RightWave®
Dispersion Compensating Modules
Overview

Product Description
OFS RightWave dispersion compensating modules (DSCM) cover a wide range of applications over a broad wavelength spectrum. Dispersion compensating modules are offered for all common transmission fibers, operating in C- or L-band.
RightWave dispersion compensating modules offer superior PMD performance and excellent slope matching for any transmission fiber type, operating in any band.
The modules are based entirely on mature and reliable single mode optical fiber technology.
OFS RightWave dispersion compensating modules are available with any dispersion value required from -10 to -2000 ps/nm in either C- or L-band.

Applications
RightWave Dispersion Compensating modules are available for a wide variety of applications, including Ultra Long Haul, DWDM and Metro Networks.

Dimensions
Standard box: 224 x 238 x 45 mm
On spool: Various dimensions, please ask
Connectors: As requested

Optical Specifications
RightWave Dispersion Compensating Module solutions for different transmission fibers.

<table>
<thead>
<tr>
<th>Transmission Fiber</th>
<th>Corresponding Module</th>
<th>Band¹</th>
<th>Slope Compensation, DSCR²</th>
<th>Residual Dispersion³ [ps/nm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard SMF</td>
<td>EWBDK-C</td>
<td>C-band</td>
<td>100%</td>
<td>±0.15</td>
</tr>
<tr>
<td></td>
<td>EWBDK-L</td>
<td>L-band</td>
<td>100%</td>
<td>±0.25</td>
</tr>
<tr>
<td></td>
<td>EWBDK-CL</td>
<td>C+L-band</td>
<td>100%</td>
<td>±0.30</td>
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<tr>
<td></td>
<td>LLWBKD</td>
<td>C-band</td>
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<td>±0.15</td>
</tr>
<tr>
<td></td>
<td>HFDK</td>
<td>C-band</td>
<td>100%</td>
<td>±0.15</td>
</tr>
<tr>
<td></td>
<td>MicroDK</td>
<td>C-band</td>
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<td>±0.15</td>
</tr>
<tr>
<td>TrueWave®RS™</td>
<td>HSDK-C</td>
<td>C-band</td>
<td>65%</td>
<td>±0.15</td>
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<tr>
<td></td>
<td>EHSKD-C</td>
<td>C-band</td>
<td>100%</td>
<td>±0.15</td>
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<tr>
<td></td>
<td>HSDK-L</td>
<td>L-band</td>
<td>100%</td>
<td>±0.15</td>
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<tr>
<td>TrueWave®REACH</td>
<td>REACH DK-C</td>
<td>C-band</td>
<td>100%</td>
<td>~±0.05</td>
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<td>REACH DK-L</td>
<td>L-band</td>
<td>100%</td>
<td>~±0.05</td>
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<tr>
<td></td>
<td>REACH DK-CL</td>
<td>C+L-band</td>
<td>100%</td>
<td>~±0.15</td>
</tr>
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<td>TeraLight†</td>
<td>HSDK-C</td>
<td>C-band</td>
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<td></td>
<td>HSDK-L</td>
<td>L-band</td>
<td>120%</td>
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<tr>
<td>LEAF††</td>
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<td>100%</td>
<td>±0.20</td>
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<td>EHSKD-L</td>
<td>L-band</td>
<td>100%</td>
<td>±0.20</td>
</tr>
<tr>
<td>DSF</td>
<td>DSDK</td>
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<td>Per request</td>
<td>Please ask</td>
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<td>Dispersion trimming</td>
<td>DK+</td>
<td>Any</td>
<td>-</td>
<td>-</td>
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</tbody>
</table>

¹ C-band is 1530-1565 nm, L-band is 1570-1610 nm. Other wavelength ranges available upon request (and S-band).
² DSCR is Dispersion Slope Compensation Ratio, DSCR values are calculated based on the RDS data.
³ Residual dispersion normalized to the transmission fiber length. Calculated by averaging over 10 modules. A nominal transmission fiber is assumed, i.e., variation in dispersion of the transmission fiber is not considered.
† TeraLight is a registered trademark of Alcatel Inc.
†† LEAF is a registered trademark of Corning Inc.
Definition of Relative Dispersion Slope (RDS)

To achieve dispersion compensation at a specific wavelength the following equation must be satisfied:

\[ L_{TF} \cdot D_{TF} + L_{DCF} \cdot D_{DCF} = 0 \]

L_{TF} is the length of the transmission fiber, D_{TF} is the dispersion of the transmission fiber, L_{DCF} is the length of the dispersion compensating fiber, and D_{DCF} is the dispersion of the dispersion compensating fiber.

To achieve dispersion slope compensation the following equation must be satisfied:

\[ L_{TF} \cdot S_{TF} + L_{DCF} \cdot S_{DCF} = 0 \]

S_{TF} is the dispersion slope of the transmission fiber and S_{DCF} is the dispersion slope of the dispersion compensating fiber.

Combining the two equations and thereby getting both dispersion - and dispersion slope compensation yields:

\[ \text{RDS}_{DCF} = \frac{S_{DCF}}{D_{DCF}} = \frac{S_{TF}}{D_{TF}} \]

The Dispersion Slope Compensation Ratio, DSCR is defined as:

\[ \text{DSCR} = \frac{\text{RDS}_{DCF}}{\text{RDS}_{TF}} \]

Features

- Slope compensation of any transmission fiber operating in C- or L-band
- Low PMD
- No dispersion ripple
- Available with specification of Raman-related optical parameters
- Single mode fiber => No MPI due to higher order modes
- High reliability
- Robust and compact package
- Telcordia GR-2854 compliant
- Reliability according to Telcordia GR-1221-CORE
- Available with customer specified insertion loss and available with attenuators to provide fixed insertion loss

Related Product Data Sheets

Dispersion Compensating Modules for G.652
- EWBDK-C
- EWBDK-L
- EWBDK-CL
- LLWBDK-C
- HFDK
- MicroDK

Dispersion Compensating Modules for G.655
- HSDK-C
- HSDK-L
- EHSDK-C
- EHSDK-L
- REACH DK-C
- REACH DK-L
- REACH DK-CL
- UHSDK-C
- CSDK

Dispersion Compensating Modules for G.653
- DSDK-L

Positive Dispersion Compensating Modules
- DK+

For additional information or technical assistance, please contact one of our sales representatives:

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www.ofsoptics.com/product_info

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