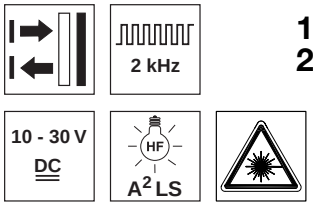
HRTL 8 Laser diffuse reflection light scanner with background suppression

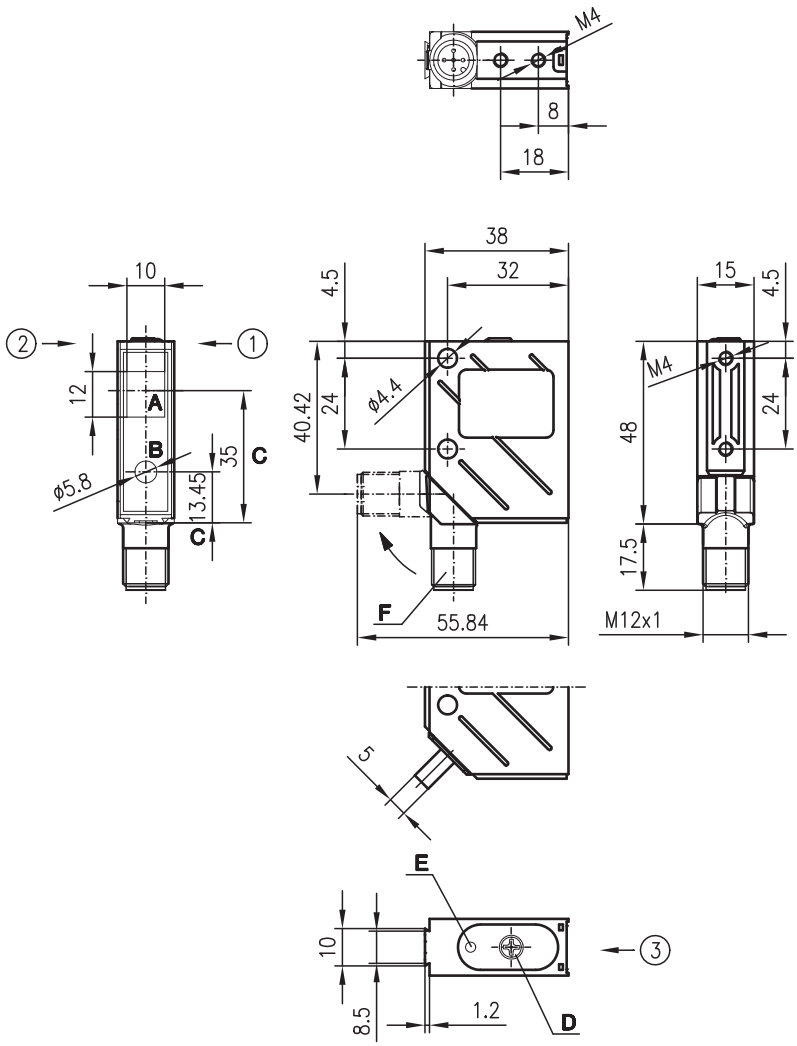
en 09-2011/08 50115719-01



10 … 200mm
25 … 200mm

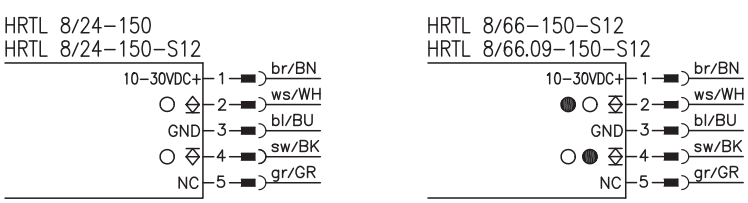
- Laser, red light, laser class 1 and 2
- Adjustable background suppression
- A²LS - Active Ambient Light Suppression
- Push-pull switching outputs
- M12 turning connector or cable connection

Dimensioned drawing



A Receiver
B Transmitter
C Optical axis
D Operational control
E Yellow LED
F Turning connector, 90°
Preferred entry direction for objects ① + ② + ③

Electrical connection



Accessories:

(available separately)

- M12 connectors (KD …)
- Ready-made cables (K-D …)
- Mounting systems
- Control guard

Specifications

		Laser class 2	Laser class 1
Optical data			
Typ. scanning range limit (white 90 %) [1]		10 … 200 mm	25 … 200 mm
Scanning range [2]		see tables	
Mechanical adjustment range		50 … 200 mm	50 … 200 mm
Light beam characteristic		focussed	
Beam spread		≥ 0.5 mrad	
Light source		laser	
Wavelength		670 nm (visible red light)	
Max. output power		2.6 mW	1.24 mW
Pulse duration		≤ 8 µs	≤ 8 µs
Timing			
Switching frequency		2000 Hz	
Response time		0.25 ms	
Delay before start-up		≤ 100 ms	
Electrical data			
Operating voltage U_B [3]		10 … 30 VDC	
Residual ripple		≤ 15 % of U_B	
Open-circuit current		≤ 35 mA	
Switching output/function	…/24	PNP and NPN transistor output, light switching	
	…/66	2 push-pull switching outputs [4] pin 2: PNP dark switching, NPN light switching pin 4: PNP light switching, NPN dark switching	
Signal voltage high/low		≥ (U_B-2 V)/≤ 2 V	
Output current		max. 100 mA	
Scanning range adjustment		mechanical via multiturn potentiometer	
Indicators			
Yellow LED		object detected	
Mechanical data			
Housing		metal	
Optics cover		glass	
Weight (plug/cable)		70 g/140 g	
Connection type		M12 connector, 5-pin or cable: 2000 mm, 5 x 0.25 mm²	
Environmental data			
Ambient temp. (operation/storage)		-10 °C … +40 °C/-40 °C … +70 °C	
Protective circuit [5]		2, 3	
VDE safety class [6]		II, all-insulated	
Protection class [7]		IP 67, IP 69K [8]	
Laser class		2 (acc. to EN 60825-1)	1 (acc. to EN 60825-1)
Standards applied		IEC 60947-5-2	
Certifications		UL 508 [3]	

1) Typ. scanning range limit: max. attainable range without performance reserve
2) Scanning range: recommended range with performance reserve
3) For UL applications: for use in class 2 circuits according to NEC only
4) The push-pull switching outputs must not be connected in parallel
5) 2=polarity reversal protection, 3=short-circuit protection for all outputs
6) Rating voltage 250 VAC
7) In stop position of the turning connector (turning connector locked)
8) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test

- **Approved purpose**:
  This product may only be used by qualified personnel and must only be used for the approved purpose. This sensor is not a safety sensor and is not to be used for the protection of persons.

Order guide

	Designation	Part No.
Laser class 2		
With M12 connector	HRTL 8/24-150-S12	50038482
With 2 m cable	HRTL 8/24-150	50038483
With M12 connector	HRTL 8/66-150-S12	50102704
Laser class 1		
With M12 connector	HRTL 8/66.09-150-S12	50115688

Tables

Laser class 2:

1	10	150	200
2	25	148	190
3	30	143	175

Laser class 1:

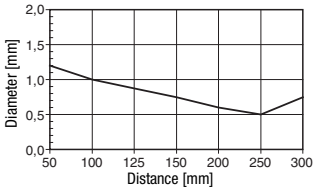
1	25	150	200
2	45	140	185
3	50	130	170

1	white 90 %
2	gray 18 %
3	black 6 %

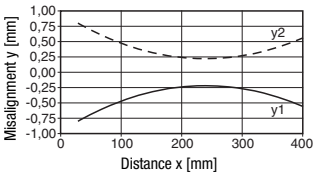
Scanning range [mm]
Typ. scanning range limit [mm]

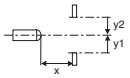
Diagrams

Typ. light spot



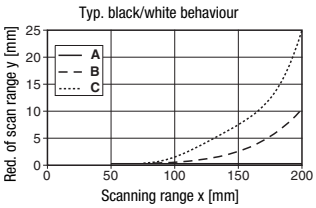
Typ. response behaviour (white 90 %)





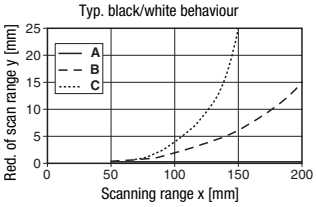
Laser class 2:

Typ. black/white behaviour

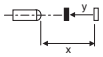


Laser class 1:

Typ. black/white behaviour



A white 90 %
B gray 18 %
C black 6 %



Remarks

- Install sensor inclined at angle of approx. 10° if used to detect objects with shiny surfaces.