



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 at 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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