

RPG ZCWM-XX, RPG ZV-RUXX, RPG ZV-SMXX WAVEGUIDE CALIBRATION KITS

Specifications

Data Sheet | Version 01.00

ROHDE & SCHWARZ

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Definitions

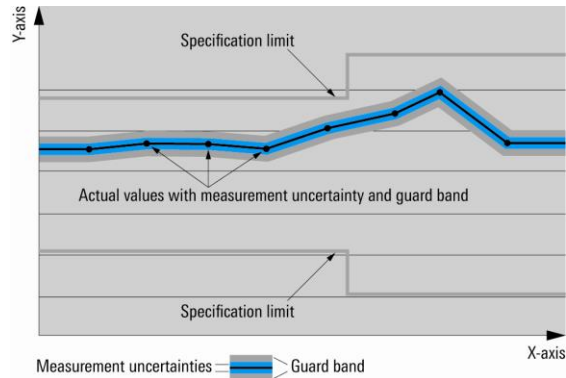
General

Product data applies under the following conditions:

- Three hours storage at ambient temperature followed by 30 minutes warm-up operation
- Specified environmental conditions met
- Recommended calibration interval adhered to
- All internal automatic adjustments performed, if applicable

Specifications with limits

Represent warranted product performance by means of a range of values for the specified parameter. These specifications are marked with limiting symbols such as $<$, \leq , $>$, \geq , \pm , or descriptions such as maximum, limit of, minimum. Compliance is ensured by testing or is derived from the design. Test limits are narrowed by guard bands to take into account measurement uncertainties, drift and aging, if applicable.



Specifications without limits

Represent warranted product performance for the specified parameter. These specifications are not specially marked and represent values with no or negligible deviations from the given value (e.g. dimensions or resolution of a setting parameter). Compliance is ensured by design.

Typical data (typ.)

Characterizes product performance by means of representative information for the given parameter. When marked with <, > or as a range, it represents the performance met by approximately 80 % of the instruments at production time. Otherwise, it represents the mean value.

Nominal values (nom.)

Characterize product performance by means of a representative value for the given parameter (e.g. nominal impedance). In contrast to typical data, a statistical evaluation does not take place and the parameter is not tested during production.

Measured values (meas.)

Characterize expected product performance by means of measurement results gained from individual samples.

Uncertainties

Represent limits of measurement uncertainty for a given measurand. Uncertainty is defined with a coverage factor of 2 and has been calculated in line with the rules of the Guide to the Expression of Uncertainty in Measurement (GUM), taking into account environmental conditions, aging, wear and tear.

Typical data as well as nominal and measured values are not warranted by Rohde & Schwarz.

Specifications

Measurement range

Frequency range	RPG ZV-RU78/RPG ZV-SM78	53 GHz to 78 GHz
	RPG ZV-RU118/RPG ZV-SM118	78 GHz to 118 GHz
	RPG ZV-RU178/RPG ZV-SM178	118 GHz to 178 GHz
	RPG ZCWM-1092	170 GHz to 260 GHz
	RPG ZCWM-710	260 GHz to 400 GHz
	RPG ZCWM-380	500 GHz to 750 GHz
	RPG ZCWM-250	750 GHz to 1100 GHz
Waveguide designator Electronic Industries Alliance (EIA)	RPG ZV-RU78/RPG ZV-SM78	waveguide dimension 3.6x1.8 mm
	RPG ZV-RU118/RPG ZV-SM118	waveguide dimension 2.4x1.2 mm
	RPG ZV-RU178/RPG ZV-SM178	waveguide dimension 1.6x0.8 mm
	RPG ZCWM-1092	WM 1092
	RPG ZCWM-710	WM 710
	RPG ZCWM-380	WM 380
	RPG ZCWM-250	WM 250
Connector type RPG ZCWM-xx	anti-cocking flange	precision waveguide flange compatible with UG387/U-M
Connector type RPG ZV-RUxxx	anti-cocking flange	VNIIFTRI flange compatible with 13317-89

Standards

Two different models for each calibration kit are available. One contains the calibration standards short, shim(s), and a fixed match; the other additionally includes a sliding match.

Length of short		0 mm
Length of shim	RPG ZV-RU78	1.538 mm \pm 5 μ m
	RPG ZV-RU118	1.025 mm \pm 5 μ m
	RPG ZV-RU178	0.695 mm \pm 5 μ m
	RPG ZCWM-1092	0.453 mm \pm 5 μ m
	RPG ZCWM-710	0.303 mm \pm 5 μ m
	RPG ZCWM-380	0.154 mm \pm 5 μ m
	RPG ZCWM-250	0.112 mm \pm 5 μ m
Return loss of fixed match	RPG ZV-RU78	> 30 dB, typ. > 35 dB
	RPG ZV-RU118	typ. > 35 dB
	RPG ZV-RU178	typ. > 30 dB
	RPG ZCWM-1092	> 30 dB, typ. > 35 dB
	RPG ZCWM-710	typ. > 30 dB
	RPG ZCWM-380	> 25 dB
	RPG ZCWM-250	> 20 dB
Return loss of sliding match	RPG ZV-SM78	> 30 dB, typ. > 35 dB
	RPG ZV-SM118	typ. > 35 dB
	RPG ZV-SM178	typ. > 30 dB
	RPG ZCWM-1092	> 30 dB, typ. > 35 dB
	RPG ZCWM-710	typ. > 30 dB
	RPG ZCWM-380	> 25 dB
	RPG ZCWM-250	> 20 dB

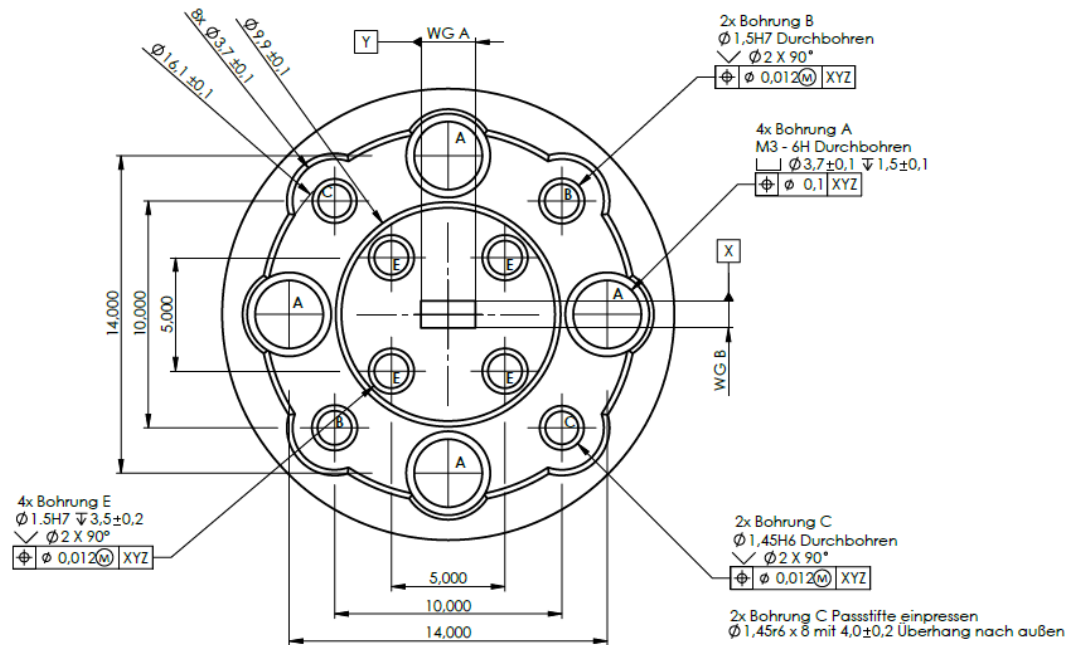


Figure 1: Drawing example of VNIIFTRI flange for RPG ZV-RU78, -RU118 & -RU178 with mechanical tolerances.

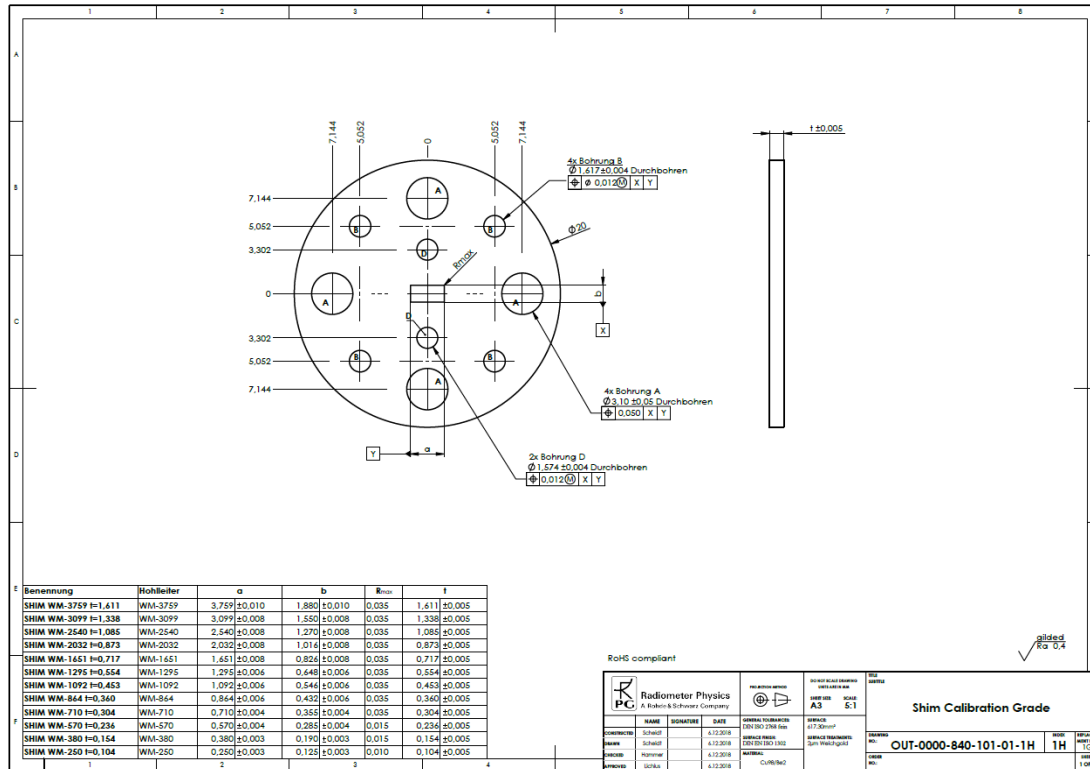


Figure 2: Outline Drawings of the WM Shims with mechanical tolerances

General data

Temperature loading	operating temperature range	+18 °C to +28 °C
	permissible temperature range	0 °C to +50 °C
	storage temperature range	−40 °C to +70 °C
Damp heat		+40 °C at 95 % rel. humidity
Calibration interval		1 year
Dimensions (W × D × H)		262 mm × 217 mm × 54 mm (10.3 in × 8.5 in × 2.1 in)
Weight	including case	1 kg (2.2 lb)
	shipping weight	3 kg (6.6 lb)

Ordering information

Designation	Type	Order No.
Waveguide Calibration Kit WG3.6x1.8, 53 GHz to 78 GHz (without sliding match)	RPG ZV-RU78	3626.5379.02
Sliding Match WG3.6x1.8, 53 GHz to 78 GHz	RPG ZV-SM78	1339.4087.02
Waveguide Calibration Kit WG2.4x1.2, 78 GHz to 118 GHz (without sliding match)	RPG ZV-RU118	3626.5385.02
Sliding Match WG2.4x1.2, 78 GHz to 118 GHz	RPG ZV-SM118	1339.4093.02
Waveguide Calibration Kit WG1.6x0.8, 118 to 178GHz (without sliding match)	RPG ZV-RU178	3630.2141.02
Sliding Match WG1.6x0.8, 118 to 178GHz	RPG ZV-SM178	1339.4106.02
Waveguide Calibration Kit WM-1092, 170 GHz to 260 GHz (without sliding match)	RPG ZCWM-1092	3628.5699.02
Waveguide Calibration Kit WM-1092, 170 GHz to 260 GHz (with sliding match)	RPG ZCWM-1092	1339.4135.02
Waveguide Calibration Kit WM-710, 260 GHz to 400 GHz (without sliding match)	RPG ZCWM-710	1339.4129.02
Waveguide Calibration Kit WM-710, 260 GHz to 400 GHz (with sliding match)	RPG ZCWM-710	1339.4112.02
Waveguide Calibration Kit WM-380, 500 GHz to 750 GHz (without sliding match)	RPG ZCWM-380	1322.3101.02
Waveguide Calibration Kit WM-380, 500 GHz to 750 GHz (with sliding match)	RPG ZCWM-380	
Waveguide Calibration Kit WM-250, 750 GHz to 1100 GHz (without sliding match)	RPG ZCWM-250	1322.3118.02

Designation	Type	Order No.
Waveguide Calibration Kit WM-250, 750 GHz to 1100 GHz (with sliding match)	RPG ZCWM-250	

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Rohde & Schwarz GmbH & Co. KG

www.rohde-schwarz.com

Regional contact

- ▶ Europe, Africa, Middle East | +49 89 4129 123 45
customersupport@rohde-schwarz.com
- ▶ North America | 1 888 TEST RSA (1 888 837 87 72)
customer.support@rsa.rohde-schwarz.com
- ▶ Latin America | +1 410 910 79 88
customersupport.la@rohde-schwarz.com
- ▶ Asia Pacific | +65 65 13 04 88
customersupport.asia@rohde-schwarz.com
- ▶ China | +86 800 810 82 28 | +86 400 650 58 96
customersupport.china@rohde-schwarz.com

Sustainable product design

- ▶ Environmental compatibility and eco-footprint
- ▶ Energy efficiency and low emissions
- ▶ Longevity and optimized total cost of ownership

Certified Quality Management

ISO 9001

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RPG ZCWM-xx, RPG ZV-RUxx, RPG ZV-SMxx Waveguide Calibration Kits
Data without tolerance limits is not binding | Subject to change
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