

CERTIFICATE OF CALIBRATION

Issued By **Taylor Hobson Calibration Laboratory**

Issue Date: 28-September-2017 Certificate No: 63549

Date of Calibration : 28-September-2017



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Page 1 of 2 Pages

**APPROVED
SIGNATORY**

J.D.Leeman

Description:	Roughness Standard (New)
Code Number:	112/2937-01UC
Serial Number:	12009
Manufactured by:	Taylor Hobson Ltd.
Calibrated For:	Spectrum Metrology Ltd 8 Ireton Avenue, Leicester LE4 9EU, United Kingdom.

Acting as Agent for:	Stainless Restoration Ltd
Customer Order Number:	9420
Taylor Hobson Order Number:	SO310548

Previous Certificate Number:	Not Applicable
Records Reference:	Network
Calibration Temperature	20°C ±1°C
Date Received into Laboratory:	27-September-2017

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Certified

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The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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UKAS ACCREDITED CALIBRATION LABORATORY 0026

28 September 2017

Certificate No. 63549

Page 2 of 2

Measurement Conditions.

This standard has been calibrated using computerised traceable measuring techniques on a Taylor Hobson Form Talysurf PGI instrument. All measurements were taken using a 90° conisphere diamond tip stylus with a nominally 2µm spherical radius. A traversing speed of 0.5mm per second, an X-axis sampling rate of 0.25µm, Z-axis resolution of 0.2nm and software stylus tip/arcuate correction have been applied throughout the measurements.

Analysis Conditions Gaussian.

The surface finish portion of the standard was calibrated in accordance with ISO 4287:2000 and ISO 4288:1998 utilising a λc 0.8mm Gaussian filter cut-off with a bandwidth ratio of 300:1. The mean Ra and Rz values were calculated from twenty measurements taken 0.8mm apart within the calibration rectangle, the results obtained, rounded to the nearest 0.01µm, are shown in Table 1.

Uncertainty Statement.

The expanded uncertainty of calibration for amplitude parameters is $\pm(2\%+0.004\mu\text{m})$ of the mean value. When added to the standard deviation of the measurements, this gives an expanded uncertainty of calibration as stated in Tables 1 & 2.

Included in the tabulated results is a calculated imperial equivalent.

Table 1

Mean Ra Value	Standard Deviation	Expanded Uncertainty
5.86 µm	0.017 µm	±0.138 µm
231 µin	0.7 µin	±5.4 µin
Mean Rz Value	Standard Deviation	Expanded Uncertainty
21.88 µm	0.134 µm	±0.575 µm
861 µin	5.3 µin	±22.7 µin

Analysis Condition 2CR.

The measured surface finish data was re-analysed using a λc 0.8mm 2CR filter cut-off with a bandwidth ratio of 100:1, the mean Ra and Rz results, rounded to the nearest 0.01µm, is shown in Table 2. This value should be used when calibrating instruments with filter options that do not conform to ISO 4288:1996.

Table 2

Mean Ra Value	Standard Deviation	Expanded Uncertainty
5.82 µm	0.017 µm	±0.138 µm
229 µin	0.7 µin	±5.4 µin
Mean Rz Value	Standard Deviation	Expanded Uncertainty
21.31 µm	0.127 µm	±0.557 µm
839 µin	5.0 µin	±21.9 µin

Upon receipt into the laboratory the standard was marked:

Ra 5.81 µm

Rz 21.50 µm

229 µin

847 µin

Certified: 

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