



SATYENDRA NATH BOSE NATIONAL CENTRE FOR BASIC SCIENCES
[Funded by the Department of Science & Technology, Government of India]
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Ref. SNB/ENQ/MP/Parabolic Mirror /13-14/

21.11.2013.

Dear Sir,

Sealed quotations are hereby invited for the following items in two parts (Technical and Commercial bids). One large envelope containing two smaller envelopes containing Part A: Technical Bid and Part B: Commercial Bid need to be submitted separately – Two smaller envelopes should be super-scribed "**Technical Bid**"/"**Commercial Bid**" as the case may be.

Sl. No.	PARTICULARS	Qty
01.	Off-Axis Replicated Parabolic Mirrors with accessories [See attached sheet for detailed technical specifications]	As specified in the technical specification.

Technical bid should contain complete technical information literature/working manual of the quoted item, & authorization certificate of the manufacturer.
Price Bid - In case of imported item CIF Kolkata airport price should be mentioned and for indigenous item FOR basis up to S. N. Bose Centre, kolkata may be quoted.

Note:

- 1) The quoted price should be inclusive of delivery charges.
- 2) Validity should be for 90 days from the date of opening
- 3) Minimum one (1) year standard onsite warranty is to be provided.
- 4) Our Payment term is subject to after delivery only.
- 5) Delivery period should be mentioned in the quotation.
- 6) Our ref. no. should be mentioned on top of the quotation envelope.
- 7) Quotation for the above item should reach this office by **11th December, 2013**.

Thanking you,
Yours faithfully,

S. K. Singh
AR (Purchase)

Off-Axis Replicated Parabolic Mirrors: specifications

1. Off-Axis Replicated Parabolic Mirror, 1.50in Diameter, 0.80in Effective Focal Length, Bare Gold Coating

Specification	Required Quantity
Mirror Shape: Parabolic Material: Aluminum Effective Focal Length: 0.8 in. Reflectivity: ≥85% average Surface Quality: 60-40 scratch-dig Clear Aperture: ≥90% of central diameter Coating Type: Bare Gold Coating Adhesion: MIL-F-48616 Focus Base Distance: 0.800 in. Height: 1.600 in. Surface Roughness: 25 Å (typical) Humidity Resistance: MIL-F-48616 Coating Hardness: N/A	4

2. Off-Axis Replicated Parabolic Mirror, 1.50in Diameter, 8.00in Effective Focal Length, Bare Gold Coating

Specification	Required Quantity
Mirror Shape: Parabolic Material: Aluminum Effective Focal Length: 8.0 in. Reflectivity: ≥85% average Surface Quality: 60-40 scratch-dig Clear Aperture: ≥90% of central diameter Coating Type: Bare Gold Coating Adhesion: MIL-F-48616 Focus Base Distance: 0.800 in. Height: 1.585 in. Surface Roughness: 25 Å (typical) Humidity Resistance: MIL-F-48616 Coating Hardness: N/A	2

3. Off-Axis Replicated Parabolic Mirror, 1.50in Diameter, 4.00in Effective Focal Length, Bare Gold Coating

Specification	Required Quantity
Mirror Shape: Parabolic Material: Aluminum Effective Focal Length: 4.0 in. Reflectivity: ≥85% average Surface Quality: 60-40 scratch-dig Clear Aperture: ≥90% of central diameter Coating Type: Bare Gold Coating Adhesion: MIL-F-48616 Focus Base Distance: 0.800 in. Height: 1.620 in. Surface Roughness: 25 Å (typical) Humidity Resistance: MIL-F-48616 Coating Hardness: N/A	2

4. Mounting adapter, Off-Axis Parabolic Mirror, for 2-in mounts

Specification	Required Quantity
Optic Diameter: 2.0 in. (50.8 mm) Special Features: Mounting adapter Material: Anodized: Aluminum	10

5. Suprema Clear Edge Mirror Mount, 2.0 in. Diameter, 3 Locking Adjusters, Left-Handed, Rear Load, 8-32 (M4) Clearance Hole Mounting

Features:

- Stainless steel construction for superior stiffness and stability
- Time-tested and industry-proven design
- High sensitivity adjustment screw options
- Precision-polished ultra-hard carbide pads
- Modular, exchangeable Actuators
- Clear edge and close aperture design

Specification	Required Quantity
Optic Diameter: 2.0 in. (50.8 mm) Mechanism: Kinematic Drive Type: Knob Adjustments: z, θ_x , θ_y Special Features: Clear Edge Angular Range Categories: $\pm 4^\circ$ to $\pm 7^\circ$ Sensitivity Categories: 3 to 6 arc sec Angular Range: $\pm 7^\circ$ Sensitivity: 3.8 arc sec Adjustment Screw Thread: 100 TPI Mounting Type: Clearance Hole for 8-32 or M4 Screws Material: Stainless Steel	8

6. 3.5 inch Stainless Steel Optical Mounting Post

Specification	Required Quantity
Type: Optical Post Diameter: 0.5 in. (12.7 mm) Height: 3.5 in. (88.9 mm) Thread Type: M4 and M6 Material Stainless: Steel	10

7. 3 inch Stainless Steel Optical Mounting Post

Specification	Required Quantity
Type: Optical Post Diameter: 0.5 in. (12.7 mm) Height: 3.5 in. (88.9 mm) Thread Type: M4 and M6 Material Stainless: Steel	10

8. Optical Beam Block/Tool Holder, Magnetic-Base, Large

Features:

- Should block unused or stray beam
- Numbered grid pattern aids alignment and height setting
- Holds English or metric ball drivers/ Allen wrenches
- Magnetic base for quick stable placement on optical table
- Promotes eye safety

Specification	Required Quantity
The front surface of the holder should have a grid pattern of 0.25 inch squares which can be used as a reference for aligning or levelling an optical beam. Numbers should be printed on the edge of the grid pattern indicating height, in inches, above the table surface. It should promote eye safety so that unused or stray beams can be easily blocked using it.	2

<p>It should contain two sets of four holes (eight in total) in the top for mounting various sizes of ball drivers either English or metric.</p> <p>It should be made from black-anodized aluminum alloy and its design should also incorporate a 3-element magnetic base to allow quick and stable placement on to the stainless steel surface of an optical table.</p>	
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9. Complete Platform, Assembly Height 100.4 mm, Metric

Specification	Required quantity
<p>Type: Base plates</p> <p>The top plate should have the size 254 x 152.5 mm. It should have (12) M6 CLR holes, and (33) M6 thread holes for attaching components.</p> <p>The base plate should have the size 254 x 152.5 mm and (10) M6 CLR holes for tie-down to tables or magnetic bases. Four steel posts should connect the plates</p>	1

10. Platform Pillar, 75 mm Height, 25.4 mm Diameter, M6 Threads

Specification	Required quantity
<p>Type: Platform Pillar</p> <p>Diameter: 1.0 in. (25.4 mm)</p> <p>Height : 75 mm</p> <p>Material: Steel</p> <p>Thread Type: M6</p> <p>It should be made from rigid steel with a durable, stain-chrome finish</p>	4

11. Solid Aluminum Optical Breadboard, 300 x 300 mm, M6 holes on 25 mm grid

Specification	Required quantity
<p>Width 300 mm</p> <p>Length 300 mm</p> <p>Thickness: 12.7 mm</p> <p>Mounting Hole Pattern: 25 mm grid</p> <p>Mounting Hole Type: M6-1.0</p>	1

12. Zinc Selenide Window, 25.00 mm Diameter, 3.0 mm Thick, 3-12 μm

Features:

- High transmission (>90%) from 3-12 μm
- Low dispersion and low absorption coefficient
- Ideal for thermal demanding environments

Specification	Required quantity
<p>Material: CVD Laser Grade ZnSe</p> <p>Diameter: 0.98 in. (25.0 mm)</p> <p>Thickness: 0.12 in. (3.0 mm)</p> <p>Antireflection Coating: 3-12 μm</p> <p>Surface Quality: 40-20 scratch-dig</p> <p>Surface Accuracy: λ/20 @ 10.6 μm</p> <p>Diameter Tolerance: +0.0/-0.1 mm</p> <p>Thickness Tolerance: ± 0.1 mm</p> <p>Cleaning: Non-abrasive method, acetone or isopropyl alcohol</p>	1

13. M1 Mirror Mount with Broadband Metallic Mirror, 25.4 mm Diameter, 650nm-20 μm

Specification	Required quantity
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Mirror Shape Round Wavelength Range: 650-20000 nm Diameter: 1.00 in. (25.4 mm) Thickness: 0.24 in. (6.0 mm) Material: Borofloat® 33 or equivalent Reflectivity: Ravg>96%, Rmin>92% @ 650-1700 nm Ravg>98%, Rmin>96% @ 1.7-20 μm Surface Quality: 15-5 scratch-dig Coating Code ER.4 Coating Type 650-20,000 nm (Protected Gold) Angle of Incidence: 0-15° Surface Flatness: λ/10 at 632.8 nm over the clear aperture Chamfers: 0.25–0.76 mm face width Chamfers Angle/Tolerance 45° ±15° Diameter Tolerance +0/-0.13 mm Thickness Tolerance ±0.25 mm	4
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14. Gloves, Large, 100 Quantity

Specification	Required quantity
Type: Finger cots and gloves Size: large Quantity: 100 each	1

