

XL-80 laser system spares list

Introduction

This application note lists the system components for the XL-80 laser system.

To order please contact your local [Renishaw office](#) or purchase from our [online store](#).

Description	Part number	
<p>XL-80 laser kit</p> <p>This is the heart of the Renishaw calibration system. Laser frequency stability is 0.05 ppm over one year, range 80 m, 4 m/s measurement velocity, 50 kHz dynamic measurement and 0.001 μm resolution. A single part number for all XL applications. Includes:</p> <ul style="list-style-type: none"> • XL-80 laser assembly • XL power supply and cable • Aux I/O connector kit • USB cable <p>Note: XL laser supplied with standard shutter as shown. Quadrature output is available, subject to export control regulations (part no: A-9908-0455).</p>	A-9908-0405	
<p>XC-80 compensator kit</p> <p>The XC-80 compensator is a crucial factor for linear measurement accuracy using the XL-80 laser. XC-80 features 'intelligent sensors' that process the readings at source, the compensator very accurately measures air temperature, air pressure and relative humidity. Includes:</p> <ul style="list-style-type: none"> • XC-80 compensator assembly • Air temperature sensor and cable kit • Material temperature sensor and cable kit • USB cable • XC mounting plate 	A-9908-0510	
<p>CARTO</p> <p>The CARTO software contains three applications; Capture to collect laser measurement data, Explore for powerful analysis to international standards and Compensate for quick and easy error correction.</p> <p>The CARTO user interface provides a simple process flow that enables users to easily capture and manage their data.</p>	<p>Download CARTO here</p>	


<p>QuickView XL software</p> <p>QuickView™ is a simple to use and intuitive software package to capture, review and save dynamic data at up to 4 m/s and 50 kHz from the Renishaw XL-80 laser system. Ideal for motion system analysis.</p>	<p>A-9908-0302</p>	
<p>XL tripod stage kit</p> <p>Attaches to the laser head and allows yaw (range 3°) and translation (range 72 mm) adjustments. Quick release mechanism to fix onto the tripod base adapter or the XL magnetic base adapter. Weight 0.75 kg. Includes:</p> <ul style="list-style-type: none"> • XL tripod stage • 3 stage retaining screws • XL tripod stage adapter • Spirit level circular 	<p>A-9908-0700</p>	
<p>Universal tripod base</p> <p>Enables the laser beam to be positioned anywhere from 0.54 m - 1.56 m in height.</p> <p>Minimum working height (legs collapsed) 48 cm, Maximum height (legs extended) column up 149 cm, Maximum height (legs extended) column down 121 cm, folded dimensions incl boss (LxHxD) 650x160x160 mm, weight 3.9 kg.</p> <p>Note: does not include XL tripod stage adapter.</p>	<p>A-9908-0295</p>	
<p>Fabric tripod case</p> <p>An armoured fabric case suitable for the universal tripod base (incl. attached tripod stage adapter). Adjustable shoulder strap and strap for fixing to system cases. Lightweight, portable, washable.</p> <p>Dimensions LxHxD 700x170x170 mm, weight 1.8 kg</p>	<p>M-9908-0527</p>	
<p>Universal tripod kit</p> <p>This kit includes the universal tripod base and fabric tripod case detailed above.</p>	<p>A-8003-9070</p>	
<p>Stage retaining screw</p> <p>Three of these are needed to fix the laser head to the tripod stage.</p>	<p>A-9908-0750</p>	
<p>XL tripod stage adapter</p> <p>The interface for the XL tripod stage. Fits to the Universal tripod base or another support. Integrated female 3/8" thread</p>	<p>A-9908-0770</p>	
<p>Magnetic base</p> <p>Can be used for mounting the optics or the XL laser head in combination with the XL magnetic base adapter. On/ off switch. Female M8 fixing thread on upper side provided. (for XL-80 mounting use together with item A-9908-0760)</p> <p>Note: Supplied as kit including qty 2 bases.</p>	<p>A-9908-0780</p>	
<p>XL magnetic base adaptor</p> <p>Allows tripod stage to be mounted to a magnetic base. Integrated male M8 thread.</p>	<p>A-9908-0760</p>	

<p>XC sensor cable Length 5 m, for use with air and material temperature sensors. Can be coupled together for increased overall length up to 60m.</p>	<p>A-9908-0932</p>	
<p>Air temp sensor and cable kit Range 0° C - 40° C, cable length 5 m, magnetic attachment. Sensor not available separately.</p>	<p>A-9908-0878</p>	
<p>Material temp sensor and cable kit Range 0° C - 55° C, cable length 5 m, magnetic attachment. Sensor not available separately.</p>	<p>A-9908-0879</p>	
<p>XC mounting plate Allows the XC-80 to be fixed onto a magnetic surface.</p>	<p>A-9908-0892</p>	
<p>XL base system case Heavy duty transport and storage case. Suitable for XL laser with stage, XC compensator, linear and angular optics, mounting kit, magnetic bases and alignment optics. Integrated wheels and handle. Provision for padlocks for added security. Dimensions (LxHxD) 560x351x229 mm, weight empty 6.5 kg, weight loaded up to 17 kg.</p>	<p>M-9908-0313</p>	
<p>XL full system case Heavy duty transport and storage case. Suitable for all components as per base case plus additional space for most other system optics. Integrated wheels and handle. Provision for padlocks for added security. Dimensions (LxHxD) 560x455x265 mm, weight empty 8.2 kg weight loaded up to 25 kg.</p>	<p>M-9908-0314</p>	
<p>Power supply and cable The power supply and cable is a spare for use with an XM-60, XM-600 or XL-80 laser.</p>	<p>A-5103-4370</p>	
<p>USB cable kit USB cable for connecting XL or XC to a computer, length 5 m.</p>	<p>A-9908-0286</p>	
<p>Aux I/O connector kit Enables you to wire up to and use TP-IN, and quadrature and analogue signal-out capabilities (quadrature function must be enabled first, see page 1). Full wiring instructions and specifications included.</p>	<p>A-9908-0329</p>	

<p>Universal straightness shutter</p> <p>A special shutter assembly to rotate the return port in the shutter by 90°. When used with straightness optics, this allows for straightness measurement in the vertical axis.</p>	<p>A-8003-4209</p>	
<p>Linear optics kit</p> <p>For positioning accuracy and repeatability of an axis. For linear measurements over 40 m you will require the long range linear accessory kit.</p>	<p>A-8003-0440</p>	
<p>Long range linear optics kit</p> <p>These optics enable linear measurements to be taken on axis lengths to 80 m.</p>	<p>A-8003-4270</p>	
<p>Angular optics kit</p> <p>These optics allow angular pitch and yaw measurements of an axis to be made. Can measure maximum angular deflections of up to $\pm 10^\circ$ with resolution of 0.01 arc sec</p>	<p>A-8003-0441</p>	
<p>Optics mounting kit</p> <p>The optics mounting kit is for use with all Renishaw measurement optics. The kit is used to mount the measurement optics to the machine under test.</p>	<p>A-8003-0447</p>	
<p>Swivel mirror</p> <p>Allows adjustment to be made along machine diagonals, or on inclined axes. The swivel mirror can be used as an alignment aid for ANSI B5.54 diagonal measurement and is also useful when measuring slant-bed lathes.</p>	<p>A-8003-1304</p>	
<p>Fixed turning mirror</p> <p>This mirror is used primarily when there is restricted access to the required axis of measurement, allowing the laser beam to be re-directed.</p>	<p>A-8003-1325</p>	
<p>Vertical turning mirror</p> <p>Can be used as an alternative to the laser beam steerer and fixed turning mirror, with the large retroreflector, during straightness and squareness measurements involving the vertical axis of the machine.</p>	<p>A-8003-0560</p>	
<p>Straightness measurement kit (short range)</p> <p>These optics allow the measurement of horizontal straightness error in linear axes up to 4 m in length to be made. They also enable axis parallelism to be measured.</p>	<p>A-8003-0443</p>	

<p>Straightness measurement kit (long range)</p> <p>These optics can be used to measure the horizontal straightness error in linear axes from 1 m up to 30 m in length. They also enable measurement for parallelism of axes.</p>	<p>A-8003-0444</p>	
<p>Squareness measurement optics)</p> <p>These optics determine the out-of-squareness of two nominally orthogonal axes, by comparing their straightness slope values which are referenced via the optical square.</p>	<p>A-8003-0665</p>	
<p>Flatness measurement kit</p> <p>Flatness measurement is performed to check the form of CMM tables and all types of surface plate, using these optics. Note: Angular optics are also required to perform flatness measurements.</p>	<p>A-8003-0442</p>	
<p>LS350 laser beam steerer</p> <p>Provides easy angular adjustment of the laser beam in both horizontal and vertical planes. This patented accessory eliminates the need for fine laser translation and rotation. The LS350 laser beam steerer speeds up linear, angular and straightness measurements in both the horizontal and vertical axes, whether in-line or at 90°.</p>	<p>A-8003-3072</p>	
<p>Straightness base</p> <p>A base designed to mount the straightness reflector and adjustable turning mirror (or laser beam steerer with fixed turning mirror) for some vertical axis measurements. This base can also be used for the mounting of linear and angular optics.</p>	<p>A-8003-0576</p>	
<p>Large retroreflector</p> <p>Used as a retroreflector for straightness and squareness measurements involving the vertical axis of the machine.</p>	<p>A-8003-0604</p>	
<p>Pan and tilt</p> <p>The pan and tilt adaptor kit is designed to allow flexible mounting of laser calibration equipment at angles between 0° - 90° with an infinite pan rotation. The pan and tilt adaptor can be used to:</p> <ul style="list-style-type: none"> • mount the XL-80 laser on a tripod or magnetic base for applications such as slant bed lathes • mount a retroreflector at an angle for convenient linear diagonal measurement 	<p>A-9908-1170</p>	
<p>Pillar - 40 mm long</p> <p>The mounting pillar is used for mounting the measurement optics to the machine under test.</p>	<p>M-8003-0740</p>	
<p>Pillar - 70 mm long</p> <p>The mounting pillar is used for mounting the measurement optics to the machine under test.</p>	<p>M-8003-0739</p>	

<p>Pillar - 110 mm long</p> <p>The mounting pillar is used for mounting the measurement optics to the machine under test.</p>	M-8003-0470	
<p>Clamp block</p> <p>The clamp block is used to mount an optic or receiver onto a mounting pillar. Two screws are built into each side to secure the clamp.</p>	A-8003-0262	
<p>Clamp block - steel</p> <p>Clamp block - steel is used to mount an optic or receiver onto a mounting pillar. Two finger screws are built into each side to secure the clamp.</p>	A-8003-3521	
<p>Clamp block screw assembly</p> <p>Clamp block screw assy is used to secure a mounting pillar inserted in the clamp block.</p> <p>Note: this is part of the clamp block, A-8003-0262 and clamp block - steel, A-8003-3521.</p>	A-9954-0272	
<p>Spirit level circular</p> <p>The spirit level is a levelling aid for setting up the XL-80, XM-60 and XM-600.</p>	A-9908-0323	
<p>Clamp screw (short)</p> <p>The clamp screw (short) is for easy mounting and fixturing the linear retroreflector to the linear interferometer.</p>	M-8003-0221	
<p>Clamp screw (long)</p> <p>The clamp screw (long) is for easy mounting and fixturing the clamp block supplied as part of the optics mounting kit.</p>	M-8003-0264	
<p>Clamp screw (swivel mirror)</p> <p>The clamp screw is for easy mounting and fixturing the swivel mirror.</p>	M-8003-1063	
<p>Clamp screw (fixed turning mirror)</p> <p>The clamp screw is for easy mounting and fixturing the fixed turning mirror.</p>	M-8003-1070	
<p>Clamp screw (laser steerer)</p> <p>The clamp screw is for easy mounting and fixturing the laser steering optic - LS350.</p>	M-8003-3083	



Product description	Part number	Basic kit (linear)	Standard kit (linear)	Advanced kit (linear and angular)	Advanced kit (linear, angular, straightness, flatness, squareness)	Dual axis kit (linear)	Rotary kit (angular)	CMM calibration (linear, angular, straightness)
XL-80 laser kit	A-9908-0405	1	1	1	1	2	1	1
XC-80 compensator kit	A-9908-0510	1	1	1	1	1		1
QuickViewXL software	A-9908-0302	1	1	1	1	1	1	1
Linear optics kit	A-8003-0440	1	1	1	1	2		1
Long range linear optics kit	A-8003-4270				1			
Angular optics kit	A-8003-0441			1	1			
Optics mounting kit	A-8003-0447	1	1	1	1	2	1	
Swivel mirror	A-8003-1304				1			1
Fixed turning mirror	A-8003-1325		1	1	1			1
Vertical turning mirror	A-8003-0560				1			1
Straightness base	A-8003-0576				1			1
Large retroreflector	A-8003-0604				1			1
Universal straightness shutter	A-8003-4209				1			1
Straightness measurement kit (short range)	A-8003-0443				1			1
Straightness measurement kit (long range)	A-8003-0444				1			
Squareness measurement optics	A-8003-0665				1			
Flatness measurement kit	A-8003-0442				1			
LS350 laser beam steerer	A-8003-3072		1	1	1	2		1
Spirit level circular	A-9908-0323	1						
XL base system case	M-9908-0313		1	1		2	1	
XL full system case	M-9908-0314				1			1
XL tripod stage kit	A-9908-0700		1	1	1	1	1	1
Universal tripod base	M-9908-0295		1	1	1	2	1	1
Tripod case fabric	M-9908-0527		1	1	1	2	1	1
Magnetic base	A-9908-0780		1	1	1			
XR20 rotary axis calibrator	A-9920-1400						1	

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