

# DMR– DISPERSION MANAGEMENT REFLECTOR FOR FIBER LASERS

The PowerSpectrum™-DMR allows tailoring of pulse duration in passively mode locked ultrafast fiber lasers.



TeraXion's DMRs are all-fiber, FBG-based chromatic dispersion management devices that can provide either anomalous or normal dispersion at any wavelength.

Used as the output coupler of a mode locked ultrafast laser, a DMR tailors the overall chromatic dispersion within the laser cavity, allowing control over the mode of operation of the laser and the output pulse duration.

Due to its band pass spectral response, a DMR also improves the wavelength stability and minimizes the power variations of the ultrafast laser output.

## Features

- Broad wavelength range
- Precise control over  $\beta_2$  and  $\beta_3$
- Customizable parameters
- Different packaging options (recoated or loose tube)
- Very low dispersion rate available

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## Benefits

- Alignment free
- Cost effective
- Compact

### PWS-DMR Standard Configuration Specifications Stock Items

Parameters	Specifications		Units
Center Wavelength ( $\lambda_0$ ) @ Room T° <sup>(1)</sup> (Slow Axis)	1030 ± 3		nm
Reflection Bandwidth @ -3 dB FWHM <sup>(2)</sup>	20 ± 1	10 ± 1	nm
Peak Reflectivity	> 12.0	> 25.0	%
D <sub>2</sub> <sup>(3)</sup>	+ 0.20	+ 0.42	ps/nm
D <sub>3</sub> <sup>(3)</sup>	0	0	ps/nm <sup>2</sup>
Spectral Shape	Gaussian		
Wavelength Referenced to	Air		
Connectors Type	None		
Fiber Type	PM 980		
Package Type	UV Cured Acrylate		
Pigtails Length (On Each Side)	≥ 1		m

(1): Room temperature (20-23°C)

(2): Short wavelengths reflected first

(3): The group delay function is:  $GD = D_1 + D_2(\lambda - \lambda_0) + D_3(\lambda - \lambda_0)^2$

### PWR-DMR Customizable Specifications

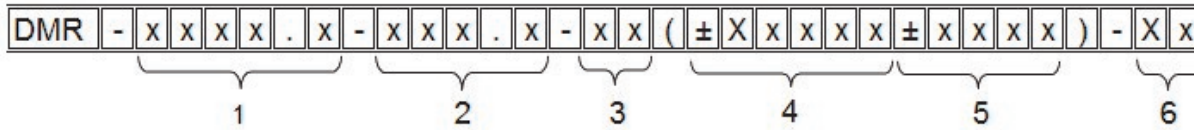
Parameters	Specifications	Units
Wavelength Range (Complete Coverage)	800-2400	nm
Bandwidth	0.015 to 100	nm
Dispersion Rate	0.01 to 2000	ps <sup>2</sup>
High Order Dispersion Management	$\beta_2$ and $\beta_3$	
Reflectivity	Up to 99.0	%
Fiber Type	SM <sup>(1)</sup> , PM <sup>(2)</sup> and LMA <sup>(3)</sup>	
Package	Recoated and Loose Tube	

(1): Single Mode fiber

(2): Polarisation Maintaining fiber

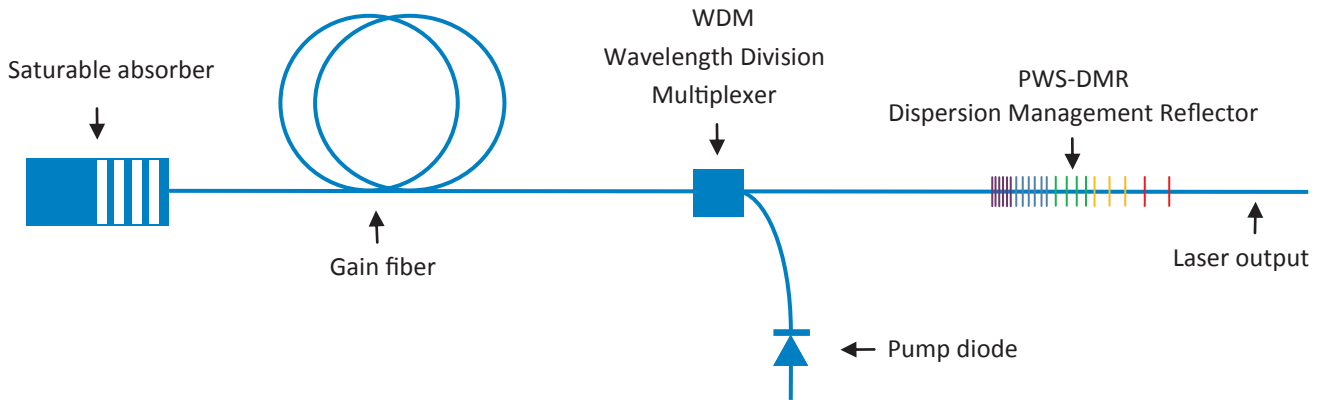
(3): Large Mode Area fiber

**PWS-DMR Please Select your Parameters when Ordering Customized Items**



<b>1 = Wavelength</b>
xxxx.x (nm)
<b>2 = Bandwidth @ -3 dB</b>
xxx.x (nm)
<b>3 = Reflectivity</b>
xx (%)
<b>4 = <math>\pm D_2, \pm \beta_2</math></b>
$\pm D_2 = Dxxxx$ (ps/nm)
$\pm \beta_2 = \betaxxxx$ (ps <sup>2</sup> )
<b>5 = <math>\pm D_3, \pm \beta_3</math></b>
$\pm D_3 = xxxx$ (ps/nm <sup>2</sup> )
$\pm \beta_3 = xxxx$ (ps <sup>3</sup> )
<b>6 = Fiber Type</b>
P1 = Polarization Maintaining (PM)
P2 = PM with Cladding Mode Suppression
S1 = Single Mode Non-PM (SM)
S2 = CMS Non-PM (SM)

## Ultrafast Oscillator



### Ordering information

The PWS-DMR can be ordered according to customer requirements or to specific standard configurations as featured in this document. For orders, questions, specific requirements or to learn more about TeraXion's products, contact us at

[info@teraxion.com](mailto:info@teraxion.com)

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