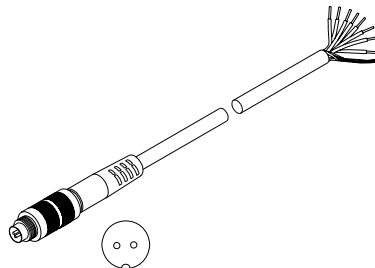
Pin	Colour	LT-1- LC-10 / ST	SB1 LT-2- ST/DU	SB2 LT-2- ST/DU	LT-1-LC-20 LT-3-XX/OT-3-XX
1	white	OUT 0	OUT 0 / OUT A 0	OUT 1	GND (0V)
2	brown	OUT 1	OUT 1 / OUT A 1	OUT 2	+24V DC (±10%)
3	green	IN 1	IN 1	OUT 3	IN 0
4	yellow	IN 0	IN 0	OUT 4	OUT 0
5	grey	n.c. / OUT 4	CLK (OUT K)	OUT 5	OUT 1
6	pink	OUT 3	OUT 2 / OUT A 2	OUT 6	OUT 2
7	blue	GND (0V)	GND (0V)	OUT 7	OUT 3
8	red	+24V DC (±10%)	+24V DC (±10%)	OUT 0	OUT 4

CAB-M8-4P-co-fm-straight; Xm-PUR; open ends
(Art. no.: 11234305; 11234306)
Connection cable to power/PLC
(max. length 5m, sheath PUR)



Pin	Colour	MFA-1
1	brown	+ 24V DC
2	white	Extern Teach
3	blue	GND
4	black	NPN/PNP

CAB-M9-2P-co-fm-straight; Xm-PUR; open ends
(Art. no.: 11294205; 11294206)
Connection cable to power
(max. length. 10m, sheath PUR)



Pin	Colour	MFA-5
1	white	+24V DC
2	brown	GND

High performance sensors made by Micro-Epsilon



Sensors and systems for displacement and position



Sensors and measurement devices for non-contact temperature measurement



2D/3D profile sensors (laser scanner)



Optical micrometers, fibre optic sensors and fibre optics



Colour recognition sensors, LED analyzers and colour online spectrometer



Measurement and inspection systems