

# Z E R T I F I K A T

Messmittelüberwachung nach

**VDI / VDE 2617 – DIN / ISO 9001**

einer 3-D Koordinatenmeßmaschine

## **Stiefelmayer manuell**

Seriennummer:	38470689
Software:	Calypso/Holos-manuell
Tastsystem:	Renishaw MIH mit TP6

### ***Überprüfungsnormal***

Renishaw Laser XL80

nach Kalibrierzertifikat

9L1547-100323-00

Trossingen, den 07.10.2019

Martin Knauer

Product  
Serial number  
Date of calibration

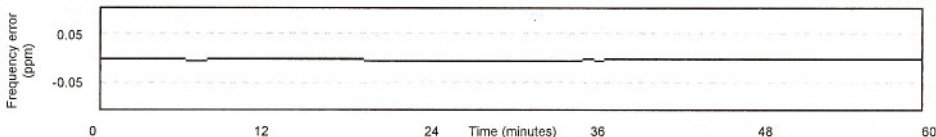
XL-80 laser  
9L1547  
23<sup>rd</sup> March 2010

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# Calibration certificate

**Specification**  
*Vacuum wavelength* 0.6329905770  $\mu\text{m} \pm 0.05$  ppm  
*Equivalent frequency* 473612829.2 MHz

## Measured values and uncertainties of calibration



Results	Value (MHz)	Value (ppm)
Laser frequency:	473612828.9	-
Laser frequency error:	-0.3	-0.001
Stability (peak-to-peak):	2.4	0.005
Maximum laser frequency error:	-1.5	-0.003
Uncertainty of measurement (k=2):	$\pm 4.6$	$\pm 0.01$

Reference standards	Ref. no.	UKAS	Certificate no.	Calibration date
Iodine stabilised HeNe laser	MTE/814	NPL	LL0301/0617	30 <sup>th</sup> November 2006
Frequency counter	MTE/A162	0126	320757	23 <sup>rd</sup> June 2009
Reference HeNe laser	GOLDSTD6	-	-	15 <sup>th</sup> March 2010

**Laser measurement system accuracy:** Based on this calibration, when this XL-80 laser is used with a Renishaw XC-80 compensator and a Renishaw air temperature sensor (*both within specification*) the laser measurement system accuracy (k=2) in linear measurement mode will be within:  $\pm 0.5$  ppm (see the system manual for details).

Authorised signature	Signatory	Position	Issue date
	W. Lee	Divisional Director	24 <sup>th</sup> March 2010

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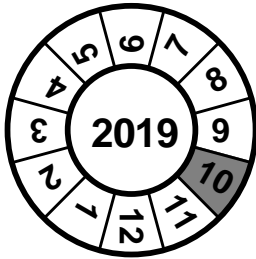
Renishaw plc  
Laser & Calibration Products Division  
Bath Road, Woodchester  
Stroud  
Gloucestershire  
GL5 5EY  
United Kingdom  
Tel +44 (0) 1453 524524

**Certificate number**  
**9L1547-100323-00**

L-9908-0888/03



Kalibriert am:



Kalibriert von: Martin Knauer

Kalbrierdatum:  
**07.10.2019**

**Empfohlenes  
Kalibrierintervall**

1/2 jährlich

2 jährlich

**Knauer IMt  
Qualität**

**Messmittelüberwachung**

nach

**VDI/VDE 2617 - DIN/ISO 9001**

**KMG-Typ: Stiefelmayer**

**Fabr. Nr. : 38470689**

Ihr Ansprechpartner:

**2019**

**Knauer IMt**



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Knauer IMt - Technischer Service