

SPINDLE ERROR SCOPE



TECHNICAL FEATURES:

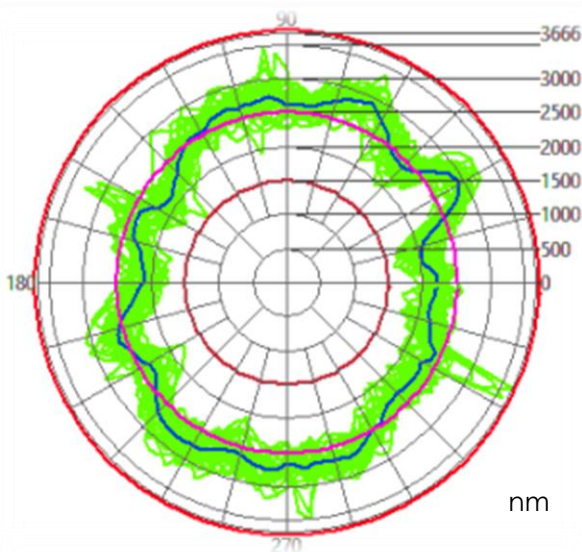
The Spindle Error Scope is standalone module developed by CMTI for **measurement and analysis of spindle running accuracies**. The measurements of spindle error motions can be carried out **as per international standards (ASME B5.54, ISO 230-7) using this analyzer**. The system can measure geometrical errors (axial, radial & tilt) of spindles with both fixed and rotating sensitive directions. The analysis can separate the errors (synchronous and asynchronous). The frequency analysis can help in identification of the source of error. The analyzer can be also used to measure and analyze thermal drifts.



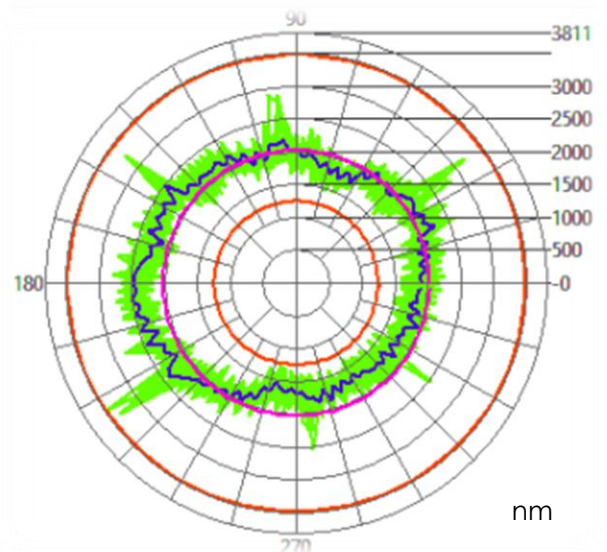
Test Setup



Portable Spindle Error Scope



Radial Error Polar Plot



Axial Error Polar Plot

APPLICATIONS:

- ✓ All Machine Tool Spindle Manufacturers
- ✓ All Machine Tool Manufacturers
- ✓ All spindle testing and repair organizations
- ✓ Machine tool testing and certification agencies



SPINDLE ERROR SCOPE




SALIENT FEATURES:

- ❖ Standalone system with modules for fixed and rotating sensitive direction spindles
- ❖ Non-Contact displacement measurement through ultra precision capacitive probes
- ❖ Data acquisition with NI-DAQ with 24bit resolution
- ❖ Geometrical error measurement and separation
- ❖ Frequency analysis for identification of root cause of error
- ❖ Thermal drift measurements

TECHNICAL SPECIFICATIONS:

Parameter/ Specification	Description
Type of Probes	Ultra Precision Capacitive Probes
Number of probes	3
Static resolution of probes	1 nm
Sensor linearity	0.15 % of full scale (~300 nm for 200 um Range)
Measuring Range	200 μ m
Probe Sensitivity	User Defined (0.04 V/ μ m)
Number of Axes/Channels	3
RPM range	500-6000
Sampling Rate	Upto 10 kHz
Displayed Revolutions	32 for Each update
System capability (as validated)	0.5 μ m and above
Axial Error	Yes
Radial Error – Fixed Sensitive	Yes
Radial Error – Rotating Sensitive	Yes
FFT	Yes
Oscilloscope function	Yes
Calibration	Sensors (Static) & Target Ball
Device Communication	NI DAQ with 24 bit
Target	1" Ball Target
Probe Nest	3/5 Probe Nest
Display Features	Polar Plot View for <ul style="list-style-type: none">❖ Total Error❖ Synchronous Error❖ Asynchronous Error

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