

**Centre for Applied Research in Electronics (CARE), IIT Delhi**  
**Silicon Wafers: Specifications**

**Item # 1 N-type silicon wafer (phosphorous doped)**  
**General Specifications**

Sr. No	Property	Specification
1	Grade	<b>Prime grade, highest quality material and wafer</b>
2	Crystal growth method	Czochralski (CZ) crystal growth <b>or</b> Float Zone (FZ)
3	Diameter	50.8 mm $\pm$ 0.2 mm (2-inch)
4	Orientation	<100>, $\pm$ 1°
5	Thickness	Mean value: 280 $\pm$ 10 micron across the wafer. Wafer-to-wafer average thickness variation in the entire lot: $\pm$ 25 micron
6	Wafer flat	Primary / secondary flats as per SEMI standard
7	Polish	Single-side polished to haze-free mirror finish with average roughness (Ra) values in the range of 1-3 Å, measured using AFM on 5 micron X 5 micron area or preferably 10 micron x 10 micron area. Back-side: chemically etched
8	Wafer flatness	Total thickness variation (TTV): < 10 micron Bow: / wrap < 20 micron Please quote best/worst values and the method of measurement.
9	Resistivity	1-10 ohm-cm
10	Minority carrier life time	<b>Desirable:</b> More than ( $\geq$ ) 25 micro second ( $\mu$ S). Please quote the best-worst values expected in a batch. Also quote the measured value and method of measurement on a representative wafer
11	Dislocation density	<b>Desirable:</b> Less than 500/cm <sup>2</sup> . Please quote the best-worst values expected in a batch. Also quote the measured value and method of measurement on a representative wafer
12	Quantity	Minimum 75, thereafter in multiple of 25

**Item # 2 P-type silicon wafers (boron doped)**

All other specifications: as per given above for Item No. 1.

It is mandatory that the supplier should provide (i) the measured values of all the parameters as listed above **on at least one wafer from a batch of 25** and (ii) the method of measurement. This should be clearly stated on the quotation. The name of the actual manufacturer, its complete address, the country of manufacturing etc. must be clearly stated.

**Please note that the quotation must be complete giving all specifications as listed above.**

**Other Terms and Conditions:**

- (1) Payment will be made in INR
- (2) Payment will be done after receipt of items
- (3) The quoted prices should be for delivery at IIT Delhi
- (4) The quotation should reach undersigned latest by **5 PM, Monday, August 12, 2013**

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