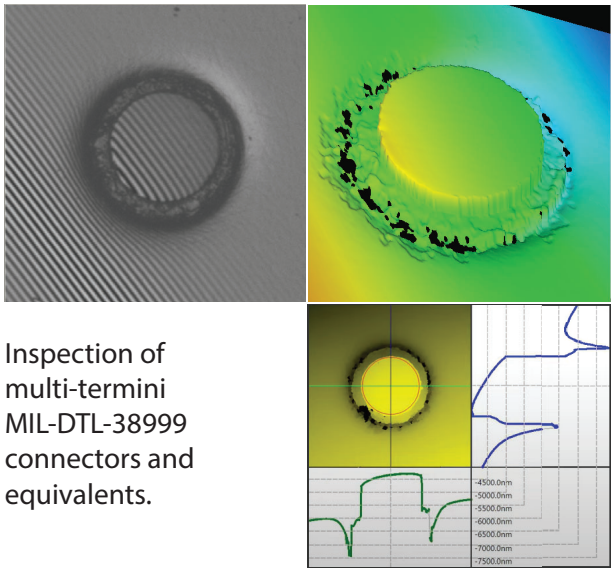
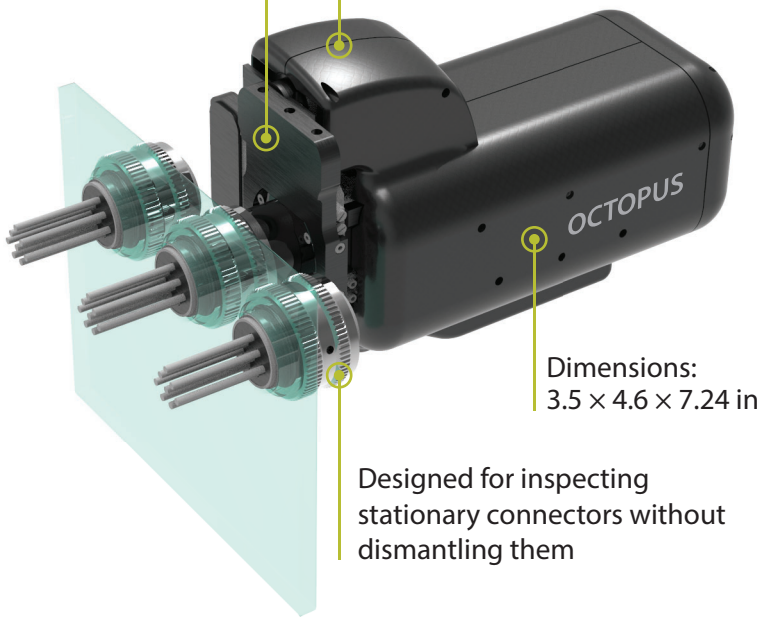
SUMIX

02/22/2022

Robotic interferometer for maintenance inspection of multi-termini fiber optic connectors



Inspection of multi-termini MIL-DTL-38999 connectors and equivalents.



Inspect mounted MIL style connectors in 3D. Ensure reliability and accurate performance of a critical connection.

End face inspection of MIL style connections is crucial as they are used in mission-critical systems demanding high optical performance and are continuously exposed to vibration, temperature cycling, repeated mating, and other harsh environmental conditions.

For critical applications, 2D evaluation of a terminus end face would be insufficient. Additional inspection must be performed by interferometry to:

- obtain 3D information about the defect that can't be removed by cleaning;
- detect fiber chips and cracks;
- register fiber height change of connectors over time to avoid mating issues.

Sumix OCTOPUS robotic interferometer uses a multi-axis motion system allowing geometry inspection of fiber optic termini inside military and harsh environment connectors installed in patch-panels, server boxes, and other optical-network units on board of an aircraft or marine vessel.

PATENTED

Application

- Aerospace, marine and military vehicle field service;
- On-site inspection in harsh environments like oil & gas, backbone telecom etc.

Specification

Connectors inspected:	MIL-DTL-38999 and other MIL style and harsh environment connectors
Field of view:	D = 1.6 mm
Area covered:	Y, X-axis motion: ± 14 mm
Optical resolution:	3.2 µm
Magnification:	300×
Focus:	Autofocus
Focus range:	4 mm
Measurement mode:	white light
Power supply:	external, USB 3.0 cable, 12 V DC power adapter
Dimensions (H × W × L):	90 × 118 × 184 mm (3.5 × 4.6 × 7.24 in)
Weight:	1.26 kg (2.78 lbs)
Compatible with:	desktop PC, laptop, tablet
Operating system:	Windows 10

NIST traceable factory calibration

Capabilities

- Fiber Height and Radius of Curvature measurement
- 3D anomalies detection.

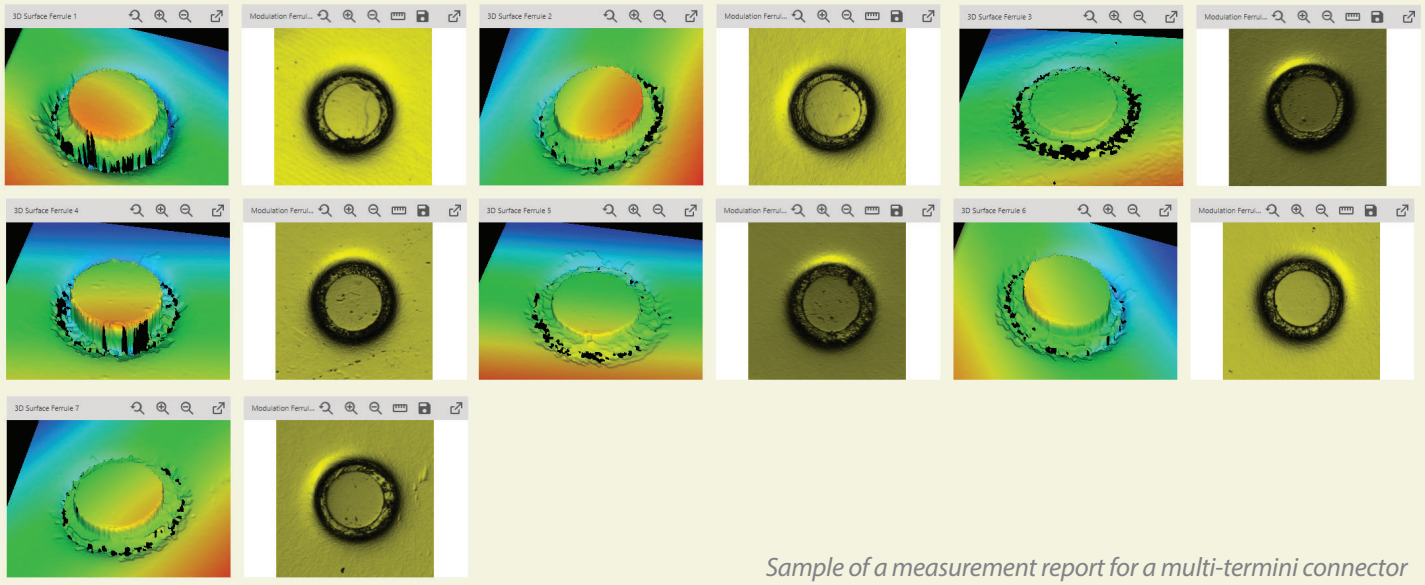
Name:	Result7747
Date & Time:	4/14/2021 10:42:7 AM
Task name:	MiniInterferometer SF scenario.
Device SN, Fixture SN:	MINI 65003
Connector ID:	
Customer:	
Technician:	Mykola
Company:	Sumix

FIBERS

Measurement Parameter	Units	Pass/Fail Limits		Fiber Number / Measured Value / Verdict						
		Min	Max	1	2	3	4	5	6	7
Height	nm			1571.92	2192.13	1343.22	1692.61	1614.40	2556.26	1728.28
ROC	mm			17.56	8.08	8.85	3.02	15.78	16.27	4.89

MaxInspect

Industry-leading MaxInspect™ software



Sample of a measurement report for a multi-termini connector