

CALIBRATION CERTIFICATE

Customer: HANS FOLSGAARD AS	Address: THEILGAARDS ALLE 11 4600 KOGE DENMARK
Description: Optical Time Domain Reflectometer (OTDR)	
Serial no.: 1033999	Model no.: 720C-Q1-EA-EI
Calibration location: Winchester House, School Lane, Chandlers Ford, Eastleigh, Hampshire, SO53 4DG, UK	Calibration date: 2021-08-09

As found					
<input type="checkbox"/> Initial calibration	<input type="checkbox"/> Within specifications (i)	<input type="checkbox"/> Within specifications* (ii)	<input type="checkbox"/> Outside specifications* (iii)	<input type="checkbox"/> Outside specifications (iv)	<input checked="" type="checkbox"/> Defective operation
*See results page for details on "As found" status					
Comments on unit status:					
Action taken					
<input type="checkbox"/> No adjustment was made		<input checked="" type="checkbox"/> Adjustments were made		<input checked="" type="checkbox"/> Repair was performed	
As left					
<input checked="" type="checkbox"/> Within specifications			<input type="checkbox"/> Outside specifications		
Calibration conditions					
Temperature: 23 °C ± 2 °C					
Standard(s) used to establish traceability					
Description	Inventory number	Calibration date	Calibration validity		
Standard(s) used for "As found" measurements					
Standard(s) used for "As left" measurements					
METAS Length Reference Fiber MM	LRF2015.18	2015-12-09	Indefinite		
METAS Length Reference Fiber SM	LRF2013.01	2013-02-06	Indefinite		

Remarks:
 Optical ports are always cleaned before calibration.
 EXFO certifies that the unit has been calibrated using standards traceable to a national metrology institute (NIST, NPL, NRC, METAS or other), natural physical constants or using ratio measurements. NIST is the National Institute of Standards and Technology in the USA, NPL is the National Physical Laboratory in the UK, NRC is the National Research Council in Canada and METAS is the Swiss Federal Institute of Metrology. All uncertainties are reported with a level of confidence of 95 %. Calibration is based on the ISO/IEC 17025 standard.
 The certificate shall not be reproduced, except in full, without the written approval of EXFO.

John Smythe
 Calibration operator

2021-08-09
 Date

Dynamic range test (Single Mode)			
Procedure: IETA-00366 (pulse: 10 μ s, range: 240 km, time: 45 s)			
Nominal wavelength (nm)	Measured dynamic range (dB)	Conformance tolerance (dB)	Verification
As found			
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
As left			
1310	37.4	35.7	Pass
1550	36.2	34.1	Pass

Attenuation dead zone test (Single Mode)			
Procedure: IETA-00366 (pulse: 10 ns, range: 0.65 km, reflectance: -45 dB)			
Nominal wavelength (nm)	Measured attenuation dead zone (m)	Conformance tolerance (m)	Verification
As found			
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
As left			
1310	4.25	4.96	Pass
1550	4.49	5.16	Pass

Event dead zone test (Single Mode)			
Procedure: IETA-00366 (pulse: 3 ns, range: 0.65 km, reflectance: -45 dB)			
Nominal wavelength (nm)	Measured event dead zone (m)	Conformance tolerance (m)	Verification
As found			
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
As left			
1310	0.61	0.73	Pass
1550	0.61	0.75	Pass

Distance calibration (Single Mode)							
Procedure: IETA-00366 (pulse: 30 ns, range: 3.5 km, time: 15 s)							
Nominal wavelength (nm)	Measured length (m)	Reference length (m)	Deviation (m)	Uncertainty (m)	Specification (m)	Conformance tolerance (m)	Verification*
As found							
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
As left							
1310	2352.24	2352.17	0.07	0.06	0.97	0.92	i
1550	2353.20	2353.08	0.12	0.28	0.97	0.74	i

Linearity test (Single Mode)		
Procedure: IETA-00366 (wavelength: 1310 nm, pulse: 10 μ s, range: 21.8 dB, time: 45 s)		
Measured non linearity (dB/dB)	Conformance tolerance (dB/dB)	Verification
As found		
N/A	N/A	N/A
As left		
0.03	0.03	Pass

Dynamic range test (Multi Mode)			
Procedure: IETA-00366 (pulse: 1 μ s, range: 5 km, time: 45 s)			
Nominal wavelength (nm)	Measured dynamic range (dB)	Conformance tolerance (dB)	Verification
As found			
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
As left			
850	25.9	24.8	Pass
1300	28.6	26.7	Pass

Attenuation dead zone test (Multi Mode)			
Procedure: IETA-00366 (pulse: 10 ns, range: 0.65 km, reflectance: -35 dB)			
Nominal wavelength (nm)	Measured attenuation dead zone (m)	Conformance tolerance (m)	Verification
As found			
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
As left			
850	2.96	3.50	Pass
1300	3.44	4.00	Pass

Event dead zone test (Multi Mode)			
Procedure: IETA-00366 (pulse: 3 ns, range: 0.65 km, reflectance: -35 dB)			
Nominal wavelength (nm)	Measured event dead zone (m)	Conformance tolerance (m)	Verification
As found			
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
As left			
850	0.50	0.58	Pass
1300	0.49	0.56	Pass

Distance calibration (Multi Mode)							
Procedure: IETA-00366 (pulse: 30 ns, range: 3.5 km, time: 15 s)							
Nominal wavelength (nm)	Measured length (m)	Reference length (m)	Deviation (m)	Uncertainty (m)	Specification (m)	Conformance tolerance (m)	Verification*
As found							
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
As left							
850	102.83	102.77	0.06	0.09	0.91	0.84	i
1300	102.51	102.36	0.15	0.07	0.91	0.86	i

Linearity test (Multi Mode)		
Procedure: IETA-00366 (wavelength: 850 nm, pulse: 1 μ s, range: 12.9 dB, time: 45 s)		
Measured non linearity (dB)	Conformance tolerance (dB/dB)	Verification
As found		
N/A	N/A	N/A
As left		
-0.01	0.03	Pass



OTDR Self-Test
Procedure: IETA-00366
Status (Pass/Fail)
As found
N/A
As left
Pass

* Verification status legend:

i) Within specifications;

ii) Within specifications: All measured results are within specifications limits. In conformance with ISO/IEC 17025, full compliance cannot be stated because of measurement uncertainties. Nevertheless, results indicate that the instrument is likely to perform according to specifications;

iii) Outside specifications: Some measured results are outside specification limits. Nevertheless, as per ISO/IEC 17025, non compliance cannot be stated because of measurement uncertainties;

iv) Outside specifications.

Unless otherwise stated, 100 % of shipped units have all "As left" results in case i.



Instrument Service Report

RMA number: 718801
RMA issued by: Connection Web request
Service order number: 4256225
Service provided: Standard repair on MAX-720C-Q1

Customer and Product Information

Company name: HANS FOLSGAARD AS
Product family: MAX-720C
Unit serial number: 1033999

Technical Service and Information

Problem(s) found: Buttons/touchscreen malfunction

Technician action(s): Electronic subassembly replacement
Connector/bulkhead replacement(s)
Calibration
Electronic adjustement
Verification test
Unit Cleaning

Service History

Your RMA number was issued on: July 12,2021
Your PO was received on: July 12,2021
Your instrument was received at our facility on: July 19,2021
Work on your instrument was finished on: August 10,2021
Your instrument was shipped back on: August 11,2021

Thank you for doing business with EXFO!

Best regards,

Your customer service representative:

TIM MARECHA (ext.)
rmaemea@exfo.com

All repair services that appear on this report are covered by a 90-day warranty.