

The Dutch Accreditation Council RvA, by law appointed as the national accreditation body for The Netherlands, hereby declares that accreditation has been granted to:

**TRESCAL Zoetermeer B.V.
Technical Operations
Zoetermeer**

The organisation has demonstrated to be able to generate technical valid results in a competent way and work according to a management system.

This accreditation is based on an assessment against the requirements as laid down in EN ISO/IEC 17025:2017.

The accreditation covers the activities as specified in the authorized annex bearing the registration number.

The accreditation is valid provided that the organisation continues to meet the requirements.

The accreditation with registration number:

K 052

is granted on 12 September 1989

This declaration is valid until

1 March 2022

The board of the Dutch Accreditation Council,
on its behalf,



mr. J.A.W.M. de Haas

Annex to declaration of accreditation (scope of accreditation)
Normative document: EN ISO/IEC 17025:2017
Registration number: **K 052**

of **TRESCAL Zoetermeer B.V.**
Technical Operations

This annex is valid from: **05-06-2020** to **01-03-2022**

Replaces annex dated: **19-02-2020**

HCS code	Measured quantity, Range	Frequency	CMC ¹	Remarks	Location

OQ 10	Optical quantities				
OQ 13	Optical wavelength	1511 – 1542 nm	0.2 pm	Calibration of wavelength with a wavelength reference cell, fixed wavelengths	

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HCS code	Measured quantity, Range	Frequency	CMC ¹	Remarks	Location
		840 – 860 nm 1270 – 1650 nm	0.4 pm 0.4 pm	Calibration of wavelength in combination with a reference wavelength meter	
		840 – 860 nm 1270 – 1650 nm	0.4 pm 0.4 pm	Measurement of wavelength with a reference wavelength meter	
		600 – 1530 nm	300 ppm	Measurement of wavelength with an optical spectrum analyser	
OQ 1 5	Optical Power				ZTM
	-5 dBm to -55 dBm (316 µW to 3.16 nW)	850 nm	0.09 dB (≈2.0 %)	Measurement and Calibration	
	-5 dBm to -55 dBm (316 µW to 3.16 nW)	1300 nm	0.13 dB (≈3.0 %)		
	+3 dBm to -55 dBm (2 mW – 3.16 nW)	1310 nm	0.09 dB (≈2.0 %)		
	+3 dBm to -55 dBm (2 mW – 3.16 nW)	1550 nm	0.09 dB (≈2.0 %)		
	-5 dBm to -55 dBm (316 µW – 3.16 nW)	1625 nm	0.10 dB (≈2.3 %)		
	-5 dBm to -55 dBm (316 µW to 3.16 nW)	850 nm	0.05 dB	Linearity calibration relative to -10 dBm	
	-5 dBm to -55 dBm (316 µW to 3.16 nW)	1300 nm	0.05 dB		
	+3 dBm to -55 dBm (2 mW- 3.16 nW)	1310 nm	0.05 dB		
	+3 dBm to -55 dBm (2 mW- 3.16 nW)	1550 nm	0.05 dB		
	-5 dBm to -55 dBm ((316 µW – 3.16 nW)	1625 nm	0.05 dB		

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HCS code	Measured quantity, Range	Frequency	CMC ¹	Remarks	Location
	0 dB to 45 dB	850 nm	0.06 dB	Measurement of incremental loss	
	0 dB to 45 dB	1300 nm	0.06 dB		
	0 dB to 55 dB	1310 nm	0.05 dB		
	0 dB to 55 dB	1550 nm	0.05 dB		
	0 dB to 50 dB	1625 nm	0.05 dB		

Electrical and optical calibrations are performed at nominal 23 °C.

The CMC in RF and Microwave measurements are applicable to instruments with a characteristic impedance of nominal 50 Ohm

- 1) Measurements are performed at a fixed set of measurement frequencies;
- 2) Calibration factor is applicable to measurements relative to 50 MHz;
- 3) CMC is calculated for a test object VSWR of 1.01 and the maximal VSWR for the uncertainty calculation is 1.35;
- 4) CMC is calculated for a test object with a typical VSWR of 1 to 1.27;

The measurements are carried out inside Trescal BV 's laboratory or in another location (on site).