



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

**Interface**

According to IEC 61169-54

**Contents and Documentation**

This kit is delivered with

- **Standard Definitions Card**  
Printed Standard Definitions that can be used on nearly all Vector Network Analyzers
- **Certificate of Testing**
- **Lanyard**
- **Hard Shell Case**
- **Protection Caps**
- **User Manual**

**Material and plating**

**Connector parts**

- Center conductor
- Outer conductor
- Body
- Dielectric
- Substrate

**Material**

- CuBe
- CuBe or equiv.
- Brass
- PTFE
- Al<sub>2</sub>O<sub>3</sub>

**Plating**

- Gold, min. 1.27 µm, over nickel
- Silver, 3-6 µm powder-coated

**Electrical data**

Frequency range DC to 6 GHz

**Open**

Return loss  $\leq 0.15$  dB, DC to 6 GHz  
 Error from nominal phase<sup>1</sup>  $\leq 2.0^\circ$ , DC to 6 GHz

**Short**

Return loss  $\leq 0.15$  dB, DC to 6 GHz  
 Error from nominal phase<sup>2</sup>  $\leq 2.0^\circ$ , DC to 6 GHz

**Load**

Return loss  $\geq 40$  dB, DC to 2.5 GHz  
 $\geq 38$  dB, 2.5 GHz to 6 GHz  
 DC-Resistance  $50 \Omega \pm 0.5 \Omega$   
 Power handling (at 25 °C, sea level)  $\leq 1.0$  W, derate by 0.01 W/K

<sup>1</sup> The nominal phase is defined by the Offset Delay, the Offset Loss and the Fringing Capacitances

<sup>2</sup> The nominal phase is defined by the Offset Delay, the Offset Loss and the Short Inductance

**Mechanical data**

Mating cycles  $\geq 100$   
 Maximum torque 5 Nm  
 Recommended torque 2 Nm  
 Gauge 3.10 mm to 3.25 mm

**General standard definitions**

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

**Open**

Offset  $Z_0$  / Impedance /  $Z_0$  50  $\Omega$   
 Offset Delay 66.946 ps  
 Length (electrical) / Offset Length 20.07 mm  
 Offset Loss 0.70 G $\Omega$ /s  
 Loss 0.0081 dB/  $\sqrt{\text{GHz}}$   
 Fringing Capacitances  $C_0 = -3.20000 \times 10^{-15}$  F / -3.20000 fF  
 $C_1 = 9995.00 \times 10^{-27}$  F/Hz / 9.99500 fF /GHz  
 $C_2 = -3420.00 \times 10^{-36}$  F/Hz<sup>2</sup> / -3.42000 fF /GHz<sup>2</sup>  
 $C_3 = 316.000 \times 10^{-45}$  F/Hz<sup>3</sup> / 0.31600 fF /GHz<sup>3</sup>

**Short**

Offset $Z_o$ / Impedance / $Z_o$	50 $\Omega$
Offset Delay	66.946 ps
Length (electrical) / Offset Length	20.07 mm
Offset Loss	0.70 G $\Omega$ /s
Loss	0.0081 dB/ $\sqrt{\text{GHz}}$
Short Inductance	$L_0 = -18.2000 \times 10^{-12} \text{ H} \quad / \quad -18.2000 \text{ pH}$
	$L_1 = -9995.00 \times 10^{-24} \text{ H/Hz} \quad / \quad -9.99500 \text{ pH/GHz}$
	$L_2 = 8220.00 \times 10^{-33} \text{ H/Hz}^2 \quad / \quad 8.22000 \text{ pH/GHz}^2$
	$L_3 = -958.000 \times 10^{-42} \text{ H/Hz}^3 \quad / \quad -0.95800 \text{ pH/GHz}^3$

**Load**

Offset $Z_o$ / Impedance / $Z_o$	50 $\Omega$
Offset Delay	0.0000 ps
Length (electrical) / Offset Length	0.000 mm
Offset Loss	0.00 G $\Omega$ /s
Loss	0.0000 dB/ $\sqrt{\text{GHz}}$

**Environmental data**

Operating temperature range <sup>3</sup>	0 °C to +50 °C
Storage temperature range	-55 °C to +90 °C
RoHS	compliant

<sup>3</sup> Temperature range over which these specifications are valid.

**Declaration of documentation**

Standard delivery for this kit includes Test Results. The documentation issued reports which quantities were tested individually, traceable to national / international standards. Model based standard definitions of the calibration standards are reported in Agilent / Keysight, Rohde & Schwarz and Anritsu compatible VNA format.

**Inspection interval**

Recommendation 12 months

**Packing**

Weight 203 g/pce

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.

For the installation of the electrotechnical equipment, particular electrotechnical expertise is required.



Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
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