

1. TECHNICAL SPECIFICATIONS

1.1. RAMAN FILTER (LONG WAVE PASS)

	Specification	Values
1.	Substrate material	NBK7 OR Equivalent
2.	Substrate Quality	NH2 (free of blow holes/cracks)
3.	Diameter	25±0.1mm
4.	Thickness	3.5 ± 0.1 mm
5.	Clear Aperture (CA)	≥20mm
6.	Surface quality	<λ/6 at 632nm
7.	Parallelism	20 arc sec
8.	Edge chamfer	0.5±0.1mm at 45 deg
9.	Power (both surface)	<λ/2 at 632nm
10.	Scratch / Dig	60/40 or better (MIL-PRF-13830B)
11.	Edge finish	Grounded edge finishing
12.	Orientation	Arrow on the edge indicating primary coating
13.	Laser wavelength & power	532nm & 80 mW
14.	Transmission region	Tavg≥90%, 536.2±0.25nm to 680nm
15.	Passband ripple	<4%
16.	Blocking band	OD ≥ 6 at 532nm
17.	Angle of incidence	0±1 degree
18.	Half cone angle of incidence	5 deg
19.	Coating uniformity	Shift in band edge <5cm ⁻¹ from diametrical edge to edge within CA
20.	Optical damage rating	≥1 J/cm ²
21.	Temperature	Operating Range: -30°C to +60°C Storage Range: -40°C to +70°C
22.	Package Type	No mounting/ housing required
23.	Quantity	15 nos

1.2. DICHROIC MIRROR (LONG WAVE PASS)

	Specification	Requirement
1.	Substrate material	NBK7 OR Equivalent
2.	Substrate Quality	NH2 (free of blow holes/cracks)
3.	Diameter	38±0.1mm
4.	Thickness	4.5 ± 0.1 mm
5.	Clear Aperture (CA)	≥30mm
6.	Surface quality	<λ/6 at 632nm
7.	Parallelism	20 arc sec

8.	Edge chamfer	0.5±0.1mm at 45 deg
9.	Power (both surface)	<λ/2 at 632nm
10.	Scratch / Dig	60/40 or better (MIL-PRF-13830B)
11.	Edge finish	Grounded edge finishing
12.	Orientation	Arrow on the edge indicating primary coating
13.	Angle of incidence	45±0.5 degree
14.	Transmission & Band	Tavg>95%, 536.2±0.25nm to 680nm
15.	Reflection & Band	Rabs≥95%, 532.3±0.25nm to 520nm
16.	Wavelength shift	0.35% per degree
17.	Edge steepness	3±0.5nm
18.	Half cone angle of incidence	0.5 deg
19.	Optical damage rating	≥1 J/cm ²
20.	Temperature	Operating Range: -30°C to +60°C Storage Range: -40°C to +70°C
21.	Package Type	No mounting/ housing required
22.	Quantity	15 nos.

1.3. BROADBAND DIELECTRIC MIRROR

	Specification	Requirement
1.	Substrate material	NBK7 OR Equivalent
2.	Substrate Quality	NH2 (free of blow holes/cracks)
3.	Diameter	35±0.1mm
4.	Thickness	3 ± 0.1 mm
5.	Clear Aperture (CA)	≥28mm
6.	Surface quality	<λ/6 at 632nm
7.	Parallelism	20 arc sec
8.	Edge chamfer	0.5±0.1mm at 45 deg
9.	Power (both surface)	<λ/2 at 632nm
10.	Scratch / Dig	60/40 or better (MIL-PRF-13830B)
11.	Edge finish	Grounded edge finishing
12.	Orientation	Arrow on the edge indicating primary coating
13.	Angle of incidence	45±0.5 degree
14.	Reflection & Band	Ravg≥99%, 500±2nm to 700±2nm
15.	Optical damage rating	≥1 J/cm ²
16.	Temperature	Operating Range: -30°C to +60°C Storage Range: -40°C to +70°C
17.	Package Type	No mounting/ housing required
18.	Quantity	15 nos.

1.4. LASER LINE BANDPASS FILTER

	Specification	Requirement	
1.	Substrate material	NBK7 OR Equivalent	
2.	Substrate Quality	NH2 (free of blow holes/cracks)	
3.	Diameter	12±0.1mm	
4.	Thickness	2.5 ± 0.1 mm	
5.	Clear Aperture (CA)	≥10mm	
6.	Surface quality	<λ/4 at 632nm	
7.	Parallelism	20 arc sec	
8.	Edge chamfer	0.5±0.1mm at 45 deg	
9.	Power (both surface)	<λ/2 at 632nm	
10.	Scratch / Dig	20/10 or better (MIL-PRF-13830B)	
11.	Edge finish	Grounded edge finishing	
12.	Orientation	Arrow on the edge indicating primary coating	
13.	Angle of incidence	0±0.5 degree	
14.	Transmission & Band	Tavg≥90%, 532±1nm	
15.	Center Wavelength (CWL)	532.0nm	
16.	Full Width-Half Maximum (FWHM)	2.05 to 3.75nm	
17.	Blocking Band (avg)	OD≥6, 489 to 524nm 540 to 585nm	OD≥5, 447 to 527nm 537 to 699nm
18.	Optical damage rating	≥1 J/cm ²	
19.	Temperature	Operating Range: -30°C to +60°C Storage Range: -40°C to +70°C	
20.	Package Type	No mounting/ housing required	
21.	Quantity	15 nos.	

1.5. CUSTOM FILTER

	Specification	Requirement
1.	Substrate material	Fused silica or NBK7
2.	Substrate Quality	NH2 (free of blow holes/cracks)
3.	Diameter	38±0.1mm
4.	Thickness	4.5 ± 0.1 mm
5.	Clear Aperture (CA)	≥30.20mm
6.	Surface quality	<λ/4 at 632nm
7.	Parallelism	20 arc sec
8.	Edge chamfer	0.5±0.1mm at 45 deg
9.	Power (both surface)	<λ/2 at 632nm
10.	Scratch / Dig	60/40 or better (MIL-PRF-13830B)

11.	Edge finish	Grounded edge finishing
12.	Orientation	Arrow on the edge indicating primary coating
13.	Angle of incidence	45±0.5 degree
14.	Reflection @ AOI 45°	Ravg≥15%
15.	Reflection Band	590±10nm
16.	Transmission @ AOI 45°	Tavg≥85%
17.	Transmission Band	Typically, 500 to 550nm
18.	Optical damage rating	≥1 J/cm ²
19.	Temperature	Operating Range: -30°C to +60°C Storage Range: -40°C to +70°C
20	Package Type	No mounting/ housing required
21	Quantity	15 nos.

2. Reliability and Environmental Tests

Commercial off-the-shelf components with hard coatings are acceptable:

- 2.1. Adhesion and abrasion test reports for the coatings batches to be provided
- 2.2. Laser induced damage test (LIDT), humidity and thermal shock test reports are required without any financial implication on this procurement. Test results conducted on earlier batches for similar products having on par design and coating processes may be shared. Such results may be submitted along with the technical bid.
- 2.3. Standards MIL-C-48497 and LIDT standard ISO 21254 may be referred for above tests

3. Delivery Terms

- 3.1. Quantity to be supplied in two shipments. Shipment-1 consisting of 07 numbers of each item. The first batch components will be subjected to Reliability and Environmental Tests as mentioned above.
- 3.2. Subject to inspection and approval of components, delivery for shipment-2 will be intimated by LEOS.
- 3.3. In the event of rejection of components in shipment-1, party has to replace the rejected components.

4. General Conditions

- 4.1. The party is required to furnish a Certificate of Conformance (COC) for the substrates and their quality.
- 4.2. The test and characterization report should include spectral measurements performed with a wavelength resolution of 0.1nm or better.
- 4.3. Component traceability like coating batch details, coating date, product number, etc to be provided along with delivery.
- 4.4. The reports mentioned in the conditions above (4.1 & 4.2) should be shared prior to product delivery. Products will be dispatched to LEOS upon the acceptance of the COC and test reports.
- 4.5. Point by point compliance shall be provided in the offer for each of the specification
- 4.6. Certificate from Principal for authorized distributors to be provided
- 4.7. LEOS retains the right to place orders for partial quantities or divide orders among multiple parties.