



All dimensions are in mm; tolerances according to ISO 2768 m-H

**Interface**

According to IEC 457-2

**Documents**

Application note AN001 "Calibration Services"

**Material and plating**

**Connector parts**

- Center conductor
- Outer conductor
- Body

**Material**

- CuBe
- Brass
- Stainless steel

**Plating**

- Gold, min. 1.27 µm, over chemical nickel
- Gold, min. 1.27 µm, over chemical nickel
- Passivated

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**Electrical data**

Insertion loss  $\leq 0.16$  dB, 0.3 GHz to 18 GHz

**Mechanical data**

Mating cycles  $\geq 5000$   
 Maximum torque 1.95 Nm  
 Recommended torque 1.36 Nm  
 Airline dimensions at 23 °C:  
 - Diameter outer conductor 7.000 mm  $\pm 0.005$  mm  
 - Diameter inner conductor 3.040 mm  $\pm 0.005$  mm  
 - Length outer conductor 68.00 mm + 0.02 mm  
 - Length inner conductor 68.00 mm - 0.02 mm  
 - Length difference  $\leq 0.04$  mm  
 (outer conductor – inner conductor)

**Calculated data (non warranted)**

Lossless characteristic impedance<sup>1</sup> 50  $\Omega \pm 0.15 \Omega$   
 Return loss<sup>2</sup>  $\geq 45$  dB, 0.3 GHz to 4 GHz  
 $\geq 40$  dB, 4 GHz to 18 GHz

1. The lossless characteristic impedance is calculated from the specified diameters of the inner and outer conductor.
2. The return loss is calculated from the characteristic impedance, the skin depth and the connector interface.

**General standard definitions**

For proper work the vector network analyzer (VNA) used needs a model describing the electrical behaviour of this calibration standard. Depending on the VNA type different models, units and terms are used and have to be entered into the VNA. All values are based on typical geometry and plating.

- Offset  $Z_0$  / Impedance /  $Z_0$  50  $\Omega$   
 - Offset Delay 226.964 ps  
 - Length (electrical) / Offset Length 68.042 mm  
 - Offset Loss 1.60 G $\Omega$ /s  
 - Loss 0.0315 dB/ $\sqrt{\text{GHz}}$

**Environmental data**

Operating temperature range<sup>3</sup> +20 °C to +26 °C  
 Storage temperature range 0 °C to +50 °C  
 RoHS compliant

3. This range is a recommendation. However, the airline can be used in a wider range. Any temperature change from 23 °C results in dimensional changes.

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**Declaration of calibration options**

**Factory Calibration**

Standard delivery for this calibration standard includes a Factory Calibration. The Calibration Certificate issued reports individual mechanical calibration results, traceable to national / international standards. Model based standard definitions are reported in an Agilent/Keysight, Rohde & Schwarz and Anritsu compatible VNA format.

**Accredited Calibration**

Not available.

*For further, more detailed information see application note AN001 on the Rosenberger homepage.*

**Calibration interval**

Recommendation 12 months

**Packing**

Standard 1 pce in box  
 Weight 60.6 g/pce  
 Center conductor loose in an acrylic glass tube

While the information has been carefully compiled to the best of our knowledge, nothing is intended as representation or warranty on our part and no statement herein shall be construed as recommendation to infringe existing patents. In the effort to improve our products, we reserve the right to make changes judged to be necessary.

Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
Herbert Babinger	20.08.04	Martin Moder	27.09.23	e00	23-1604	Matthias Gehl	27.09.23

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