



# Interferometric Optics

## 2021 Optics Catalog



Fine optics for research: US designed... made with US materials

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## Multiple-Prism Beam Expanders<sup>†</sup>

$M$	Number of Prisms	Prisms Height	Exit Aperture	Deployment Configuration <sup>††</sup>	Dispersion <sup>†††</sup>
81	2	10 mm	20mm	+ -	$(\partial\phi/\partial\lambda) = 0$ @ 590 nm <sup>††††</sup>
120	3	10 mm	30 mm	+ + -	$(\partial\phi/\partial\lambda) = 0$ @ 590 nm <sup>††††</sup>

<sup>†</sup> Made of fused silica. Detailed angular deployment position of each prism supplied. All beam incidence and beam exit prisms surfaces polished to  $\lambda/10$  over 90%. Only the hypotenuse and the exit surfaces are polished. All prism angles are specified within 5 arc min.

<sup>††</sup> Simple deployment of the last prism to a positive configuration (+) provides a highly dispersive arrangement.

<sup>†††</sup> Assumes an original unexpanded beam diameter of 200 $\mu$ m. For  $M = 81$  the expanded beam is 16.2 mm and for  $M = 120$  the expanded beam is 24 mm.

<sup>††††</sup> Quoted dispersion is for deployment in a compensating configuration. Large dispersion values can be obtained by deploying the prisms in an additive configuration.

Note: special designs, for specific  $M$  factors and optical materials, are available up on request.

### Bibliography

- F. J. Duarte and J. A. Piper, Dispersion theory of multiple-prism beam expander for pulsed dye lasers, *Optics Communications* **43**, 303-307 (1982).
- F. J. Duarte and J. A. Piper, Narrow linewidth high prf copper laser-pumped dye-laser oscillators, *Applied Optics* **23**, 1391-1394 (1984).
- F. J. Duarte, Multiple-prism Littrow and grazing incidence pulsed CO<sub>2</sub> lasers, *Applied Optics* **24**, 1244-1245 (1985).
- F. J. Duarte, Tunable laser optics: applications to optics and quantum optics, *Progress in Quantum Electronics* **37**, 326-347 (2013).

## Multiple-Prism Pulse Compressors<sup>†</sup>

Number of Prisms	Prism Material	Design $\lambda$ (nm)	Prism Class	Dimensions <sup>††</sup> (mm)
2	Fused silica	620	Near Isosceles	30 mm
2	Fused silica	800	Near Isosceles	30 mm
2	NSF 10	620	Near Isosceles	30 mm
2	NSF 10	800	Near Isosceles	30 mm

<sup>†</sup> Designed for incidence at the Brewster angle. Detailed angular deployment position of each prism supplied. All beam incidence and beam exit prism surfaces polished to  $\lambda/10$  over 90%. Only the incidence and exit surfaces are polished. All prism angles are specified within 5 arc min.

<sup>††</sup> Refers to the incidence and exit surfaces. Prism height (or thickness) is 10 mm.

Special designs, for specific wavelengths or optical materials, are available up on request.

Special designs for **Amici Prism** arrays, for applications in astronomical instrumentation, are also available up on request.

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- F. J. Duarte, Generalized multiple-prism dispersion theory for pulse compression in ultrafast dye lasers, *Optics and Quantum Electronics* **19**, 223-229 (1987).
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- F. J. Duarte, *Tunable Laser Optics*, 2<sup>nd</sup> Ed. (CRC, New York, 2015).