

Technical specifications for Unmounted Polarization modulator.

Technical specifications and quantity required is given below.

Polarization modulator

I. Physical dimensions and quantity of polarization modulator:

Dimensional specifications and quantity of the polarization modulator are mentioned in the Table1.

Table 1: Polarization modulator and quantity:

S. No	Name	Size (mm)	Thickness (mm)	Quantity
1	Polarization modulator (unmounted)	25	~ 8-9mm	25

II. Technical specifications of Polarization modulator

This section gives the technical specifications of polarization modulator in detail.

Table 2: Specifications of polarization modulator

Specifications of Polarization modulator			
S. No	Parameter	Value	Tolerance
1	Physical size	25.4 mm	+0.1/-0.1mm
2	Aperture shape	Circular	
3	Clear aperture	≥20mm	
4	Material	Birefringent polymer substrate, BK7 Grade A, fine annealed	
5	Thickness	8mm to 9mm	
6	AR coating	R<0.5% per surface at normal incidence at 900-1250 nm	
7	Transmission	>92% over 0.5micron to 1.1micron	
8	Retardance	$\lambda/4$	$\pm \lambda/350$
9	Retardance knowledge	$\pm 0.1^\circ$	
10	Central wavelength of retardance	1064 (air)	$\pm 1\text{nm}$
11	Acceptance cone angle	$4^\circ \pm 0.1^\circ$ (over this angle of incidence the retardance should not vary more than 0.1deg.)	
12	Beam deviation (o & e beams)	≤ 1 arcmin	
13	Transmission wavefront error (PTV)	$< \lambda/4$, (λ : 632.8nm)	
14	Damage threshold	500 W/cm ² CW, 0.5 J/cm ² with 10 nsec pulses, @ 1064 nm, 0.3 J/cm ² with 10 nsec pulses at 532 nm	

15	Cosmetic quality	40-20	
16	Operating temperature	-20°C± 50°C	

Deliverables

1. Polarization modulator meeting the specifications in Tables 2.
2. Conformance certificates for the specifications in Tables 2.

Acceptance and rejection criteria:

Acceptance criteria, is that the polarization modulator should meet the specifications mentioned in Table 2.

Shelf life:

Supplied components should have a storage shelf life of 3 years and further operational period of 5 years without any degradation in the performance. Vendor shall specify the suitable storage conditions.

Packaging:

Components shall be packed in clean room compatible containers that do not make contact with optical surfaces. Containers should be then sealed in polymer bags. Packing should be done under clean room conditions.

Eligibility criteria of vendor:

Vendor must have the knowledge, infrastructure and heritage in manufacturing of polarization modulator with similar specifications If any published articles or technical documents can be shared that will help us in qualifying.