



BL-600 Series

Ultra-small Barcode Reader

BL-600 SERIES

LASER BARCODE READER



The BL-600 is one of the world's smallest barcode readers. (31 x 40 x 21 mm)

*The BL-600 is roughly than 1/2 the size of conventional barcode readers but delivers ultra high performance

Microscopic Polygon Mirror and Motor

The BL-600 features an ultra compact polygon mirror. The compact size is achieved by using optical technology developed for high precision measurement.



Preventive Maintenance Information (PMI)

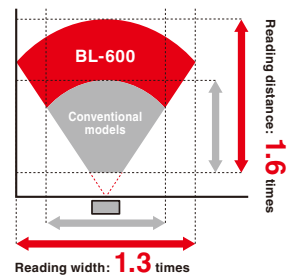
The BL-600 Series is the first barcode reader to feature a PMI function, which prevents reading errors before they occur. This function outputs diagnostic information while the reader is reading barcodes. By examining the information, it is possible to detect problems that may cause reading errors. This unique function is an invaluable tool for acquiring maintenance information or for analysing and finding the cause of reading errors.

Reading data	PMI (Preventive Maintenance Information)
KEYENCE 01 : 0	PMI= 0 : Normal 1 : Caution 2 : Warning 9 : Reading error
KEYENCE 02 : 0	
KEYENCE 03 : 1	
KEYENCE 04 : 0	
KEYENCE 05 : 0	
KEYENCE 06 : 0	

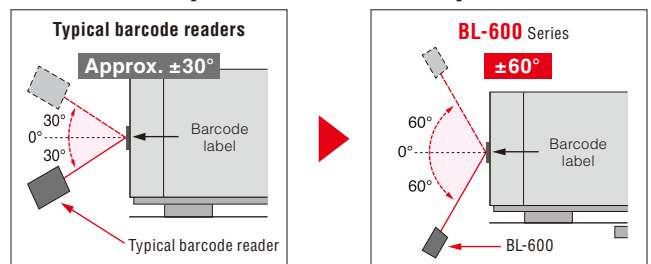
Problem

Superior Reading Performance

Using KEYENCE's exclusive AGC, circuits for advanced high-speed performance, the BL-600 offers excellent reading depth and angle characteristics. The reader also includes built-in SRC circuits that greatly reduce the effects of extraneous reflected light and allows a more reliable and stable reading.



[STABLE READING RANGE]



The BL-600 Series offers greater mounting flexibility.

FRONT-VIEW TYPE

- STANDARD
- BL-600 (Single-scan)
- BL-601 (Raster-scan)
- HIGH-RESOLUTION
- BL-600HA (Single-scan)
- BL-601HA (Raster-scan)

SIDE-VIEW TYPE

- HIGH-RESOLUTION
- BL-650HA (Single-scan)
- BL-651HA (Raster-scan)



Test Button for Easy Adjustment

The test mode allows you to confirm the optimal reading position at the point of installation by simply pressing a button. This valuable feature of the BL-600 results in faster installation and quick maintenance.



Heavy duty construction in an ultra-light package

Thanks to its die-cast magnesium casing, the BL-600 is not only ultra light and compact, but also durable.

Exceptional resistance in severe environments

The highly resistant construction of the BL-600 passes the demanding IP65 environmental specifications for sensors. The BL-600 offers excellent protection in harsh or dirty environments and can be installed in almost any location.

Easy maintenance

The flat reading surface of the BL-600 Series greatly reduces the tedious maintenance often involved with barcode readers.



5-Bar LED Display

The BL-600 indicates the reading ratio (decoding rate/100 scans), in real time, using a five-bar LED display. Current read status can be checked at a glance, helping to prevent read errors before they occur.

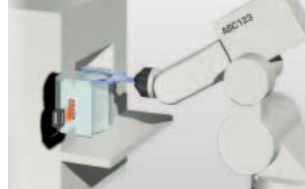
*The reading ratio can be output to a PC.



Reading Status Indicator

Applications

Wafer carriers



Thanks to the AGC function, the BL-600 can reliably read PFA-coated barcode labels even at extreme angles.

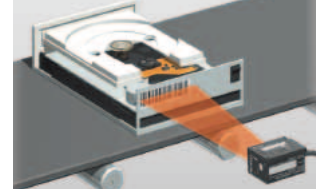
* A special model for a 300 mm wafer load ports (SEMI E15.1 fully supported) is also available.

Medical



With its compact body and high speed reading capability, the BL-600 can easily read the barcodes on medical specimens.

PC media drive



Even with vibrations and unevenness, the BL-600 performs accurately and reliably.

Specifications

Model	BL-600	BL-601	BL-600HA	BL-601HA	BL-650HA	BL-651HA
Type	Standard		High-resolution		High resolution, side type	
Reading direction	Front			Side		
Scanning method ¹⁾	Single	Raster	Single	Raster	Single	Raster
Light source	Visible semiconductor laser (Wavelength: 650 nm)					
Output	1.5 mW					
Pulse duration	FDA: 56 μs, IEC: 65 μs					
Laser class	Class II (FDA CDRH Part1040.10), Class 2 (IEC60825-1)					
Reading distance	75 to 330 mm (When narrow bar width is 1.0 mm)		55 to 190 mm (When narrow bar width is 0.5 mm)		45 to 175 mm (When narrow bar width is 0.5 mm)	
Readable bar width ²⁾	0.19 to 1.0 mm (0.25 to 1.0 mm for CODE 93 and CODE 128)		0.125 to 1.0 mm (0.15 to 1.0 mm for CODE 93 and CODE 128)			
Largest readable label width ³⁾	250 mm (When reading distance is 280 mm)		156 mm (When reading distance is 174 mm)		170 mm (When reading distance is 155 mm)	
PCS	0.6 or more (Reflectance of white part: 75% or more)					
Scanning rate	500 scans/sec					
Target code	CODE39, ITF, Industrial2-of-5, COOP2-of-5, Codabar, CODE128, GS1-128(EAN-128), CODE93, EAN/UPC(A-E)					
Number of readable digits	32 digits max. ⁴⁾					
Trigger input	Non-voltage input (contact, solid-state), TTL input is also possible.					
Serial interface	RS-232C (Refer to the data of BL-700 Serial Interface in page 19 for details.)					
OK/NG output	Output form	NPN				
	Rated load	24 VCD, 30 mA				
	Leakage current (at OFF)	0.1 mA max.				
Environmental resistance	Residual voltage (at ON)	0.5 V max.				
	Enclosure rating	IP65				
	Ambient light	Sunlight: 10000 lux, Incandescent lamp: 6000 lux				
	Ambient temperature	0 to 45°C, No condensation				
	Relative humidity	35 to 85%, No condensation				
Power rating	Operating atmosphere	No dust or corrosive gas present				
	Vibration	10 to 55 Hz, 1.5 mm double amplitude in X, Y, and Z directions, 2 hours respectively				
Power rating	Power supply voltage	5 VCD ±5%				
	Power consumption	330 mA max.				
Weight	Approx. 115 g				Approx. 130 g	

¹⁾ Raster width: BL-601: 7.1 ±1.8 mm (When reading distance is 120 mm), BL-601HA: 5.5 ±1.4 mm (When reading distance is 90 mm), BL-651HA: 5.5 ±1.4 mm (When reading distance is 65 mm)

²⁾ Reading bar width indicates the range of readable narrow bar width when the barcode type is CODE39.

³⁾ Maximum reading label width includes the barcode margin (quiet zone).

⁴⁾ When start/stop character of CODE128 is CODE-C, up to 64 digits are allowed.

Note: The internal BL settings are written to the built-in EEPROM (erasable up to 100,000 times).