## Controller/display unit/operating system environment

### Controller

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Model		LJ-V7001	LJ-V7001P			
No. of connectable sensors		Max. 2 units				
Display Minimum display unit		0.1 μm 0.0004 Mil, 0.00001 mm², 0.01°				
Display	Maximum display range	±99999.9 mm 3937.00", ±999999 mm²				
	Laser remote interlock input	No-voltage input				
	Encoder input	NPN open-collector output, voltage output (5 V/12 V/24 V), and line-driver output all supported				
	Trigger inputs					
	Timing 1, 2 input					
	Auto-zero1, 2 input					
Input terminal block	Reset 1, 2 input	No-voltage input	Voltage input			
	Start measurement/stop input	No-voltage input	voltage input			
	Start storage/stop input					
	Clear memory input					
	Laser OFF input					
	Program switch input	No-voltage input x 4 inputs	Voltage input x 4 inputs			
	Analog voltage output	$\pm 10$ V x 2 outputs, Output impedance: 100 $\Omega$				
	OUT comparator output	NPN open collector output x 12 outputs (Can freely assign 16 OUTs x 3 stage judgment results)	PNP open collector output x 12 outputs (Can freely assign 16 OUTs x 3 stage judgment results)			
Output	Strobe output		PNP open collector output			
Output terminal block	Disable trigger output	NIDNI and an allegation and and				
	Memory FULL output	NPN open collector output				
	Ready output					
	Error output	NPN open collector output (N.C.)	PNP open collector output (N.C.)			
Ethernet interfa	ace	1000BASE-T/100BASE-TX				
USB Interface		USB 2.0 high speed compliant (USB 1.1 Full-SPEED compatible)				
RS-232C interface		Measurement data output and control I/O (Can select a baud rate of up to 115,200 bits/s)				
Pating	Voltage	Includes 24 VDC	±10% ripple (P-P)			
Rating	Maximum current consumption	1.3 A or less when connected to 1 head/ 1.9 A or less when connected to 2 heads				
Environmental	Operating ambient temperature	0 to +50°C 32 to 122°F				
resistance	Operating ambient humidity	20 to 85% RH (No condensation)				
Weight		Approx. 1500 g				

- The rating for NPN open-collector output is up to 50 mA (40 V or less), residual voltage of up to 1 V
  The rating for PNP open-collector output is up to 50 mA (30 V or less), residual voltage of up to 1 V
  The rating for non-voltage input is up to 1 V for ON voltage and up to 0.6 mA for OFF current
  The rating for voltage input is a maximum input voltage of 26.4 V, a minimum ON voltage of 10.8 V, and up to 0.6 mA for OFF current

## Display output unit

Model		LJ-VM100		
Monitor output		Analog RGB XGA (1024 × 768) Touch panel monitor (CA-MP120T), specialized connector included		
Voltage		Supplied from the controller		
Power consumption		2.5 W or less		
Environmental	Operating ambient temperature	0 to +50°C 32 to 122°F		
resistance	Operating ambient humidity	20 to 85% RH (No condensation)		
Weight		Approx. 400 g		

# LJ-H2 (LJ-Navigator 2) operation system environment

Item		Minimum system requirements			
PC Interface	Ethernet*1	1000BASE-T/100BASE-TX			
PG Interlace	USB*1	USB 2.0 high speed compliant (USB 1.1 Full-SPEED compatible)			
Supported OS		Windows7 (Home Premium, Professional, Ultimate) Windows Vista (Home Basic, Home Premium, Business, Ultimate) Windows XP (SP2 or later) (Home Edition, Professional Edition)			
Supported languages*2		Japanese, English, German, French, Simplified Chinese, Traditional Chinese			
CPU		Core i3 2.3 GHz or higher			
Memory capacity		2GB or more			
2D cache memory		2MB or more			
Free space on hard disk		10GB or more			
Display resolution		XGA (1024 x 768) or higher			
Weight		Approx. 400 g			

<sup>\*1</sup> Connections through a hub are not covered under warranty.

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#### Head/cable

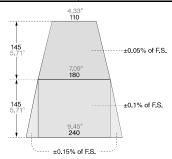
### Sensor head unit

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Model			LJ-V7060K	LJ-V7060	LJ-V7080	LJ-V7200	LJ-V7300		
Mounting conditions		ons	Specular reflection	Diffuse reflection					
Reference distance		ce	54.6 mm 2.15"	60 mm 2.36"	<b>80 mm</b> 3.15"	200 mm 7.87"	300 mm 11.81"		
Z-axis (height specified with the second spe		ht)	±7.6 mm 2.99" (F.S.=15.2 mm 0.60")	±8 mm 0.31" (F.S.=16 mm 0.63")	±23 mm 0.91" (F.S.=46 mm 1.81")	±48 mm 1.89" (F.S.=96 mm 3.78")	±145 mm 5.71" (F.S.=290 mm 11.42")		
ame	X-axis (width)	NEAR side	8 mm 0.31"	13.5 mm 0.53"	25 mm 0.98"	51 mm 2.01"	110 mm 4.33"		
asnir		Reference distance	<b>14 mm</b> 0.55"	<b>15 mm</b> 0.59"	<b>32 mm</b> 1.26"	<b>62 mm</b> 2.44"	180 mm 7.09"		
₩		Far side	8 mm 0.31"	<b>15 mm</b> 0.59"	<b>39 mm</b> 1.54"	<b>73 mm</b> 2.87"	240 mm 9.45"		
			Blue semiconductor laser						
		Wavelength	405 nm (visible beam)						
Light source	Laser class IEC60825-1 FDA(CDRH) Part 1040.10*11	Class 2 Laser Product	Class 2M Laser Product*10	Class 2 Laser Product					
	Output		4.8 mW	10 mW	4.8 mW				
Spot shape (reference distance)		rence distance)	Approx. 21 mm 0.8	33" <b>x 45 µm</b> 1,77 Mil	Approx. 48 mm 1.89 x 48 µm 1.89 Mil	Approx. 90 mm 3.54" x 85 μm 3.35 Mil	Approx. 240 mm 9.45" x 610 µm 24.02 Mil		
Pon	eatability*1	Z-axis (height) *2	0.4 μm 0.02 Mil		<b>0.5</b> μ <b>m</b> 0.02 Mil	1 μm 0.04 Mil	5 μm 0.20 Mil		
nep	eatability	X-axis (width) *3	5 μm 0.20 Mil		10 μm 0.39 Mil	<b>20 μm</b> 0.79 Mil	<b>60 μm</b> 2.36 Mil		
Linearity Z-axis (height) *4		Z-axis (height) *4	±0.1% of F.S.				±0.05 to <sup>*5</sup> ±0.15% of F.S.		
Profile Data interval X-axis (width)		X-axis (width)	<b>20 μm</b> 0.79 Mil		50 μm 1.97 Mil	100 μm 3.94 Mil	300 μm 11.81 Mil		
Sampling cycle (trigger interval)*6		rigger interval)*6	Top speed: 16 μs (high-speed mode) Top speed: 32 μs (advanced function mode)						
Tem	perature cha	racteristics	0.01% of F.S./°C						
E		Enclosure rating*7	IP67 (IEC60529)						
Environmental resistance	Ambient operating illuminance*8	Incandescent lamp: 10000 lux max							
	ronmental	Ambient temperature*9	0 to +45°C 32 to 113°F						
	stance	Operating Ambient humidity	20 to 85% RH (No condensation)						
		Vibration resistance	10 to 57 Hz, 1.5 mm 0.06" double amplitude in X, Y, and Z directions, 3 hours respectively						
		Impact resistance	15 G/6 msec						
Material			Aluminum						
Weight			Approx. 450 g		Approx. 400 g	Approx. 550 g	Approx. 1000 g		

- \*1 This value is from a case in which measurement has been performed with a reference distance at an average frequency of 4096 times.
- \*2 The measurement targets are KEYENCE standard targets (white diffuse objects). This value is from a case in which the average height of the default setting area has been measured in height mode. All other settings are default.
- \*3 The measurement target is a pin gauge. This value is from a case in which the position of the intersection between the rounded surface of the
- pin gauge and the edge level has been measured in position mode. All other settings are default.

  4 The measurement targets are KEYENCE standard targets (white diffused objects). The profile data is from a case in which measurement has been performed with 64x smoothing and 8x averaging. All other settings are default.
- 15 The linearity will differ depending on the measurement area. (See the diagram on the right.)
  16 When the measurement area is at its minimum, binning is ON, image capture mode is set to standard, and parallel image capture is ON in high-speed mode. All other settings are default.
- When the measurement area is at its minimum, binning is ON and image capture mode is set to standard in advanced function mode. All other settings are default.
- $^{\star}7$  This value is from a case in which the head cable (CB-B $^{\star}$ ) or extension cable (CB-B $^{\star}$ E) has been connected.
- \*8 When measuring white paper, this is the illuminance for the light-receiving surface of the sensor head when light has been shined onto white paper.
- \*9 Use the sensor head after first mounting it on a metal plate.
- \*10 Viewing the laser output with certain optical instruments (for example, eye loupes, magnifiers and microscopes) within a distance of 100 mm 3.94" may pose an eye hazard.
- 11 The laser classification for FDA (CDRH) is implemented based on IEC60825-1 in accordance with the requirements of Laser Notice No.50.



### Cables

Model	CB-B3	CB-B10	CB-B5E	CB-B10E	CB-B20E
Cable type	Head cable		Extension cable		
Cable length	3 m 9.8'	10 m 32.8'	5 m 16.4'	10 m 32.81	20 m 65.6'
Minimum bend radius			22 mm 0.87"		
Enclosure rating*1	IP67 (IEC60529)				
Material (outer covering)	PVC				
Weight	Approx. 250 g	Approx. 750 g	Approx. 400 g	Approx. 800 g	Approx. 1500 g

- \*1 This value is from a case in which the sensor head has been connected. However, the controller side connector is not included.
- Regarding cable extension between the head and controller. Up to 2 cables can be connected with the CB-BxxE, and these cables should be kept to a total length of 30 m 98.4' or less.