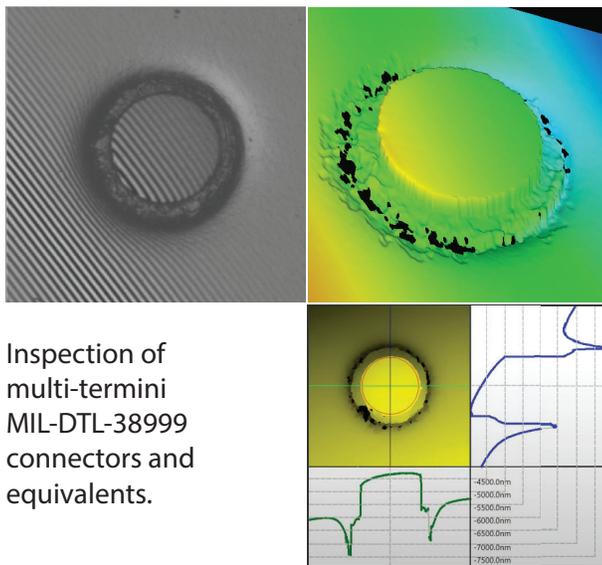


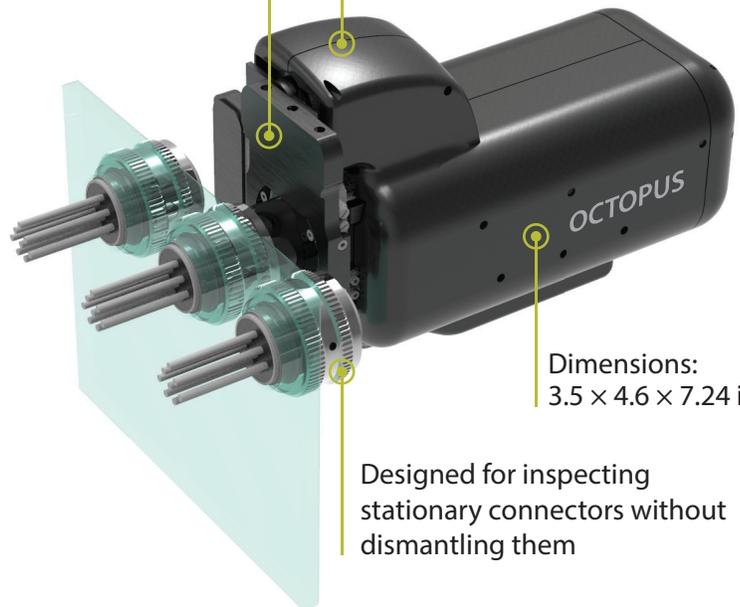
# Robotic interferometer for maintenance inspection of multi-termini fiber optic connectors

Automated focusing and movement from one terminus to another in a multi-core connector

Compact handheld design for limited space applications



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



Dimensions:  
3.5 × 4.6 × 7.24 in

Designed for inspecting stationary connectors without dismantling them

## 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 calibration

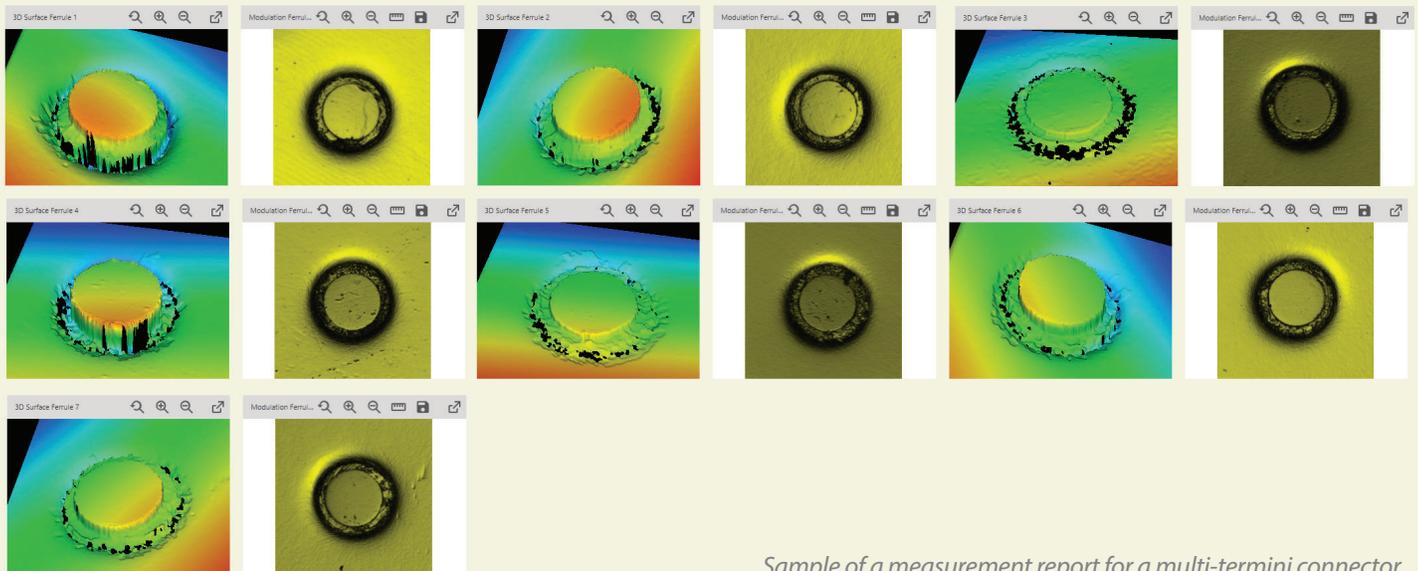
# Capabilities

- 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	



Sample of a measurement report for a multi-termini connector