EX-QS Wafer Mapping Sensor

CYBEROPTICS SEMICONDUCTOR

The EX-QS is an EX-Q wafer mapping sensor repackaged in a smaller case to accommodate applications where space is limited, or where a smaller sensor footprint is desired. The EX-QS enables reliable detection of semiconductor wafers and slotting errors in cassettes or FOUPs. It can be used with mixed wafer batches, for example dark or coated wafers can be combined with bright wafers and it is compatible with flatted or notched wafers of any size including 300mm.

Key Features

EX-Q performance - excels at detecting dark or coated wafers at factory gain setting
- Laser transmitters and receivers fine-tuned for maximum sensitivity to perform out of the box

Reliably detects ultra thin and cross-slotted wafers
- Thin laser stripe (0.05mm) combined with multiple apertures and spatial filtering reduce noise and improve mapping accuracy

Insensitive to interference from mapping environment
- Beam geometry and built-in ambient light filter minimize stray reflections and ambient lighting influences

Accommodates all SEMI standard wafers, regardless of size or edge geometry, through patented dual and wide beam technologies

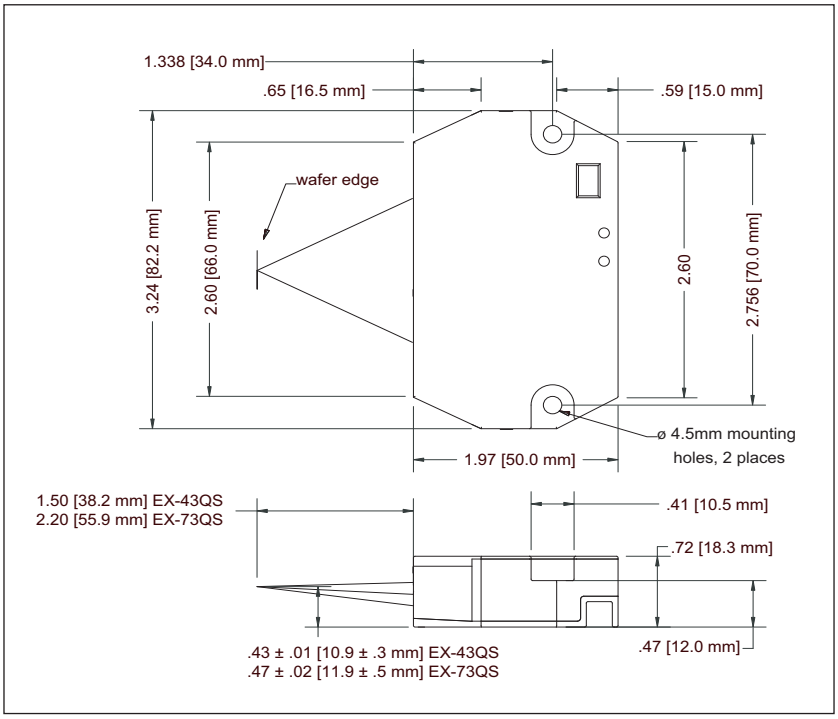
No moving parts that can result in particulate contamination

Two standoff distances
- EX-43QS 1.5"
- EX-73QS 2.2"

EX-QS Specifications

	EX-43QS	EX-73QS
Method of detection	Dual Wide Beam	
Optimum detecting distance	1.5"	2.2"
Maximum detecting range	1.4" to 1.6"	2.05" to 2.35"
Supply voltage	9 to 24 VDC	
Current consumption	130 mA typical, 200 mA max.	
Light source at exit port at CDRH aperture	2 X 850 nm diode lasers 2 X 0.600 mW max. 0.077 mW max.	
Laser class	Class 1 (CDRH)	
Detectable objects	Transparent, opaque and mirror-surfaced objects	
Laser spot size	10mm x 0.05mm	16mm x 0.06mm
Working angle range	± 16 degrees relative to the sensor front surface	± 11 degrees relative to the sensor front surface
Operation	Light-ON/Dark-ON switch, enable switch, gain setting	
Response time	400µs max.	
Minimum pulse width	5 ms	
Indicator	Laser power - RED led, Signal OUT - GREEN led	
Control output	Open collector NPN (low true) or PNP (high true) options. 80mA max.	
Connections	16", 4 conductor cable	
Temperature limits	Operating: 32 to 104ºF (0 to 40ºC) Storage: -20 to 130ºF (-30 to 55ºC)	
Materials	Lenses: glass, plastic; Case: aluminum	

Dimensions



- Careful alignment and adjustment of the sensor is required for optimal performance. Read the instructions before installation. Failure to properly install, align, or use the EX-QS wafer mapping sensor may reduce its performance.
- EX-QS laser photoelectric sensors contain no user-serviceable parts. Refer all servicing to an authorized CyberOptics Semiconductor agent. Semiconductor lasers used in the EX-QS wafer mapping sensor generate Class 1 invisible laser radiation. Avoid looking directly at the laser beam.
- These sensors conform to IEC 60825-1 (2001-08) (laser safety) and to the laser safety requirements of SEMI S2-0200.

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For information about CyberOptics' offices and global support network, please visit www.cyberoptics.com.