

# OLP40 optical lathe probe



## OLP40 specification

<b>Principal application</b>		Workpiece inspection and job set-up on small to medium machining centres and small multi-tasking machines.	
<b>Weight without shank</b> (including batteries)		277 g (9.77 oz)	
<b>Transmission type</b>		360° infrared optical transmission (modulated or legacy)	
<b>Recommended stylus</b>		Ceramic, lengths 50 mm (1.97 in) to 150 mm (5.91 in)	
<b>Switch-on method / switch-off methods</b>		Optical on  Optical off	Optical on  Timer off
<b>Battery life</b> (2 x 1/2 AA 3.6 V lithium-thionyl chloride)	<b>Standby life</b>	1500 days maximum, dependent on switch-on / switch-off option.	
	<b>Continuous use</b>	1350 hours maximum, dependent on switch-on / switch-off option.	
<b>Operating range</b>		Up to 5 m (16.4 ft)	
<b>Compatible receiver / interface</b>	<b>Modulated</b>	OMI-2, OMI-2T, OMI-2H, OMI-2C or OMM-2 / OMM-2C with OSI / OSI-D	
	<b>Legacy</b>	OMI or OMM with MI 12	
<b>Sense directions</b>		±X, ±Y, +Z	
<b>Unidirectional repeatability</b>		<b>OLP40</b> 1.00 µm (40 µin) $2\sigma$ <sup>1</sup>	<b>OLP40H</b> 2.00 µm (80 µin) $2\sigma$ <sup>1</sup>
<b>Stylus trigger force</b> <sup>2,3</sup> XY low force XY high force +Z		<b>OLP40</b> 0.60 N, 61 gf (2.15 ozf) 0.97 N, 99 gf (3.49 ozf) 6.23 N, 635 gf (22.41 ozf)	<b>OLP40H</b> 1.58 N, 161 gf (5.68 ozf) 3.17 N, 323 gf (11.40 ozf) 10.62 N, 1083 gf (38.20 ozf)
Maximum setting	XY low force XY high force +Z	0.83 N, 85 gf (2.99 ozf) 1.60 N, 163 gf (5.76 ozf) 10.00 N, 1020 gf (35.97 ozf)	Not applicable
Minimum setting	XY low force XY high force +Z	0.30 N, 31 gf (1.08 ozf) 0.60 N, 61 gf (2.16 ozf) 4.00 N, 408 gf (14.397 ozf)	Not applicable
<b>Stylus overtravel</b> XY plane +Z plane		<b>OLP40</b> ±12.5° 6 mm (0.24 in)	<b>OLP40H</b> ±12.0° 5 mm (0.20 in)
<b>Environment</b>		IP rating	IPX8, BS EN 60529:1992+A2:2013
		IK rating	IK02 BS EN IEC 62262: 2002+A1:2021
		Storage temperature	-25 °C to +70 °C (-13 °F to +158 °F)
		Operating temperature	+5 °C to +55 °C (+41 °F to +131 °F)
		Indoor/outdoor use	Indoor use
		Altitude	≤ 3000 m
		Relative humidity	5% to 95%
		Wet location	Yes, water/oil/coolant
		Pollution degree	Level 2

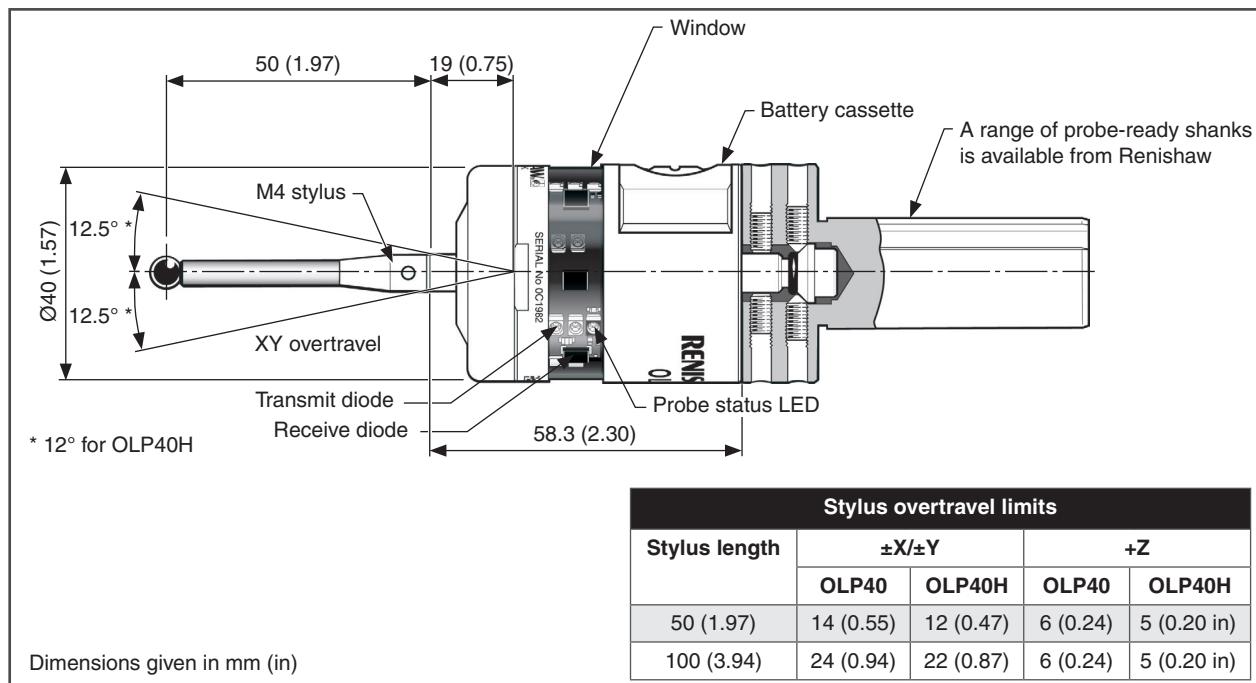
<sup>1</sup> Performance specification is tested at a standard test velocity of 480 mm/min (18.9 in/min) with a 50 mm stylus. Significantly higher velocity is possible depending on application requirements.

<sup>2</sup> Trigger force, which is critical in some applications, is the force exerted on the component by the stylus when the probe triggers. The maximum force applied will occur after the trigger point (overtravel). The force value depends on related variables, including measuring speed and machine deceleration.

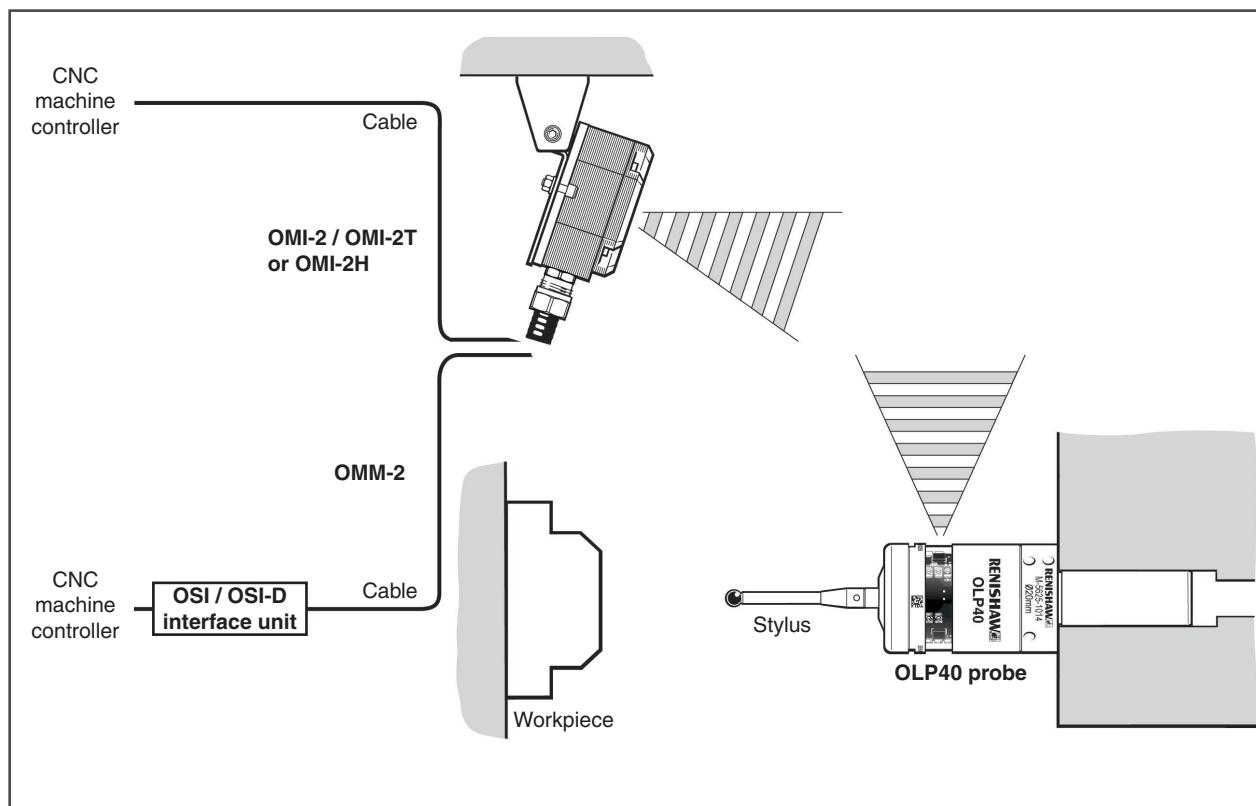
<sup>3</sup> These are the factory settings; manual adjustment is not possible on the OLP40H.



## OLP40 dimensions



## Installing the OLP40 with an OMI-2, OMI-2T, OMI-2H interface, or OMM-2 receiver with OSI / OSI-D interface



## Performance envelope when using the OLP40 with an OMI-2, OMI-2T, OMI-2H interface, or OMM-2 receiver (modulated transmission)

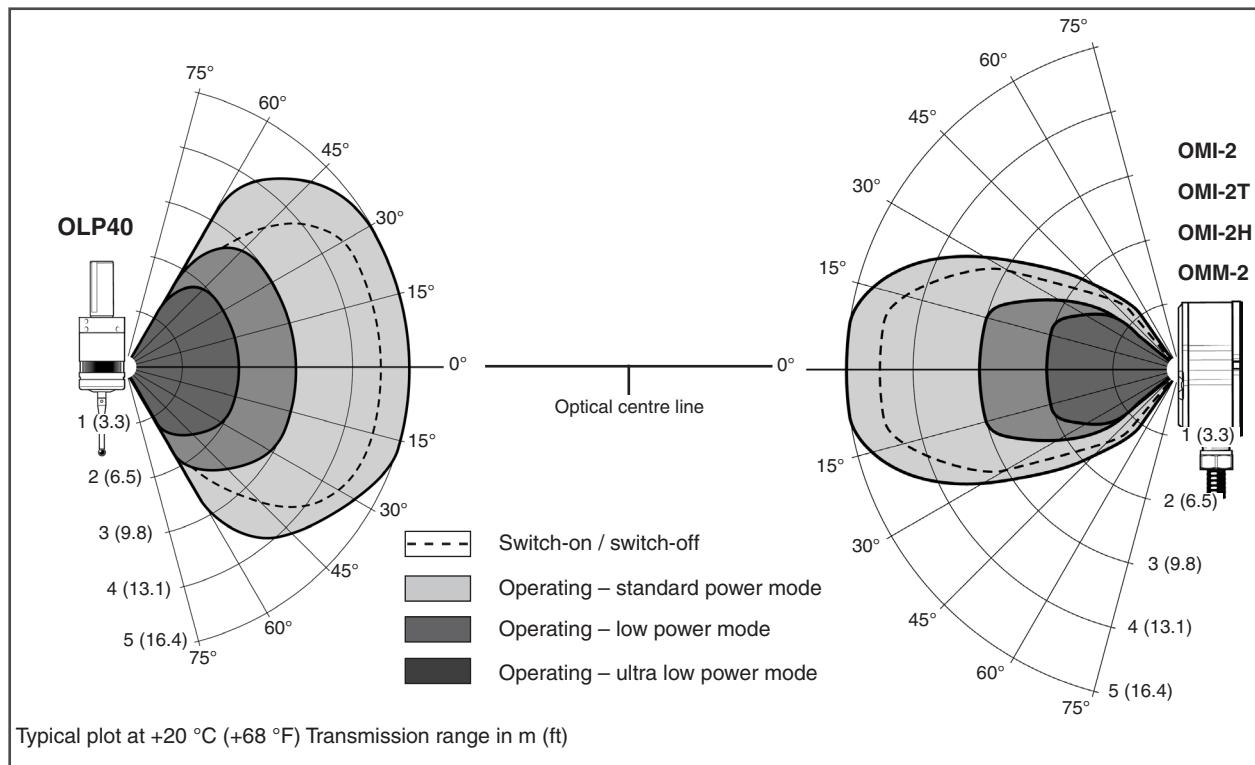
The OLP40 has a 360° transmission envelope over the ranges shown below.

The probe system should be positioned so that the optimum range can be achieved over the full travel of the machine axis.

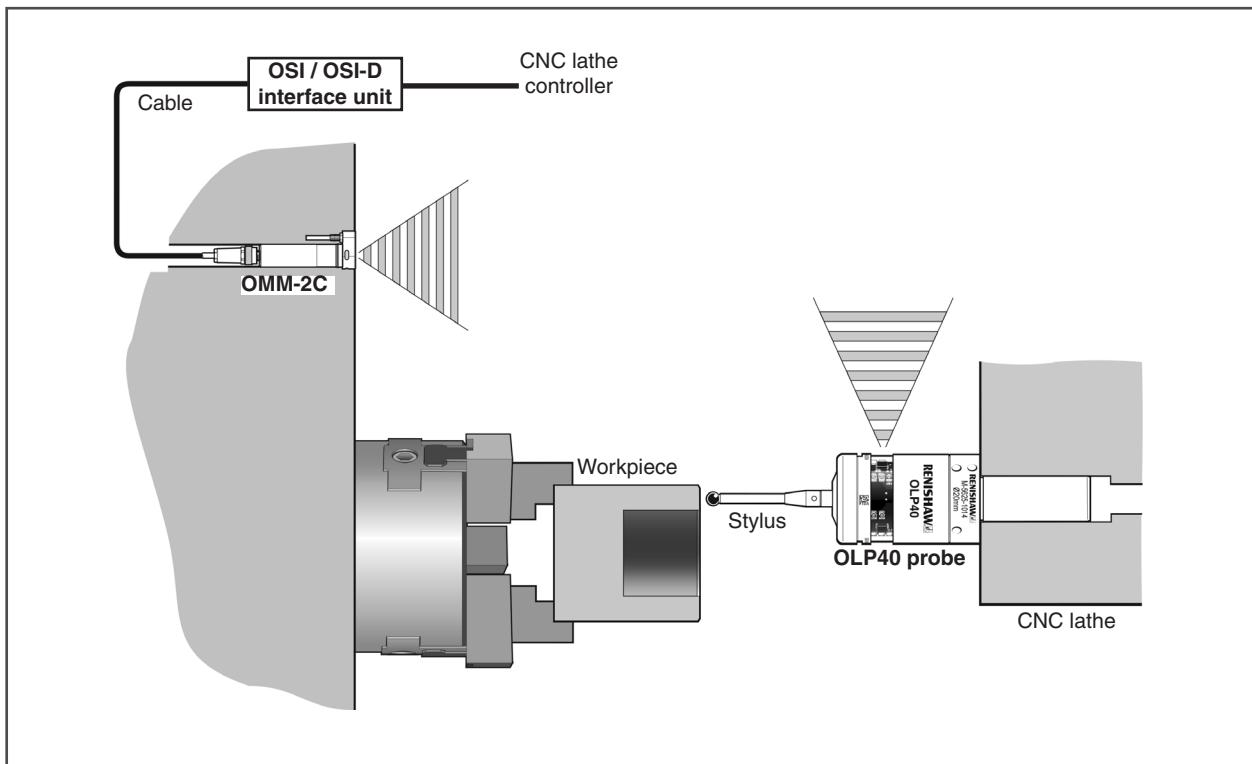
The OLP40 and optical receivers may deviate from the optical centre line, provided opposing light cones always overlap, with transmitters and receivers in the other's field of view (line of sight).

Natural reflective surfaces within the machine may affect the signal transmission range.

Coolant residue accumulating on the receiver will have a detrimental effect on transmission performance. Wipe clean as often as is necessary to maintain unrestricted transmission.



## Installing the OLP40 with an OMM-2C receiver with OSI / OSI-D interface



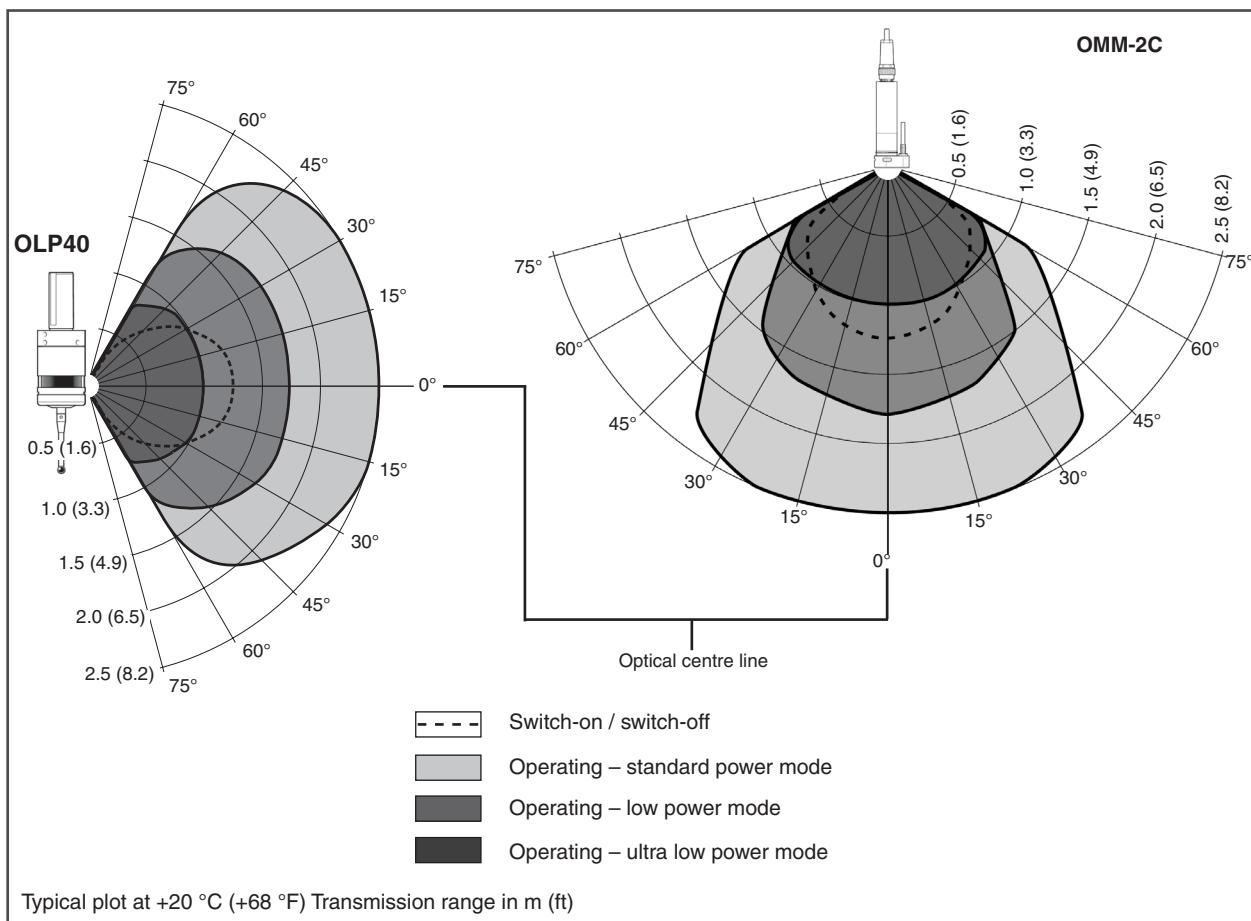
## Performance envelope when using the OLP40 with an OMM-2C receiver with OSI / OSI-D interface

**WARNING:** Ensure the machine tool is in a safe condition and power is removed before removing covers. Only qualified persons should adjust switches.

The OMM-2C receiver should be mounted as near to the machine spindle as possible.

When mounting the OMM-2C receiver, it is important that the sealing ring forms a tight seal around the rim of the bore into which the body of the OMM-2C receiver is to be located.

The diodes of the OLP40 and the OMM-2C receiver must be in each other's field of view and within the performance envelope shown. The OLP40 performance envelope is based on the optical centre line of the OMM-2C receiver with OSI or OSI-D interface being at 0° and vice versa.



## Spare parts and accessories

A full range of spare parts and accessories is available. Contact Renishaw for a full list.

[www.renishaw.com/contact](http://www.renishaw.com/contact)



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