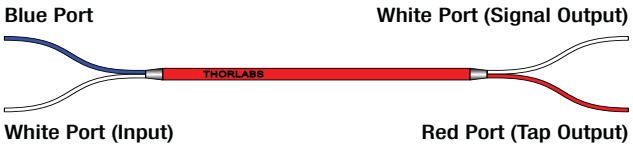
THORLABS



FINAL INSPECTION REPORT

Description: 75:25 Wideband Coupler
Item #: TW850R3A2
SN: T002276

Nominal Center Wavelength: 850 nm
Coupling Ratio Specification:
Signal Output: 71.25% - 78.75%
Tap Output: 21.25% - 28.75%
Minimum Bandwidth: ±100 nm
Max Power Level: 300 mW
Fiber Type: 780HP

Coupler Test Data[a]					
Excess Loss[b]	≤ 0.3 dB				
Input-Output Path	White (Input) – White (Signal Output)				
Wavelength[e]	726 nm	750 nm	850 nm	950 nm	959 nm
Coupling Ratio[c]	78.75%	76.90%	72.20%	77.80%	78.75%
Insertion Loss[d]	1.05 dB	1.16 dB	1.43 dB	1.12 dB	1.06 dB
Uniformity	0.4 dB	0.3 dB	0.1 dB	0.3 dB	0.4 dB
Input-Output Path	White (Input) – Red (Tap Output)				
Wavelength[e]	726 nm	750 nm	850 nm	950 nm	959 nm
Coupling Ratio[c]	21.25%	23.10%	27.80%	22.20%	21.25%
Insertion Loss[d]	6.72 dB	6.40 dB	5.58 dB	6.56 dB	6.73 dB
Uniformity	1.2 dB	0.9 dB	0.1 dB	1.0 dB	1.2 dB

a. All values are measured at room temperature without connectors through the white input port as indicated above; similar performance (≤ 0.05 dB difference) is achieved when the blue port is used as the input.

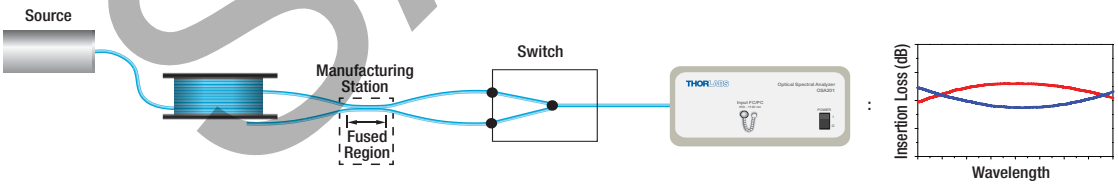
b. Ratio of the input optical power to the total optical power from all output ports. It is measured at the nominal center wavelength.

c. Does not include losses, as this is a measurement of the output power distribution only.

d. Includes both the split of the power between the two outputs, as well as any optical losses in the coupler.

e. These wavelengths indicate the range that meets the specified coupling ratio. It is shown by the gray shaded area on the accompanying graphs. Coupling ratio specification wavelength range may exceed measurement capabilities at the manufacturing station.

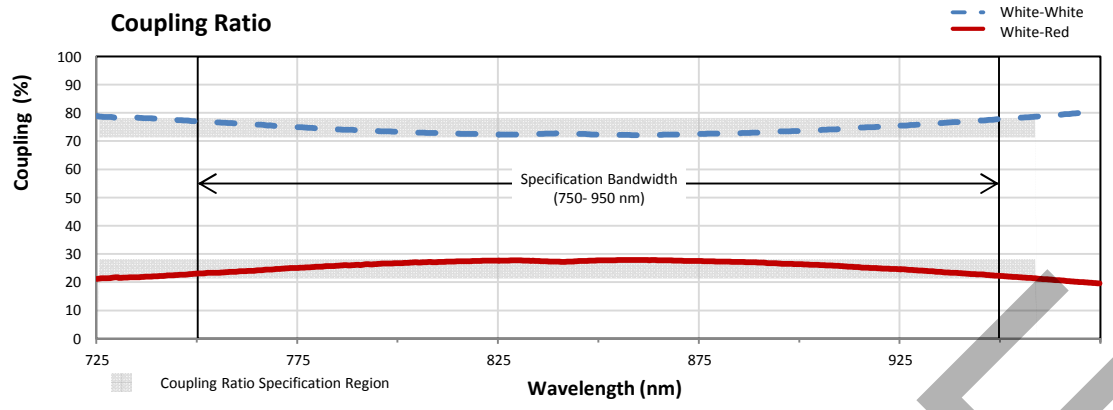
Verification Test Setup



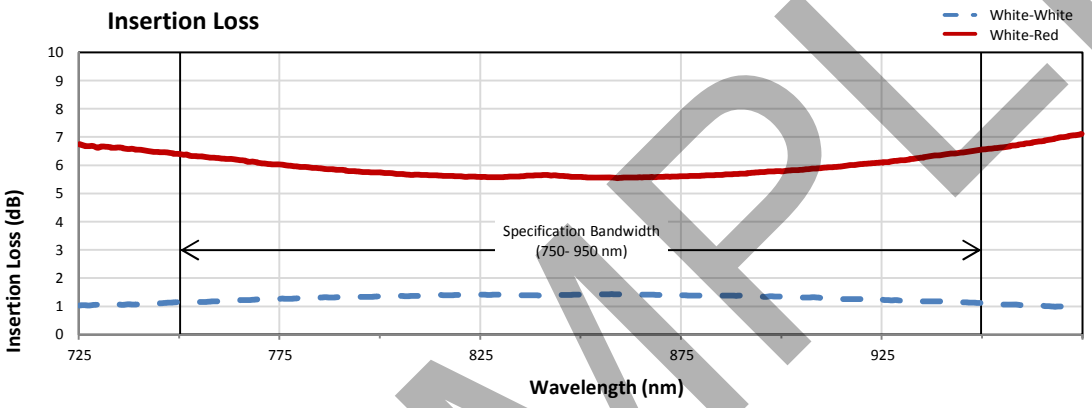
During Thorlabs' coupler manufacturing process, the spectral response of both output ports is monitored using an optical spectrum analyzer. Doing so ensures that the coupling ratio, insertion loss, uniformity, and excess loss meet or exceed the stated values over the specified wavelength range. While this coupler is specified as working across a 200 nm range, Thorlabs provides data across a wider wavelength range to provide insight into how this particular device would perform if used outside its guaranteed operating range. The out-of-band performance can vary from device to device.

Verified by: _____ Date: April 13, 2016

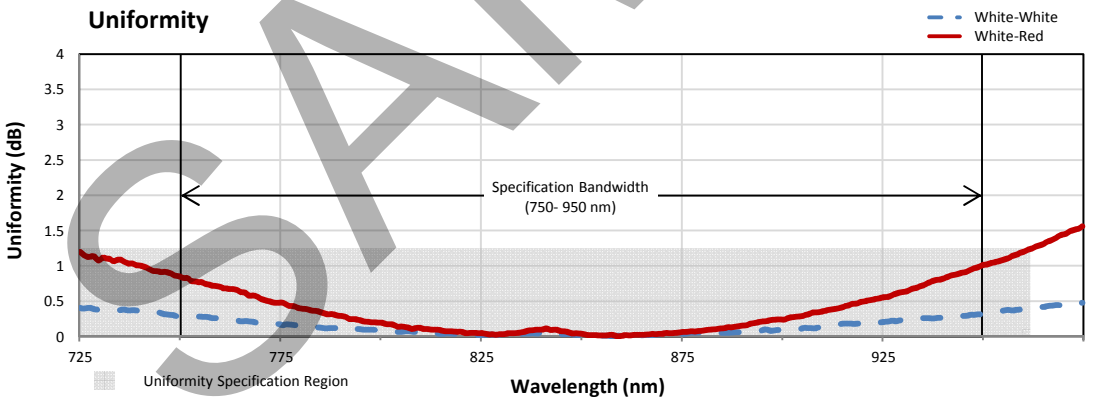
Coupler Test Data



Coupling ratio (%) is the ratio of the optical power from each output port to the sum of the total power of both output ports as a function of wavelength.



Insertion loss (dB) is the ratio of the input power to the output power from each leg of the coupler as a function of wavelength. It captures both the coupling ratio and the excess loss.



Uniformity is the variation (dB) of the insertion loss over the bandwidth. It is a measure of how evenly the insertion loss is distributed over the spectral range. The uniformity of the Signal Port (White-White) is the difference between the largest insertion loss within the specification bandwidth and the blue insertion loss curve (in the Insertion Plot above). The uniformity of the Tap Port (White-Red) is the difference between the red insertion loss curve and the smallest insertion loss within the specification bandwidth.