

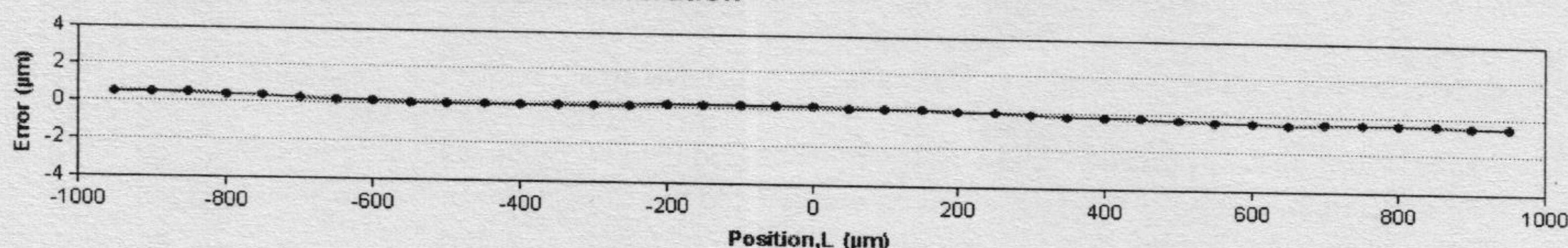
Product QC20-W Ballbar  
Serial number 16P493  
Date of calibration 16 February 2017  
Customer Name Starrag US  
Customer Address 2379 Progress Drive  
Customer Reference Hebron, KY 41048

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## Calibration certificate

Specified accuracy of Ballbar measuring radial variation of the machine tool  $\pm[0.7 + 0.3\% \cdot L] \mu\text{m}$   
Where  $L$  is the absolute value of Ballbar sensor measured range

### Measured values and uncertainties of calibration



Results	Value
Maximum error over full range $\pm 1000 \mu\text{m}$ :	$\pm 0.52 \mu\text{m}$
Uncertainty of measurement (95% confidence level, $k=2$ ):	$\pm 0.40 \mu\text{m}$

Environmental conditions (nominal)	Value
Air temperature:	20.7 °C
Pressure:	981 mbar
Relative humidity:	51.5 %RH

Reference standards	Ref. no.	Certificate no.	Calibration date
Renishaw XL-80	10T280	10T280-161121-00	21 November 2016
Renishaw XC-80	297K94	297K94-161208-00	08 December 2016
Renishaw XC Air Temperature Sensor	295P43	295P43-161213-00	13 December 2016
Test procedure	RD-0132/A2LA R205 Compliant		

Authorised signature	Signatory	Position	Issue date
	Joe Pichon	Service Center Manager	16 February 2017

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Renishaw Inc  
1001 Wesemann Drive  
West Dundee  
IL 60118



Calibration Cert # 2707.01

Certificate number  
16P493-170216-00

L-8014-9010-04