

Waveguide Mixers

WM780 SERIES

WM780 Series Waveguide Mixers

The Tektronix WM780 Series Waveguide Mixers cover a frequency range of 18 to 325 GHz with optimum flatness. Although designed specifically for use with the Tektronix 2790 Series Spectrum Analyzers, they are also compatible with most other spectrum analyzers. They can serve a wide variety of general-purpose uses, such as down-conversion for noise figure and network analysis measurements.

WM780 Series Waveguide Mixers feature individual frequency characterization curves attached to the housing for improved measurement accuracy.

All mixers are gold-plated brass, conforming to MIL-G-45204 Class I, Type 1 specifications, and will withstand harsh environments.

WM780 SERIES

- 18 to 325 GHz Frequency Range
- Frequency Response is ± 2 dB (2790 series)
- Precision Gold-Plated Brass Body
- Individual Frequency Characterization Curves Attached to Housing
- Custom Characterization Available

*Extended
Spectrum
Analyzer
Measurement
Capability from
18 GHz to
325 GHz.*

ELECTRICAL CHARACTERISTICS

| Tektronix Model No. | Band Desig. | Frequency Range (GHz) | Sensitivity* ¹ (dBm) | Frequency* ² Response (dB) | Conversion* ³ Loss Typical (dB) | Low-Pass* ⁶ Cutoff Frequency |
|---------------------|-------------|-----------------------|--|---------------------------------------|--|---|
| WM780K | K | 18-26.5 | -100 | ± 2 | 30 | 12 GHz |
| WM780A | A | 26.5-40 | -95 | ± 2 | 30 | 16 GHz |
| WM780Q | Q | 33-50 | -90 | ± 2 | 35 | 21 GHz |
| WM780U | U | 40-60 | -90 | ± 2.5 | 35 | 16 GHz |
| WM780V | V | 50-75 | -90 @ 50 GHz -85 @ 75 GHz typ | ± 3 * ⁴ typical | 35 @ 50 GHz 40 @ 75 GHz | 28 GHz |
| WM780E | E | 60-90 | -80 @ 60 GHz -80 @ 90 GHz typ | ± 3 * ⁴ typical | 35 @ 60 GHz 45 @ 90 GHz | 28 GHz |
| WM780W | W | 75-110 | -80 @ 75 GHz -70 @ 110 GHz typ | ± 3 * ⁴ typical | 45 @ 75 GHz 55 @ 110 GHz | 30 GHz |
| WM780F | F | 90-140 | -75 @ 90 GHz -65 @ 140 GHz typ | ± 3 * ⁴ typical | 50 @ 90 GHz 60 @ 140 GHz | 32 GHz |
| WM780D | D | 110-170 | -70 @ 110 GHz -60 @ 170 GHz typ | ± 3 * ⁴ typical | 50 @ 110 GHz 60 @ 170 GHz | 40 GHz |
| WM780G | G | 140-220 | -65 @ 140 GHz -55 @ 220 GHz typ | ± 3 * ⁴ typical | 55 @ 140 GHz 65 @ 220 GHz | 40 GHz |
| WM780J | J | 220-325 | -55 @ 220 GHz, * ⁵ -45 @ 325 GHz typ | ± 3 * ⁴ typical | 65 @ 220 GHz 75 @ 325 GHz | 40 GHz |

*¹ Equivalent average noise level (using a 2790 Series Spectrum Analyzer in 1 kHz resolution bandwidth).

*² Maximum amplitude variation across each waveguide mixer band (using a 2790 Series Spectrum Analyzer with peaking control optimized at each frequency in response to a -30 dBm CW input signal to the mixer).

*³ LO drive ± 10 dBm peaking control optimized.

*⁴ Over any 5 GHz bandwidth for millimeter wave mixers above 60 GHz.

*⁵ Value estimated at 325 GHz.

*⁶ These low-pass filters are in LO/IF connector.

APPLICATION

- Down Conversion
- Network Analysis Measurements

ORDERING INFORMATION

WM780 WAVEGUIDE MIXERS AND SETS

| | |
|-------------------------------|---------|
| 18 to 26.5 GHz - Order WM780K | \$1,690 |
| 26.5 to 40 GHz - Order WM780A | \$1,700 |
| 33 to 50 GHz - Order WM780Q | \$1,955 |
| 40 to 60 GHz - Order WM780U | \$2,325 |
| 50 to 75 GHz - Order WM780V | \$2,635 |
| 60 to 90 GHz - Order WM780E | \$2,860 |
| 75 to 110 GHz - Order WM780W | \$2,940 |
| 90 to 140 GHz - Order WM780F | \$3,140 |
| 110 to 170 GHz - Order WM780D | \$4,385 |
| 140 to 220 GHz - Order WM780G | \$4,490 |
| 220 to 325 GHz - Order WM780J | \$5,675 |

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|--|----------|
| 18 to 40 GHz Set - Includes WM780K, WM780A. Order WM7802 | \$3,150 |
| 18 to 60 GHz Set - Includes WM780K, WM780A, WM780U. Order WM7803 | \$5,320 |
| 33 to 170 GHz Set - Includes WM780Q, WM780V, WM780W, WM780D. Order WM78012. | \$11,680 |

ACCESSORIES

| | |
|---|-------|
| Diplexer Assembly - Required for 2790 Series. Order 015-0385-00 | \$320 |
| Diplexer Interconnecting Cable - Required for 2790 Series. 50 Ω , SMA-to-SMA. Order 012-0649-00 | \$41 |
| Case - Order 016-0465-01 | \$30 |

To order, contact your local sales office (listed on the inside back cover) or call the National Marketing Center at 1-800-426-2200, Ext. 99.