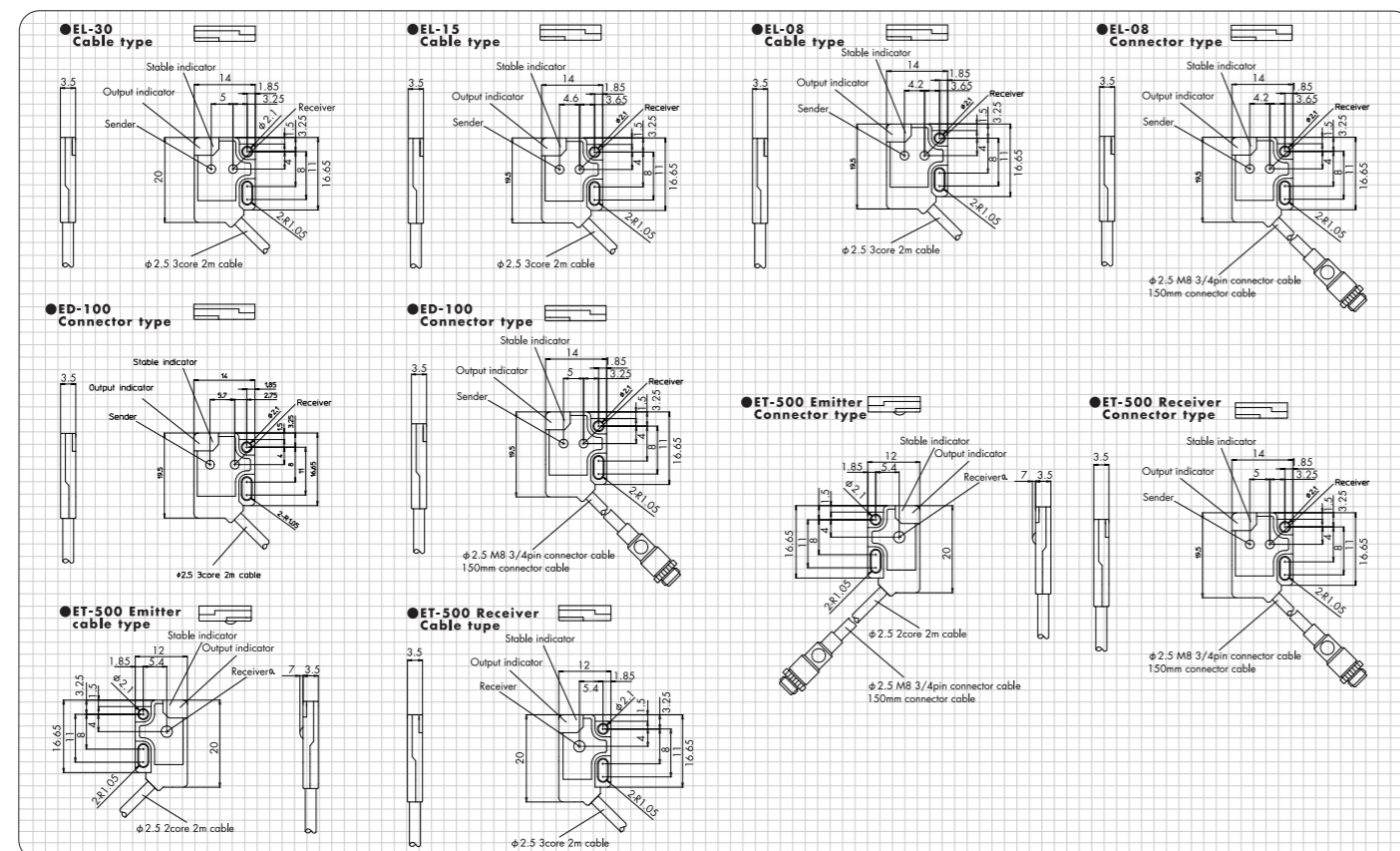


## Specifications

Items		Diffuse 100mm	30mm	Convergent 15mm	8mm	Thru-beam 500mm
NPN Type	Light ON	2m cable M8 Pig tail - 3 pins M8 Pig tail - 4 pins	ED-100NL ED-100NL3 ED-100NL4	EL-30NL EL-30NL3 EL-30NL4	EL-15NL EL-15NL3 EL-15NL4	EL-08NL EL-08NL3 EL-08NL4
	Dark ON	2m cable M8 Pig tail - 3 pins M8 Pig tail - 4 pins	ED-100ND ED-100ND3 ED-100ND4	EL-30ND EL-30ND3 EL-30ND4	EL-15ND EL-15ND3 EL-15ND4	EL-08ND EL-08ND3 EL-08ND4
	Light ON	2m cable M8 Pig tail - 3 pins M8 Pig tail - 4 pins	ED-100PL ED-100PL3 ED-100PL4	EL-30PL EL-30PL3 EL-30PL4	EL-15PL EL-15PL3 EL-15PL4	EL-08PL EL-08PL3 EL-08PL4
PNP Type	Dark ON	2m cable M8 Pig tail - 3 pins M8 Pig tail - 4 pins	ED-100PD ED-100PD3 ED-100PD4	EL-30PD EL-30PD3 EL-30PD4	EL-15PD EL-15PD3 EL-15PD4	EL-08PD EL-08PD3 EL-08PD4
	Power Supply	DC12 ~ 24V ± 10% Inc. 10% ripple				
	Current Consumption	20mA Max				
Distance	100mm					
Spot Size	5 ~ 30mm					
Objects	2 ~ 15mm					
Response time	3 ~ 8mm					
Hysteresis	Not restricted					
Output	opaque object					
Environmental Illumination	Sunlight	20%				
	Incandescent lamp	NPN or PNP Open collector 50mA/DC30V max.				
Environmental Temperature		10,000 lx Max				
		3,000 lx Max				
Environmental Humidity		-25 ~ +55 °C				
		35 ~ 85%				
Storage conditions	-40 ~ +70 °C / 35 ~ 95%					
Noise Resistance	EMC (CE sign)	EN60947-5-2:1998 (Immunity) EN60947-5-2:1998 (radiation)				
Vibration Resistance		10 ~ 55Hz, 1.5mm, X, Y, Z each for 2 hours				
Shock Resistance		1000m/s <sup>2</sup> X, Y, Z each for three times				
Protection category		IP67				
Warm-up time		15ms				
Indicator LED	Stable Sensing	Red LED(650nm)				
	Output	Green LED				
	Power	Orange LED				
Mode selector		Light ON or Dark ON				
Connector	Cable	2m cable, φ2.5mm 3 cores (2 cores for emitter) / M8 Pigtail 150mm				
Circuit Protection	Over current	available				
	Reverse Polarity	available				
	Short circuit	available				
Plastic material	Case	PC				
	Lens and cover	PC				
Conformity	UL	cRU recognition				
	CE	CE sign				

## Dimensions



**OPTEX  
FA**

*Leading Edge of Miniature Type Photosensor.  
M8 connector Pig-tail type,  
unique mounting holes for flexibility.*

Lead-free mechanics !!

0.5 msec fast response for all the types.

3 different kind of Convergent Types are available.

**Miniature  
Photosensor**

**E  
SERIES**

ET Series Thru-beam type

ED Series Diffuse Reflective Type

EL Series Convergent Type



M8 connector Pig-tail

**OPTEX  
FA**

**OPTEX FA CO., LTD.**  
46-1 Takehanadounomae-cho Yamashina-ku Kyoto 607-8085 Japan  
TEL +81-75-594-8123 FAX +81-75-594-8124

74539-01-0404

# Miniature Flat Shape Sensor E Series

M8 Pig-tail connector for easy maintenance.  
 Standards cable type are also available with 2 meter cable length.  
 Everythings is packed here in this miniature design of mechanics.



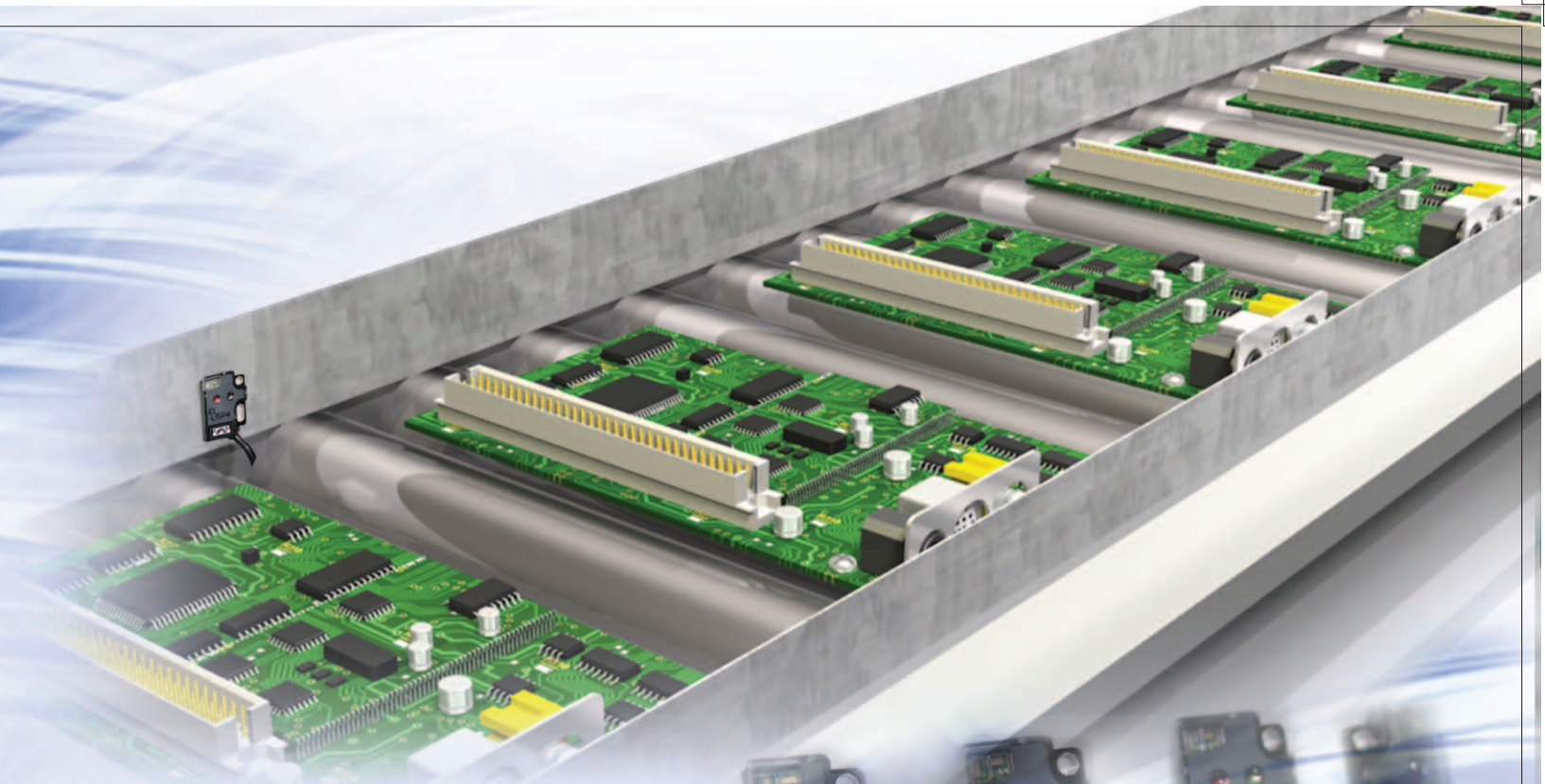
M8 Pig tail Type



Cable Type



Flexible pitch of mounting hole





**EL series**  
**Convergent Type**

3 different kinds of sensing distance are available;  
 30mm, 15mm, and 8mm for close installation.  
 Compact housing is ideal for space saving.




▽M8 Pigtail

**3 kinds of distance**




**ED series**  
**Diffuse Reflective Type**

Standard diffuse reflective type of optical system  
 giving long distance as 100mm sensing distance.




▽M8 Pigtail

**100mm sensing!**



**ET series**  
**Thru-Beam Type**

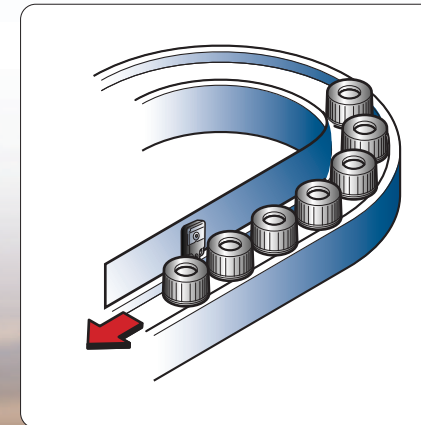
0.5msec response and sharp optical system  
 designed in 12 X 20 X 22 mm dimensions.



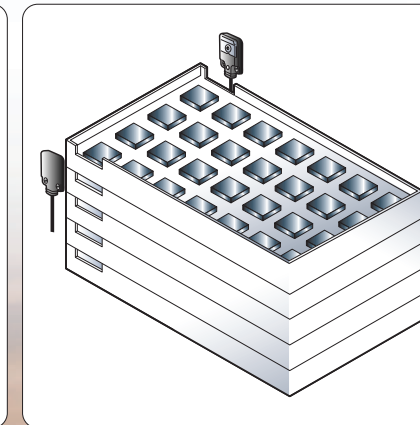
▽M8 Pigtail

**Small dimensions!**

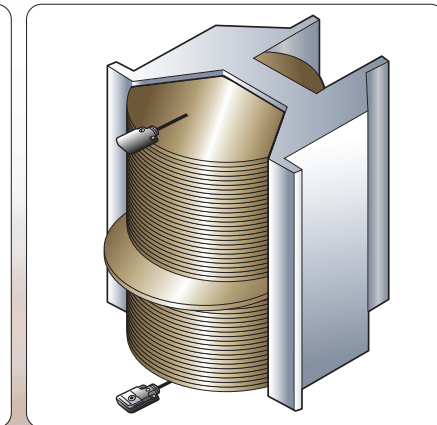
## Good for any kind of applications that will need space saving



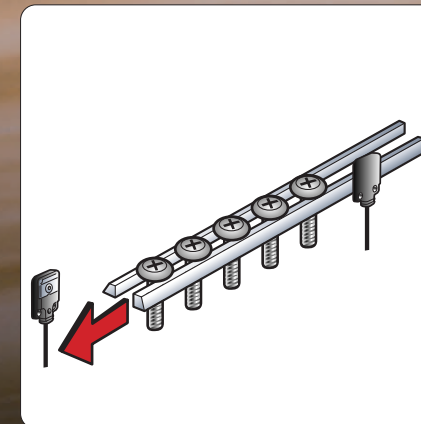
**In the limited space**  
 EL series, flat type convergent type is ideal for flat installation in limited space.



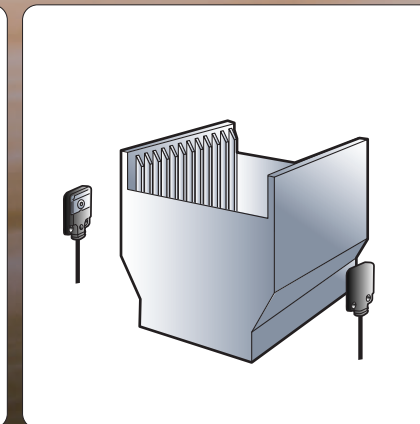
**Disposition of IC in the cassette rack**  
 ET series detecting 50 - 100 cm distance will watch if IC is properly stored in each cassette in the rack. Both Side-view and Flat type are available for your best way of installation.



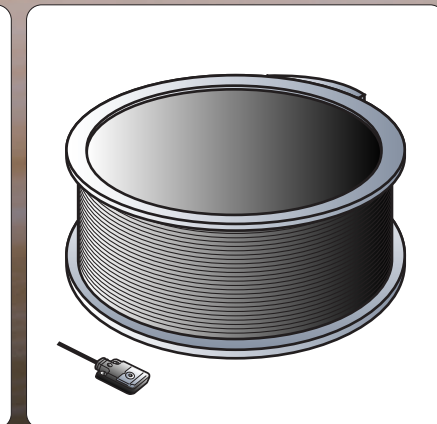
**Disposition of Wafer**  
 ET series detecting 1 meter distance through-beam type will be good to detect disposition of wafer. RED Led is convenient for optical axis adjustment.



**Screws on the parts feeder**  
 ET series Flat type will be convenient for flexible installation in the limited space.



**Wafer Cassette Rack**  
 ET series Side-view type with Slit E-300 and Sensitivity Controller S-10. It's possible to detect stably if there were inconsistency in the cassette resin or in individual unit.



**Wafer Cassette positioning**  
 ET series Flat Type is ideal. It's only 3.5mm thickness sensor being able to be installed in small gap or in limited space.