

# Specifications

## Accuracy / Repeatability<sup>(1)(3)(9)</sup>

	Coplanarity(4)	Ball Presence	Warpage(6)	Ball Height(7)	Ball offset	Grid-to-package offset	Ball pitch	Body width Body height	Ball width	Ball quality	Contrast
BGA CSP	7.5 µm (0.3 mils)		7.5 µm (0.3 mils)	10 µm (0.4 mils)	5 µm (0.2 mils)	10 µm (0.4 mils)	5 µm (0.2 mils)	10 µm (0.4 mils)	10 µm (0.4 mils)	20-50%	7 GV
Large BGA	10 µm (0.4 mils)		10 µm (0.4 mils)	15 µm (0.6 mils)	5 µm (0.2 mils)	10 µm (0.4 mils)	5 µm (0.2 mils)	10 µm (0.4 mils)	10 µm (0.4 mils)	20%	7 GV

	Lead coplanarity	Body standoff	Lead offset/ Skew	Lead Pitch	Half span Lead length dev. Lead width	Terminal dimensions (7)	Foot angle (6)	Lead sweep	Lead slant	Burr (5)
Gull Wing	5-7.5µm (0.2-0.3 mils)	10 µm (0.4 mils)	4 µm (0.16 mils)	5 µm (0.2 mils)	10 µm (0.4 mils)	15 µm (0.6 mils)	0.75 degrees	5 µm (0.2 mils)	5 µm (0.2 mils)	Minimum burr size 40 µm (1.6 mil)

	Lead coplanarity	Body standoff	Lead pitch Lead offset Lead skew	Lead length dev.	Lead sweep	Lead slant
J-Lead	10-12.5 µm (0.4-0.5 mils)	15 µm (0.6 mils)	10 µm (0.4 mils)	20 µm (0.8 mils)	10 µm (0.4 mils)	10 µm (0.4 mils)

	Position (8)	Width, Lead length	Offset, Edge straightness	Body width/Body height
QFN/ BCC	15 µm (0.6 mils)	15 µm (0.6 mils)	15 µm (0.6 mils)	15 µm (0.6 mils)

- (1) Accuracy is measured on a golden device and is characterized by the deviation between the average value of the distribution of results from repeated measurements and the value in the certificate file..
- (2) Provided minimum 0.5mm (0.02") flat foot.
- (3) Above values are for commonly used components.  
Contact the factory for specifications on special components.
- (4) BGA coplanarity is relative to global plane.
- (5) Burrs are measured on the lead sides, in the lead gaps and in front of the lead tips.
- (6) Warpage is calculated in X, Y and corner direction and is defined as the height difference between the center of the 2nd order plane and

- the border height of the plane at the respective border ball position.
- (7) Ball Height is normalized with the warpage plane.
- (8) Position reflects the measurement items offset (OF), skew (SK), span (SP), length deviation (LD) and terminal dimensions.
- (9) Repeatability can be measured on a real device and is defined as the 3 sigma value of the distribution of all lead/ball-level deviations from the average value when performing statically repeated measurements on the same device.

## Lens-set configurations

Two configurations are available. The standard lens set: suited for most common CSP and BGA devices up to 37x37mm. For very large BGAs, up to 45x45mm, a different lens set is required.

Mode	Min ball diameter (µm)	FOV (mm)
CSP/BGA	350	38
Large BGA	500	47

## Speed

			Tray-to-tray operation		Tray-to-tape operation			
			CI-8250		CI-8450	CI-8250/CI-8450		
			No acceleration kit	With acceleration kit	With acceleration kit	On The Fly (Single image)	Indexed (Multiple images)	Pocket Pitch
Device	Size	Tray						
TSOP32	10x20	9x13	6700	6700	8700	4000	3000	12
QFP32	7x7	10x25	6800	6800	7000	4500	3300	12
QFP100	14x14	6x15	6800	6800	8000	4000	3000	24
QFP208	28x28	3x8	3700	4000	5000	2700	2400	32
PLCC84	28x28	3x9	2700	2700	-	2700	2400	48
CSP48	6x7	12x22	6100	6400	9600	4500	3300	12
CSP175	13x13	8x20	4500	6400	8000	4000	3000	24
BGA256	27x27	4x10	4000	4900	6500	2700	2400	32
BGA396	35x35	3x8	3000	3800	5000	2700	2400	40
QFN24	4x4	13x34	4000	4000	5000	3600	3000	12

	Single Device Inspection
	Dual Device Inspection

### General remarks:

- Speeds are indicative and might be influenced by tray lay-out, tape pitch and sorting options.
- Activating Back-Light Burr or Bottom Surface Inspection, will decrease the UPH. Please consult factory.
- When a tray-transfer option is used, the UPH of the "indexed" tray-to-tape operation is applicable.
- For tray-to-tape operation, a yield of 100% is assumed.
- Speeds include all inspections except from BU, FA, LI-2D in tape, BX, BY, GX, GY and in-between-ball measurement.
- OTF operation is not possible when LI-2D in tape is enabled.
- J-Lead devices are always inspected in single device mode.

## Dimensions & supplies

- 1,660 (W) x 1,250 (D) x 2,110 (H) mm/66" (W) x 50" (D) x 61" (H). (Monitor not included).
- Weight: 1,200kg Net/1,400kg Gross (2645lbs./3080lbs.)
- Supply Voltage: 110-220 V.
- Power consumption: 3kW.
- Air pressure: 5.5 bar (80 psi) 12%.
- Air consumption at 5.5 bar: 80 liters/min.
- Minimum factory vacuum: 0.85 bar (12 psi) (optional).
- Maximum vacuum consumption at 0.85 bar: 100 liters/min.

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