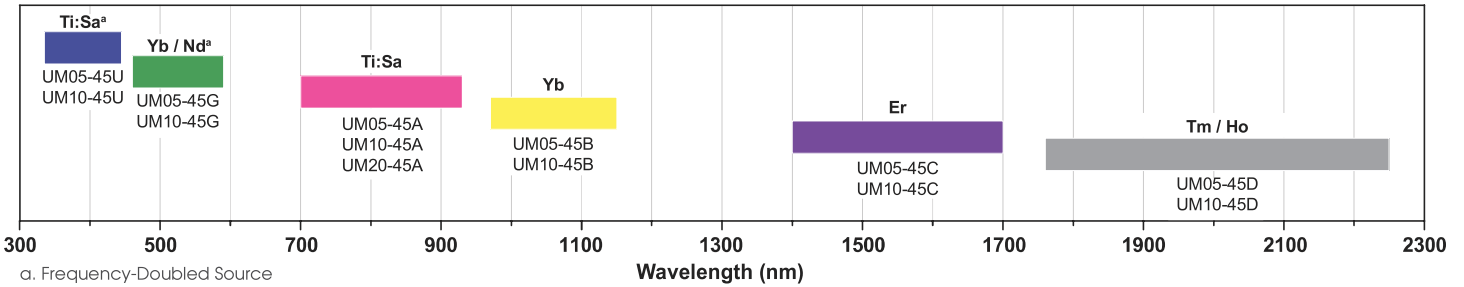


# Low-Dispersion Optics

## Dielectric Mirrors with Low GDD

Our Low Group-Delay-Dispersion (GDD) Mirrors are optimized for low dispersion and high reflectance when used with Ti:Sapphire (Ti:Sa), Ytterbium (Yb), Neodymium (Nd), Erbium (Er), Thulium (Tm), or Holmium (Ho) lasers.

### Low-GDD Dielectric Mirrors



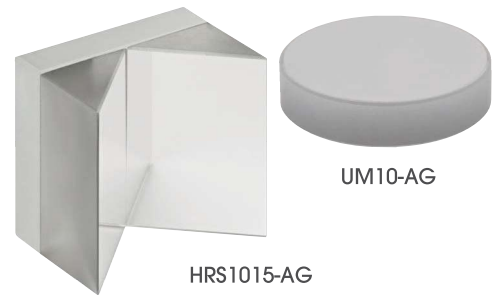
The colored bars represent our selection of low-GDD dielectric mirror coatings available from stock. Each coating is designed to work with a specific laser type, listed above the bar, while the mirrors specified for that wavelength range are indicated by the item #s below the bar. More information is available at [www.thorlabs.com](http://www.thorlabs.com).

## Optics with Ultrafast-Enhanced Silver Coating

Mirrors coated with an Ultrafast-Enhanced Silver Coating offer a slightly lower reflectance over a much wider wavelength range than dielectric mirrors, making them a great choice when working with low energy lasers.

### Specifications

Item #	UM05-AG	UM10-AG	HRS1015-AG	HR1015-AG
Type	Ø1/2" Mirror	Ø1" Mirror	1" x 1" Roof Prism	Ø1" Mounted Roof Prism
Wavelength Range	750 - 1000 nm			
Reflectance at 45° AOI (Absolute)	$R_s > 99.0\%$ $R_p > 98.5\%$	$R_s > 99.0\%$ $R_p > 98.5\%$	$R_s > 99.0\%$ $R_p > 98.5\%$	$R_s > 99.0\%$ $R_p > 98.5\%$
GDD	$ GDD_s  < 20 \text{ fs}^2$ $ GDD_p  < 30 \text{ fs}^2$	$ GDD_s  < 20 \text{ fs}^2$ $ GDD_p  < 30 \text{ fs}^2$	$ GDD_s  < 40 \text{ fs}^2$ $ GDD_p  < 60 \text{ fs}^2$	$ GDD_s  < 40 \text{ fs}^2$ $ GDD_p  < 60 \text{ fs}^2$



## Chirped Mirrors

Our UMC05-15FS and UMC10-15FS mirrors are designed specifically to correct for GDD introduced by fused silica optics in a system. The DCMP175 Chirped Mirror Set compensates for GDD from a complex optical system such as a high-NA microscope objective.



### Specifications


Item #	UMC05-15FS	UMC10-15FS	DCMP175
Size	Ø1/2"	Ø1"	53.0 mm x 12.0 mm (Each, Set of 2)
Wavelength Range	650 - 1050 nm		700 - 1000 nm
Reflectance <sup>a</sup>	$R_{\text{abs}} > 99.5\%$ at 10° AOI	$R_{\text{abs}} > 99.5\%$ at 10° AOI	$R_{\text{avg}} > 99\%$ at 8° AOI
GDD per Reflection at 800 nm	-54 fs <sup>2</sup> (-1.5 mm of Fused Silica)	-54 fs <sup>2</sup> (-1.5 mm of Fused Silica)	-175 fs <sup>2</sup>

a. Over Wavelength Range

## Controlled-GDD Beamsplitters

Controlled-GDD beamsplitters can split p-polarized light in 20:80, 50:50, 80:20, or 90:10 split ratios with a known dispersion delay.

### Specifications



Item #	UFBS2080	UFBS5050	UFBS8020	UFBS9010
Reflectance/Transmission at 45° AOI	$R_{\text{abs}} = 20 \pm 2\%$ , $T_{\text{abs}} = 80 \pm 2\%$	$R_{\text{abs}} = 50 \pm 5\%$ , $T_{\text{abs}} = 50 \pm 5\%$	$R_{\text{abs}} = 80 \pm 5\%$ , $T_{\text{abs}} = 20 \pm 5\%$	$R_{\text{abs}} = 90 \pm 2\%$ , $T_{\text{abs}} = 10 \pm 2\%$
Wavelength Range	600 - 1500 nm			
GDD in Reflection	0.2 mm of Fused Silica	0.7 mm of Fused Silica	2 mm of Fused Silica	-
Infrasil® Window for Balancing GDD <sup>a</sup>	N/A	UDP05 or UDP10	N/A	N/A

a. Infrasil windows will not fully balance dispersion for beamsplitters with split ratios other than 50:50. Thicker uncoated fused silica windows may be used instead.