

EXCELLENT VALUE FOR DEMANDING
APPLICATIONS

CUBIC SMALL

PHOTOELECTRIC SENSORS

KEY ADVANTAGES

- ✓ Small sensor series with outstanding performance, 40 mm x 50 mm x 15 mm
- ✓ Ecolab tested and approved
- ✓ Sensing face of coated plastic
- ✓ Color sensor
- ✓ Contrast sensor for precise print mark detection
- ✓ IO-Link interface

RANGE OVERVIEW	Distance mm	Diffuse	Reflex	Through- beam	Background suppression	Color	Contrast
CUBIC SMALL	12						p. 237
	30 ... 40					p. 237	
	500				p. 233		
	1200	p. 233					
	4000		p. 234				
	50,000			p. 234			

OVERVIEW

	4050
Housing material	PBTP
Hysteresis	$\leq 10 \% s_n$
Degree of protection	IP 67
Supply voltage range	10 ... 36 VDC
Ambient temperature range	-5 ... +55 °C / 23 ... +131 °F
Output current (total of both outputs)	$\leq 200 \text{ mA}$
Output voltage drop	$\leq 2 \text{ V}$
Max. ambient light halogen	5000 Lux
Max. ambient light sun	10,000 Lux
Compatible mounting bracket	See page 246

HOUSING SIZE MM

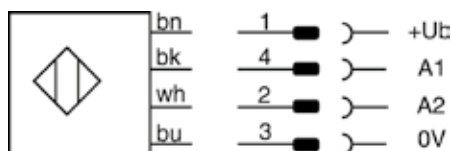
OPERATING PRINCIPLE

SENSING RANGE MM

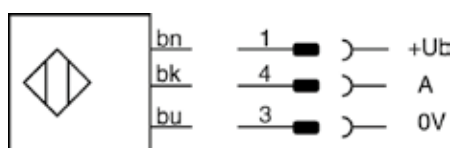
PHOTOELECTRIC

WIRING DIAGRAMS

PNP/NPN Changeover



Emitter



DATA

Standard target
No-load supply current
Emitter
Max. switching frequency
Switching time
Setup
PNP Changeover
NPN Changeover
Other types available

CUBIC SMALL

□ 40 X 50 X 15

DIFFUSE SENSOR WITH
BACKGROUND SUPPRESSION

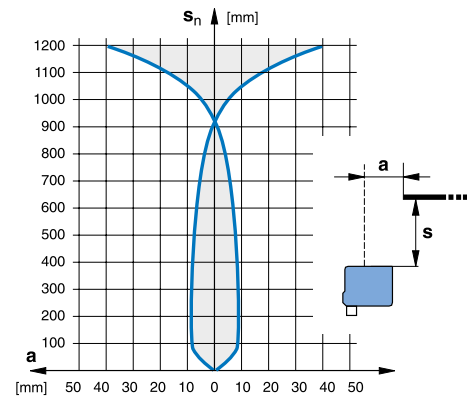
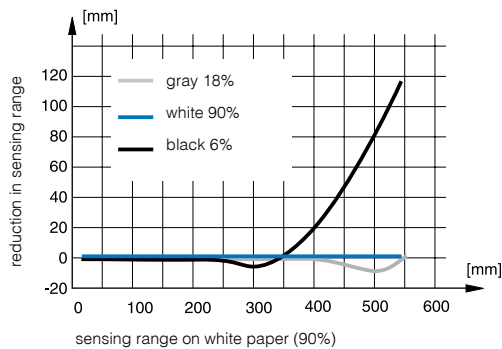
30 ... 500



□ 40 X 50 X 15

DIFFUSE SENSOR

1200



100 x 100 mm white

≤ 30 mA

LED red 630 nm

500 Hz

1 msec

Potentiometer

LHS-4150-103

LHS-4150-101

Cable version

200 x 200 mm white

≤ 25 mA

LED red 630 nm

1500 Hz

0.5 msec

Potentiometer

LTS-4150-103

LTS-4150-101

Cable version

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

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CUBIC SMALL

HOUSING SIZE MM

□ 40 X 50 X 15

□ 40 X 50 X 15

OPERATING PRINCIPLE

REFLEX SENSOR

THROUGH-BEAM SENSOR

SENSING RANGE MM

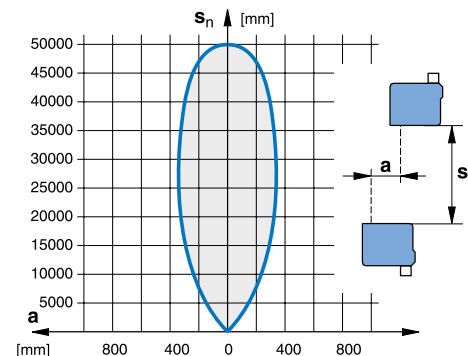
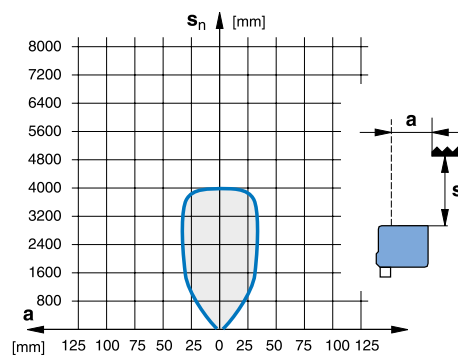
4000

50,000

PHOTOELECTRIC



AUTOCOLLIMATION



DATA

Standard target/Reflector type

LXR-0000-084 (see page 247)

No-load supply current

≤ 20 mA

Emitter

LED red polarized 680 nm

Max. switching frequency

1500 Hz

Switching time

0.5 msec

Setup

Potentiometer

PNP Changeover

LRS-4150-103

Emitter

Potentiometer (receiver)

LLS-4150-003 (receiver)

LLS-4150-000

Other types available

NPN Changeover, PNP/NPN Light-ON
+ Excess gain

NPN Changeover, PNP/NPN Light-ON
+ Excess gain



OVERVIEW



HOUSING SIZE MM

OPERATING PRINCIPLE

SENSING RANGE MM

	4050 COLOR	4050 CONTRAST
Housing material	PBTP	PBTP
Average positioning tolerance	± 5 mm (tol. 3)	± 2 mm (min.)
Degree of protection	IP 67	IP 67
Supply voltage range	10 ... 30 VDC	10 ... 30 VDC
Ambient temperature range	-5 ... +55°C / 23 ... +131°F	-5 ... +55°C / 23 ... +131°F
Output current	≤ 200 mA	≤ 100 mA
Output voltage drop	≤ 2 V	≤ 2.5 V
Switching frequency	4000 Hz	10,000 Hz
Switching time	0.4 msec	50 µsec (micro)
Max. ambient light halogen	5000 Lux	5000 Lux
Max. ambient light sun	10,000 Lux	10,000 Lux
Compatible mounting bracket	See page 246	See page 246

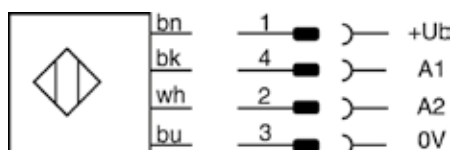
PHOTOELECTRIC

WIRING DIAGRAMS

3 X PNP Light-ON



PUSH-PULL + Teach / Switching mode selector



DATA

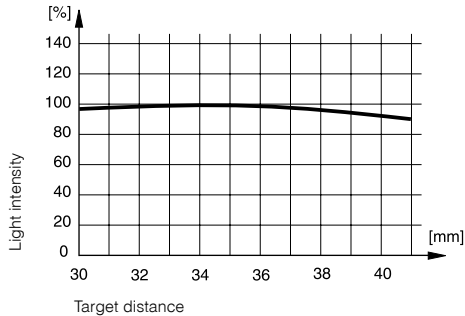
Light source
Light spot size (distance)
No-load supply current
Setup
3xPNP Light-ON
PUSH-PULL / IO-Link
Other types available

CUBIC SMALL

□ 40 X 50 X 15

COLOR SENSOR (DIFFUSE)

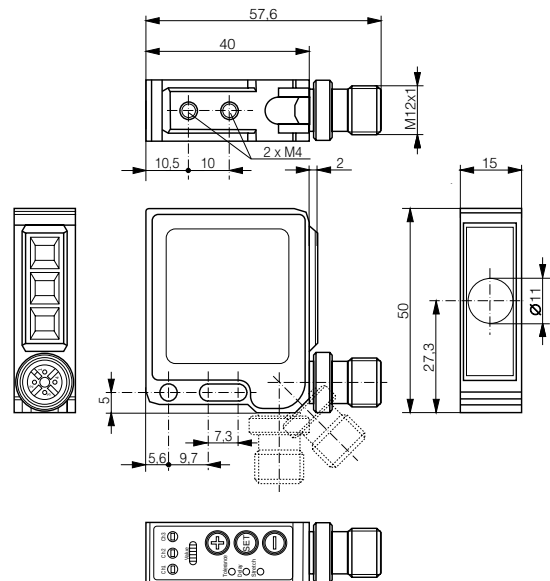
30 ... 40



□ 40 X 50 X 15

CONTRAST SENSOR (DIFFUSE)

12



LED white

Ø 4 mm (35 mm)

≤ 35 mA

Teach button

FTS-4155-303

Cable version

LED red, green, blue (autoselect)

1.5 x 3.5 mm (12 mm)

≤ 35 mA

Teach button / Teach input / IO-Link

KTS-4155-407

Cable version

Inductive

Photoelectric

Ultrasonic

Capacitive

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