

# Optics | PRISMS AND CUBES - UV TO NIR

Surface Tolerances	Precision	Laser Grade	Manufacturing Limit
Surface quality (scratch-dig)	20-10	10-5	5-2
Polished Surface roughness (Å, RMS)	20	5	2.5
Flat irregularity (waves, P-V @ 633 nm)	$\lambda/4$	$\lambda/10$	$\lambda/25$
MRF <sup>®</sup> surface irregularity (waves, P-V @ 633 nm)	$\lambda/20$	$\lambda/40$	$\lambda/80$
Dimensional Tolerances	Commercial	Precision	Manufacturing Limit
Length & Width (mm)	$\pm 0.150$	+0.000/-0.250	+0.000/-0.010
Thickness (mm)	$\pm 0.150$	+0.000/-0.250	$\pm 0.005$
Angular Deviation	<3 arc min	$\leq 10$ arc sec	$\leq 0.5$ arc sec
Clear aperture (%)	$\geq 85$	$\geq 90$	$\geq 95$

- High precision angular tolerance
- Optical contacting options
- High laser damage threshold
- Porro, pellen broca, penta, dove right angle, isosceles, equilateral, roof, and custom light pipes
- Manufacturing dimensions from 3 mm to 300 mm
- For materials see pgs 6-7



The general tolerance specifications above provide a guideline regarding manufacturing capabilities for uncoated optics ranging in size from 3-100 mm. The manufacturing limits are not absolute and may vary depending on material; tighter tolerances may be possible. Part specific tolerances may vary. All specifications do not need to be from single column.

# PRISMS AND CUBES - INFRARED | Optics

Surface Tolerances	CaF <sub>2</sub>		Zinc Selenide		Germanium	
	Typical	Mfg Limit	Typical	Mfg Limit	Typical	Mfg Limit
Surface quality (scratch-dig)	60-40	20-10	40-20	20-10	40-20	10-5
Polished Surface roughness (Å, RMS)	40	20	10	5	10	5
Surface flatness (waves, P-V @ 633 nm)	$\lambda/4$	$\lambda/20$	$\lambda/4$	$\lambda/20$	$\lambda/4$	$\lambda/20$
Surface irregularity (waves, P-V @ 633 nm)	$\lambda/4$	$\lambda/20$	$\lambda/4$	$\lambda/20$	$\lambda/4$	$\lambda/20$
<b>Dimensional Tolerances</b>						
Length and Width (mm)	±0.1	±0.025	±0.1	±0.025	±0.1	±0.025
Angular deviation (arc seconds)	30	1	30	1	30	1
Clear aperture (%)	90	98	90	98	90	98

- Conventional prisms
- Cube assemblies
- Durable AR and beamsplitter coatings

## Prism Types

Right angle  
Pechan  
Roof  
Penta  
Corner cubes  
Dove  
Retroreflectors

## Material Types

MgF<sub>2</sub>  
CaF<sub>2</sub>  
Si  
ZnS & ZnS (MS)  
ZnSe  
Ge



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