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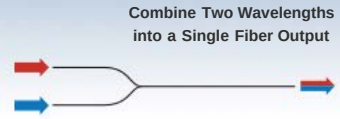
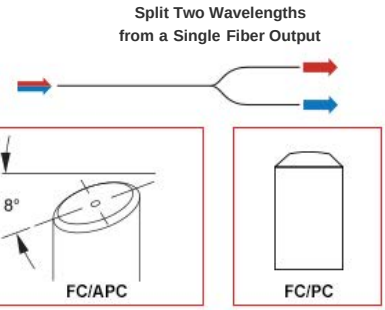
THORLABS

WD202E-APC - March 08, 2017

Item # WD202E-APC was discontinued on March 08, 2017. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

- Combine or Split Single Mode Signals by Wavelength
- Designed for Common NIR or Telecom Wavelengths
- 12 Wavelength Combinations Available
- Unterminated, FC/PC, or FC/APC Outputs





Hide Overview

OVERVIEW

Features

- Wavelength Division Multiplexers (WDMs) for Infrared Signals (≥980 nm)
- Combine or Split Two Wavelengths (See Table to the Right for Wavelength Combinations)
- Ideal for Fiber Lasers, Fiber Amplifiers, or Other Telecom Applications
- Combine 1050 nm or 1310 nm Signals with a Visible Alignment Beam
- Available with Bare Fiber Ends, FC/PC, or FC/APC Connectors (Other Connectors Upon Request)

Webpage Features
Clicking this info icon below will open a window that contains detailed specifications.

Quick Links
980 nm / 1030 nm
980 nm / 1053 nm
980 nm / 1060 nm
980 nm / 1310 nm
980 nm / 1550 nm
1050 nm / 635 nm[a]
1064 nm / 1310 nm
1310 nm / 660 nm[a]
1310 nm / 1550 nm
1480 nm / 1550 nm
1550 nm / 1625 nm
1600 nm / 1960 nm

Wavelength Division Multiplexers (WDMs) are used to combine or split two different single mode signals with low insertion loss. Thorlabs' WDMs featured on this page are manufactured using Fused Biconic Taper (FBT) technology and are designed for common NIR and telecom wavelengths (see the table to the right for options). They are an ideal solution for combining pump and signal wavelengths in fiber lasers and amplifiers or for combining telecom signals.

Because most WDMs are bidirectional, they can also be used to split two wavelengths entering the common port into two separate output ports. Thorlabs offers 1050 nm / 635 nm and 1310 nm / 660 nm WDMs that allow the IR signal to be combined with a visible alignment beam. However, since visible light is below the cut-off wavelength of the fiber in these WDMs, they are not bidirectional, and should not be used to split light. Thorlabs also offers single mode WDMs designed for 488 nm - 785 nm and polarization-maintaining WDMs.

Our WDMs are offered from stock with 2.0 mm narrow key FC/PC or FC/APC connectors or with unterminated leads. Other fiber types and select wavelength combinations are available upon request. If a custom connector configuration is needed, one-day turnaround is possible for small orders if the order is placed before 12 PM EST. Please contact Technical Support with inquiries. Thorlabs also offers a wide range of single mode fiber connectors and a fiber termination kit.

- These WDMs are designed to be used with a visible alignment beam. As these WDMs are multimode at the lower wavelength, they should not be used to split input light.

Other Wavelength Division Multiplexers (WDMs)				
2-Wavelength WDMs		3-Wavelength WDMs	Polarization Maintaining WDMs	Fused Fiber Couplers
Visible/NIR (λ ≤ 785 nm)	Infrared (λ ≥ 980 nm)	Visible/NIR	Infrared	

Hide WDM Design

WDM DESIGN

Wavelength Division Multiplexer Design

Thorlabs' Wavelength Division Multiplexers (WDMs) are designed to combine or split light at two different wavelengths. Thorlabs offers a variety of multiplexers with wavelength combinations spanning the visible, near-IR, and IR regions of the spectrum. Our visible wavelength division multiplexers are also known as "wavelength combiners" as they are commonly used in microscopy applications to generate multi-color composite images.

The animation to the right illustrates the basic operating principles of a 1x2 WDM. When combining light, the wavelength-specific ports will transmit light within a specified bandwidth region and combine them into a multi-wavelength signal output at the common port, with minimal loss in signal.

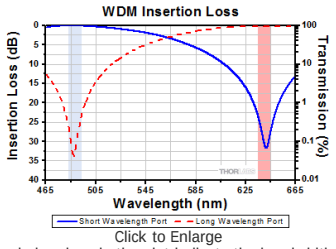
Except where indicated, our WDMs are bidirectional; they can also split a two-wavelength signal that is inserted into the common port into the component wavelengths. For optimal combining/splitting performance, the input signal(s) should contain only the wavelengths specified for the WDM. An insertion loss graph can help estimate the transmission and coupling performance within and outside the specified bandwidth. For our WDMs that have red, engraved housings, this data is included with the item-specific datasheet that ships with each coupler.

Insertion Loss and Isolation

WDM performance is typically quantified using insertion loss. As seen in the definition below, insertion loss (measured in dB) is the ratio of the input power to the output power from each leg of the WDM. For optical systems, the definition of insertion loss is given as:

$$\text{Insertion Loss}(dB) = 10 \log \frac{P_{in}(mW)}{P_{out}(mW)}$$

where P_{in} and P_{out} are the input and output powers (in mW).



Click to Enlarge

The shaded regions in the plot indicate the bandwidth where each port meets the specified performance.

Each port of the coupler is designed to have low insertion loss (i.e., high transmission) at the desired wavelength while suppressing the signal at the specified wavelength of the other port, which minimizes cross talk between the ports. Therefore, isolation is specified as the insertion loss of these undesired wavelengths. High dB values of isolation are ideal for signal separation applications using a WDM. For example, in the graph shown to the right, the long wavelength port (shown using a red dashed line) has a low insertion loss around 640 nm (indicated by the red shaded region), but exhibits high isolation (>25 dB) in the region specified for the short wavelength port (indicated by the light blue shaded region).

Wavelength Division Multiplexer Manufacturing Process

This section details the steps used in manufacturing and verifying the performance of our wavelength division multiplexers.

Step 1

At the first stage, two fibers are fused on a manufacturing station so that the two fiber cores are in close proximity. This allows light to propagate between the two fiber cores over the fused region in a process known as evanescent coupling. The fusing process is stopped once the desired insertion loss and isolation specifications are achieved.

Click to Enlarge

In the diagram, the fibers are color-coded; blue for the short wavelength port and red for the long wavelength port.

The output from the short wavelength port is monitored during the fusing process using a broadband source on one side and an optical spectrum analyzer (OSA) on the other. The insertion loss as a function of wavelength is calculated from the spectrum obtained from the OSA.

Step 2

To verify the WDM performance, the output is measured in the long wavelength port using a broadband source and OSA. By combining the plots obtained in steps 1 and 2, the insertion loss and isolation in each channel can be calculated.

Click to Enlarge

In the diagram, the fibers are color-coded; blue for the short wavelength port and red for the long wavelength port.

Hide Wavelength Division Multiplexers: 980 nm / 1030 nm

Wavelength Division Multiplexers: 980 nm / 1030 nm

- Combine or Split 980 nm and 1030 nm Signals
- ±5.0 nm Bandwidth
- Available with Unterminated Fiber Leads or with 2.0 mm Narrow Key FC/PC or FC/APC Connectors

The WD202F WDMs are designed for combining or splitting two signals at 980 nm and 1030 nm and feature a ±5.0 nm bandwidth around the center wavelength of each channel. They are available with no connectors or with 2.0 mm narrow key FC/PC or FC/APC connectors.

Item #	Info[a]	Operating Wavelengths	Bandwidth	Insertion Loss[b]	Isolation[b]	Polarization-Dependent Loss[b]	Directivity[b]	Fiber Type	Termination
WD202F		980 nm / 1030 nm	±5.0 nm	≤0.5 dB (Click for Plot)	≥12 dB	≤0.1 dB	>50 dB	OFS 980	No Connectors Scissor Cut
WD202F-FC									FC/PC
WD202F-APC									FC/APC

- Please click on the blue icon for complete specifications.
- These specifications were measured without connectors.

Part Number	Description	Price	Availability
WD202F	**Customer Inspired!980 nm / 1030 nm Wavelength Division Multiplexer, No Connectors**	**$279.00**	**Today**
WD202F-FC	**Customer Inspired!980 nm / 1030 nm Wavelength Division Multiplexer, FC/PC Connectors**	**$309.00**	**Today**
WD202F-APC	**Customer Inspired!980 nm / 1030 nm Wavelength Division Multiplexer, FC/APC Connectors**	**$340.00**	**Today**

Hide Wavelength Division Multiplexers: 980 nm / 1053 nm

Wavelength Division Multiplexers: 980 nm / 1053 nm

- Combine or Split 980 nm and 1053 nm Signals
- ±5.0 nm Bandwidth

- Available with Unterminated Fiber Leads or with 2.0 mm Narrow Key FC/PC or FC/APC Connectors

The WD202G WDMs are designed for combining or splitting two signals at 980 nm and 1053 nm and feature a ±5.0 nm bandwidth around the center wavelength of each channel. They are available with no connectors or with 2.0 mm narrow key FC/PC or FC/APC connectors.

Item #	Info[a]	Operating Wavelengths	Bandwidth	Insertion Loss[b]	Isolation[b]	Polarization-Dependent Loss[b]	Directivity[b]	Fiber Type	Termination
WD202G		980 nm / 1053 nm	±5.0 nm	≤0.3 dB (Click for Plot)	≥15 dB	≤0.1 dB	>50 dB	OFS 980	No Connectors Scissor Cut
WD202G-FC									FC/PC
WD202G-APC									FC/APC

- Please click on the blue icon for complete specifications.
- These specifications were measured without connectors.

Part Number	Description	Price	Availability
WD202G	**Customer Inspired!980 nm / 1053 nm Wavelength Division Multiplexer, No Connectors**	**$201.00**	**Today**
WD202G-FC	**Customer Inspired!980 nm / 1053 nm Wavelength Division Multiplexer, FC/PC Connectors**	**$232.00**	**Today**
WD202G-APC	**Customer Inspired!980 nm / 1053 nm Wavelength Division Multiplexer, FC/APC Connectors**	**$262.00**	**Today**

Hide Wavelength Division Multiplexers: 980 nm / 1060 nm

Wavelength Division Multiplexers: 980 nm / 1060 nm

- Combine or Split 980 nm and 1060 nm Signals
- ±5.0 nm Bandwidth
- Available with Unterminated Fiber Leads or with 2.0 mm Narrow Key FC/PC or FC/APC Connectors

The WD202E WDMs are designed for combining or splitting two signals at 980 nm and 1060 nm and feature a ±5.0 nm bandwidth around the center wavelength of each channel. They are available with no connectors or with 2.0 mm narrow key FC/PC or FC/APC connectors.

Item #	Info[a]	Operating Wavelengths	Bandwidth	Insertion Loss[b]	Isolation[b]	Polarization-Dependent Loss[b]	Directivity[b]	Fiber Type	Termination
WD202E		980 nm / 1060 nm	±5.0 nm	≤0.3 dB (Click for Plot)	≥15 dB	≤0.1 dB	>50 dB	OFS 980	No Connectors Scissor Cut
WD202E-FC									FC/PC
WD202E-APC									FC/APC

- Please click on the blue icon for complete specifications.
- These specifications were measured without connectors.

Part Number	Description	Price	Availability
WD202E	**Customer Inspired!980 nm / 1060 nm Wavelength Division Multiplexer, No Connectors**	**$215.00**	**3-5 Days**
WD202E-FC	**Customer Inspired!980 nm / 1060 nm Wavelength Division Multiplexer, FC/PC Connectors**	**$246.00**	**3-5 Days**
WD202E-APC	**Customer Inspired!980 nm / 1060 nm Wavelength Division Multiplexer, FC/APC Connectors**	**$276.00**	**3-5 Days**

Hide Wavelength Division Multiplexers: 980 nm / 1310 nm

Wavelength Division Multiplexers: 980 nm / 1310 nm

- Combine or Split 980 nm and 1310 nm Signals
- ±15.0 nm Bandwidth
- Includes a Product-Specific Data Sheet (Click Here for a Sample)
- HI1060 and HI1060 FLEX Fiber Options
- Available with Unterminated Fiber Leads or with 2.0 mm Narrow Key FC/PC or FC/APC Connectors

Click for Details

The housings of these WDMs are engraved with the Item # and port wavelengths. The common port is located on the single fiber side and has a white jacket.

The W980S330 WDMs are designed for combining or splitting two signals at 980 nm and 1310 nm and feature a ±15.0 nm bandwidth around the center wavelength of each channel. As seen in the image to the right, the red housing of these multiplexers is engraved with the Item # and the port wavelengths. A detailed test report is included with each WDM; click here for a sample data sheet. They are available with no connectors or with 2.0 mm narrow key FC/PC or FC/APC connectors.

These WDMs are available with HI1060 or HI1060 FLEX fiber. HI1060 fiber offers a Ø5.3 µm core size and a 0.14 NA, while HI1060 FLEX fiber offers a Ø3.4 µm core size, a 0.22 NA, and reduced bending loss relative to HI1060.

Item #	Info[a]	Operating Wavelengths	Bandwidth	Insertion Loss[b]	Isolation[b]	Polarization-Dependent Loss[b]	Directivity[b]	Fiber Type	Termination
W980S330B1A		980 nm / 1310 nm	±15.0 nm	≤0.4 dB (Click for Plot)	≥15 dB	≤0.2 dB	≥60 dB	HI1060 (0.14 NA)	No Connectors Scissor Cut
W980S330F1A									FC/PC
W980S330A1A									FC/APC
W980S330B1B		980 nm / 1310 nm	±15.0 nm	≤0.3 dB (Click for Plot)	≥15 dB	≤0.2 dB	≥60 dB	HI1060 FLEX (0.22 NA)	No Connectors Scissor Cut
W980S330F1B									FC/PC
W980S330A1B									FC/APC

- Please click on the blue icon for complete specifications.
- These specifications were measured without connectors.

Part Number	Description	Price	Availability
W980S330B1A	**980 nm / 1310 nm Wavelength Division Multiplexer, HI1060 Fiber, No Connectors**	**$225.00**	**Today**
W980S330F1A	**980 nm / 1310 nm Wavelength Division Multiplexer, HI1060 Fiber, FC/PC Connectors**	**$266.00**	**Today**
W980S330A1A	**980 nm / 1310 nm Wavelength Division Multiplexer, HI1060 Fiber, FC/APC Connectors**	**$266.00**	**Today**
W980S330B1B	**980 nm / 1310 nm Wavelength Division Multiplexer, HI1060 FLEX Fiber, No Connectors**	**$225.00**	**Today**
W980S330F1B	**980 nm / 1310 nm Wavelength Division Multiplexer, HI1060 FLEX Fiber, FC/PC Connectors**	**$266.00**	**Today**
W980S330A1B	**980 nm / 1310 nm Wavelength Division Multiplexer, HI1060 FLEX Fiber, FC/APC Connectors**	**$266.00**	**Today**

Hide Wavelength Division Multiplexers: 980 nm / 1550 nm

Wavelength Division Multiplexers: 980 nm / 1550 nm

- Combine or Split 980 nm and 1550 nm Signals
- ±10.0 nm Bandwidth
- Available with Unterminated Fiber Leads or with 2.0 mm Narrow Key FC/PC or FC/APC Connectors

The WD202A WDMs are designed for combining or splitting two signals at 980 nm and 1550 nm and feature a ±10.0 nm bandwidth around the center wavelength of each channel. They are available with no connectors or with 2.0 mm narrow key FC/PC or FC/APC connectors.

Item #	Info[a]	Operating Wavelengths	Bandwidth	Insertion Loss[b]	Isolation[b]	Polarization-Dependent Loss[b]	Directivity[b]	Fiber Type	Termination
WD202A		980 nm / 1550 nm	±10.0 nm	≤0.55 dB	≥19 dB	<0.1 dB	50.0 dB	HI1060 FLEX	No Connectors Scissor Cut
WD202A-FC									FC/PC
WD202A-APC									FC/APC

- Please click on the blue icon for complete specifications.
- These specifications were measured without connectors.

Part Number	Description	Price	Availability
WD202A	**980 nm / 1550 nm Wavelength Division Multiplexer, No Connectors**	**$201.00**	**Today**
WD202A-FC	**980 nm / 1550 nm Wavelength Division Multiplexer, FC/PC Connectors**	**$232.00**	**Today**
WD202A-APC	**980 nm / 1550 nm Wavelength Division Multiplexer, FC/APC Connectors**	**$262.00**	**Today**

Hide Wavelength Division Multiplexers: 1050 nm / 635 nm

Wavelength Division Multiplexers: 1050 nm / 635 nm

- Combine a 1050 nm Signal with a 635 nm Alignment Beam
- ±50 nm Bandwidth at 1550 nm
- Includes a Product-Specific Data Sheet (Click Here for a Sample)
- HI1060 and HI1060 FLEX Fiber Options
- Available with Unterminated Fiber Leads or with 2.0 mm Narrow Key FC/PC or FC/APC Connectors

Click for Details

The housings of these WDMs are engraved with the Item # and port wavelengths. The common port is located on the single fiber side and has a white jacket.

The W635S415 WDMs are designed for combining an alignment beam at around 635 nm with a 1050 nm signal. Because of the large ±50 nm bandwidth at 1050 nm, this multiplexer is ideal for applications in life science imaging. Unlike other WDMs on this page, light at 635 nm will be multimode in this WDM and therefore it is not reversible. They are available with no connectors or with 2.0 mm narrow key FC/PC or FC/APC connectors.

These WDMs are available with HI1060 or HI1060 FLEX fiber. HI1060 fiber offers a Ø5.3 µm core size and a 0.14 NA, while HI1060 FLEX fiber offers a Ø3.4 µm core size, a 0.22 NA, and reduced bending loss relative to HI1060.

Item #	Info[a]	Operating Wavelengths[b]	Bandwidth	Insertion Loss[c]	Isolation[c]	Polarization-Dependent Loss[c]	Directivity[c]	Fiber Type	Termination
W635S415B1A		1050 nm / 635 nm	±50 nm @ 1050 nm -5 / +45 nm @ 635 nm	≤0.3 dB @ 1050 nm (Click for Plot)	≥13 dB @ 1050 nm	≤0.2 dB	≥60 dB	HI1060 (0.14 NA)	No Connectors Scissor Cut
W635S415F1A									FC/PC
W635S415A1A									FC/APC
W635S415B1B				≤0.3 dB @ 1050 nm (Click for Plot)				HI1060 FLEX (0.22 NA)	No Connectors Scissor Cut
W635S415F1B									FC/PC
W635S415A1B									FC/APC

- Please click on the blue icon for complete specifications.
- These couplers are designed for single mode operation at 1050 nm and multimode operation at 635 nm, and are intended for alignment applications. They should not be used to split light.
- These specifications were measured without connectors.

Part Number	Description	Price	Availability
W635S415B1A	**1050 nm / 635 nm Wavelength Division Multiplexer, HI1060 Fiber, No Connectors**	**$312.00**	**Today**
W635S415F1A	**1050 nm / 635 nm Wavelength Division Multiplexer, HI1060 Fiber, FC/PC Connectors**	**$352.00**	**Today**

W635S415A1A	**1050 nm / 635 nm Wavelength Division Multiplexer, HI1060 Fiber, FC/APC Connectors**	**$352.00**	**Today**
W635S415B1B	**1050 nm / 635 nm Wavelength Division Multiplexer, HI1060 FLEX Fiber, No Connectors**	**$352.00**	**Today**
W635S415F1B	**1050 nm / 635 nm Wavelength Division Multiplexer, HI1060 FLEX Fiber, FC/PC Connectors**	**$352.00**	**Today**
W635S415A1B	**1050 nm / 635 nm Wavelength Division Multiplexer, HI1060 FLEX Fiber, FC/APC Connectors**	**$352.00**	**Today**

Hide Wavelength Division Multiplexers: 1064 nm / 1310 nm

Wavelength Division Multiplexers: 1064 nm / 1310 nm

- Combine or Split 1064 nm and 1310 nm Signals
- ±15.0 nm Bandwidth
- Includes a Product-Specific Data Sheet (Click Here for a Sample)
- HI1060 and HI1060 FLEX Fiber Options
- Available with Unterminated Fiber Leads or with 2.0 mm Narrow Key FC/PC or FC/APC Connectors

Click for Details
The housings of these WDMs are engraved with the Item # and port wavelengths. The common port is located on the single fiber side and has a white jacket.

The W1064S246 WDMs are designed for combining or splitting two signals at 1064 nm and 1310 nm and feature a ±15.0 nm bandwidth around the center wavelength of each channel. As seen in the image to the right, the red housing of these multiplexers is engraved with the Item # and the port wavelengths. A detailed test report is included with each WDM; click here for a sample data sheet. They are available with no connectors or with 2.0 mm narrow key FC/PC or FC/APC connectors.

These WDMs are available with HI1060 or HI1060 FLEX fiber. HI1060 fiber offers a Ø5.3 µm core size and a 0.14 NA, while HI1060 FLEX fiber offers a Ø3.4 µm core size, a 0.22 NA, and reduced bending loss relative to HI1060.

Item #	Info[a]	Operating Wavelengths	Bandwidth	Insertion Loss[b]	Isolation[b]	Polarization-Dependent Loss[b]	Directivity[b]	Fiber Type	Termination
W1064S246B1A		1064 nm / 1310 nm	±15 nm	≤0.4 dB (Click for Plot)	≥15 dB	≤0.2 dB	≥60 dB	HI1060 (0.14 NA)	No Connectors Scissor Cut
W1064S246F1A									FC/PC
W1064S246A1A									FC/APC
W1064S246B1B		1064 nm / 1310 nm	±15 nm	≤0.3 dB (Click for Plot)	≥15 dB	≤0.2 dB	≥60 dB	HI1060 FLEX (0.22 NA)	No Connectors Scissor Cut
W1064S246F1B									FC/PC
W1064S246A1B									FC/APC

- Please click on the blue icon for complete specifications.
- These specifications were measured without connectors.

Part Number	Description	Price	Availability
W1064S246B1A	**1064 nm / 1310 nm Wavelength Division Multiplexer, HI1060 Fiber, No Connectors**	**$225.00**	**Today**
W1064S246F1A	**1064 nm / 1310 nm Wavelength Division Multiplexer, HI1060 Fiber, FC/PC Connectors**	**$266.00**	**Today**
W1064S246A1A	**1064 nm / 1310 nm Wavelength Division Multiplexer, HI1060 Fiber, FC/APC Connectors**	**$266.00**	**Today**
W1064S246B1B	**1064 nm / 1310 nm Wavelength Division Multiplexer, HI1060 FLEX Fiber, No Connectors**	**$225.00**	**Today**
W1064S246F1B	**1064 nm / 1310 nm Wavelength Division Multiplexer, HI1060 FLEX Fiber, FC/PC Connectors**	**$266.00**	**Today**
W1064S246A1B	**1064 nm / 1310 nm Wavelength Division Multiplexer, HI1060 FLEX Fiber, FC/APC Connectors**	**$266.00**	**Today**

Hide Wavelength Division Multiplexers: 1310 nm / 660 nm

Wavelength Division Multiplexers: 1310 nm / 660 nm

- Combine 1310 nm Signal with a 660 nm Alignment Beam
- ±40 nm Bandwidth at 1310 nm
- Available with Unterminated Fiber Leads or with 2.0 mm Narrow Key FC/PC Connectors

The WD202A2 WDMs are designed for combining an alignment beam at around 660 nm with a 1310 nm signal. Because of the large ±40 nm bandwidth at 1310 nm, this multiplexer is ideal for applications in life science imaging. Unlike other WDMs on this page, light at 660 nm will be multimode in this WDM and therefore it is not reversible. They are available with no connectors or with 2.0 mm narrow key FC/PC connectors.

Item #	Info[a]	Operating Wavelengths[b]	Bandwidth	Insertion Loss[c]	Isolation[c]	Polarization-Dependent Loss[c]	Directivity[c]	Fiber Type	Termination
WD202A2		1310 nm / 660 nm	±40.0 nm	≤0.4 dB (Click for Plot)	≥19 dB	<0.1 dB	30 dB	SMF-28e	No Connectors Scissor Cut
WD202A2-FC									FC/PC

- Please click on the blue icon for complete specifications.
- These couplers are designed for single mode operation at 1310 nm and multimode operation at 660 nm, and are intended for alignment applications. They should not be used to split light.
- These specifications were measured without connectors.

Part Number	Description	Price	Availability
WD202A2	**1310 nm / 660 nm Wavelength Division Multiplexer, No Connectors**	**$279.00**	**Today**
WD202A2-FC	**1310 nm / 660 nm Wavelength Division Multiplexer, FC/PC Connectors**	**$358.00**	**Today**

Hide Wavelength Division Multiplexers: 1310 nm / 1550 nm

Wavelength Division Multiplexers: 1310 nm / 1550 nm

- Combine or Split 1310 nm and 1550 nm Signals
- ±20.0 nm Bandwidth
- Available with Unterminated Fiber Leads or with 2.0 mm Narrow Key FC/PC or FC/APC Connectors

The WD202B WDMs are designed for combining or splitting two signals at 1310 nm and 1550 nm and feature a ±20.0 nm bandwidth around the center wavelength of each channel. They are available with no connectors or with 2.0 mm narrow key FC/PC or FC/APC Connectors.

Item #	Info[a]	Operating Wavelengths	Bandwidth	Insertion Loss[b]	Isolation[b]	Polarization-Dependent Loss[b]	Directivity[b]	Fiber Type	Termination
WD202B		1310 nm / 1550 nm	±20.0 nm	≤0.5 dB (Click for Plot)	≥16 dB	<0.1 dB	50 dB	SMF-28e+	No Connectors Scissor Cut
WD202B-FC									FC/PC
WD202B-APC									FC/APC

- Please click on the blue icon for complete specifications.
- These specifications were measured without connectors.

Part Number	Description	Price	Availability
WD202B	**1310 nm / 1550 nm Wavelength Division Multiplexer, No Connectors**	**$123.00**	**Today**
WD202B-FC	**1310 nm / 1550 nm Wavelength Division Multiplexer, FC/PC Connectors**	**$153.00**	**Today**
WD202B-APC	**1310 nm / 1550 nm Wavelength Division Multiplexer, FC/APC Connectors**	**$184.00**	**Today**

Hide Wavelength Division Multiplexers: 1480 nm / 1550 nm

Wavelength Division Multiplexers: 1480 nm / 1550 nm

- Combine or Split 1480 nm and 1550 nm Signals
- ±5.0 nm Bandwidth
- Available with Unterminated Fiber Leads or with 2.0 mm Narrow Key FC/PC or FC/APC Connectors

The WD202C WDMs are designed for combining or splitting two signals at 1480 nm and 1550 nm and feature a ±5.0 nm bandwidth around the center wavelength of each channel. They are available with no connectors or with 2.0 mm narrow key FC/PC or FC/APC connectors.

Item #	Info[a]	Operating Wavelengths	Bandwidth	Insertion Loss[b]	Isolation[b]	Polarization-Dependent Loss[b]	Directivity[b]	Fiber Type	Termination
WD202C		1480 nm / 1550 nm	±5.0 nm	≤0.95 dB (Click for Plot)	≥10 dB	<0.3 dB	50.0 dB	SMF-28e+	No Connectors Scissor Cut
WD202C-FC									FC/PC
WD202C-APC									FC/APC

- Please click on the blue icon for complete specifications.
- These specifications were measured without connectors.

Part Number	Description	Price	Availability
WD202C	**1480 nm / 1550 nm Wavelength Division Multiplexer, No Connectors**	**$215.00**	**Today**
WD202C-FC	**1480 nm / 1550 nm Wavelength Division Multiplexer, FC/PC Connectors**	**$246.00**	**Today**
WD202C-APC	**1480 nm / 1550 nm Wavelength Division Multiplexer, FC/APC Connectors**	**$276.00**	**Today**

Hide Wavelength Division Multiplexers: 1550 nm / 1625 nm

Wavelength Division Multiplexers: 1550 nm / 1625 nm

- Combine or Split 1550 nm and 1625 nm Signals
- ±15.0 nm Bandwidth
- Available with 2.0 mm Narrow Key FC/PC or FC/APC Connectors

The WD202H WDMs are designed for combining or splitting two signals at 1550 nm and 1625 nm and feature a ±15.0 nm bandwidth around the center wavelength of each channel. They are available with 2.0 mm narrow key FC/PC or FC/APC connectors.

Item #	Info[a]	Operating Wavelengths	Bandwidth	Insertion Loss[b]	Isolation[b]	Polarization-Dependent Loss[b]	Directivity[b]	Fiber Type	Termination
WD202H-FC		1550 nm / 1625 nm	±15.0 nm	≤0.4 dB (Click for Plot)	≥16 dB	≤0.1 dB	>50 dB	SMF-28e+	FC/PC
WD202H-APC									FC/APC

- Please click on the blue icon for complete specifications.
- These specifications were measured without connectors.

Part Number	Description	Price	Availability
WD202H-FC	**Customer Inspired!1550 nm / 1625 nm Wavelength Division Multiplexer, FC/PC Connectors**	**$153.00**	**Today**
WD202H-APC	**Customer Inspired!1550 nm / 1625 nm Wavelength Division Multiplexer, FC/APC Connectors**	**$184.00**	**Today**

Hide Wavelength Division Multiplexers: 1600 nm / 1960 nm

Wavelength Division Multiplexers: 1600 nm / 1960 nm

- Combine or Split 1600 nm and 1960 nm Signals
- ±20.0 nm Bandwidth
- Available with Unterminated Fiber Leads or with 2.0 mm Narrow Key FC/PC or FC/APC Connectors

The WD202D WDMs are designed for combining or splitting two signals at 1600 nm and 1960 nm and feature a ±20.0 nm bandwidth around the center wavelength of each channel. They are available with no connectors or with 2.0 mm narrow key FC/PC or FC/APC connectors.

Item #	Info[a]	Operating Wavelengths	Bandwidth	Insertion Loss[b]	Isolation[b]	Polarization-Dependent Loss[b]	Directivity[b]	Fiber Type	Termination
WD202D		1600 nm / 1960 nm	±20.0 nm	≤0.80 dB	≥15 dB	<0.2 dB	45 dB	SMF-DS	No Connectors Scissor Cut
WD202D-FC									FC/PC
WD202D-APC									FC/APC

- Please click on the blue icon for complete specifications.
- These specifications were measured without connectors.

Part Number	Description	Price	Availability
WD202D	**Customer Inspired!1600 nm / 1960 nm Wavelength Division Multiplexer, No Connectors**	**$1,125.00**	**Today**
WD202D-FC	**1600 nm / 1960 nm Wavelength Division Multiplexer, FC/PC Connectors**	**$1,176.00**	**Today**
WD202D-APC	**1600 nm / 1960 nm Wavelength Division Multiplexer, FC/APC Connectors**	**$1,207.00**	**Today**

WD202E-APC - 980 nm / 1060 nm Wavelength Division Multiplexer, FC/APC Connectors

Specifications | Insertion Loss

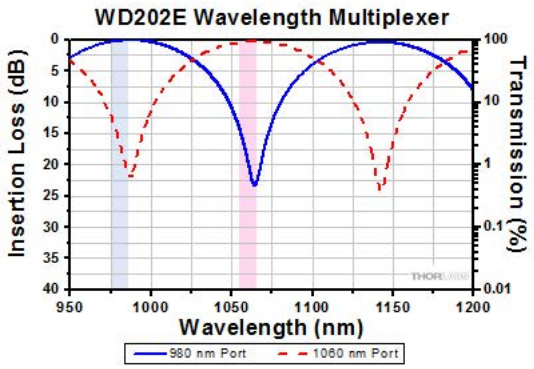
Specifications[a]	
Operating Wavelengths	980 nm / 1060 nm
Bandwidth	±5.0 nm
Insertion Loss	≤0.3 dB
Isolation	≥15 dB
Polarization-Dependent Loss (PDL)	≤0.1 dB
Directivity	>50 dB
CW Power (Max)	300 mW
Fiber Length	1 m
Jacket	Ø900 µm Loose Tube
Termination	2.0 mm Narrow Key FC/APC
Package Size	Ø3 mm x 65 mm
Operating Temperature	-40 to 85 °C
Storage Temperature	-50 to 85 °C

a. All specifications are measured without connectors.

Fiber Specifications[a]	
Fiber Type	OFS 980
Mode Field Diameter	5.0 ± 0.3 µm @ 980 nm
Cladding	125 ± 2.0 µm
Coating	245 ± 15 µm
Attenuation (Max)	≤3.0 dB/km @ 980 nm
Numerical Aperture	0.16

a. All specifications are measured without connectors.

Specifications | Insertion Loss



This plot shows an example of the spectral performance of a 980 nm / 1060 nm WDM. The lines represent the spectral response of each channel, while the blue and red shaded regions denote the bandwidth around each channel. This data is typical; performance of each coupler may vary within the coupler specifications. Data was obtained without connectors.