

# LASER TRACKBALLS : the X-Range

# NSI

# NEW

## LASER TRACKBALLS the X-Range

### ORDER INFO

TRACKBALL	OUTPUT	DAMPER RING	RUBBER SEAL	PTFE SEAL
<b>13 mm ball</b>	Quadrature	<b>X13-70021D</b>	<b>X13-70022D</b>	
	PS/2 & USB	<b>X13-76021D</b>	<b>X13-76022D</b>	
<b>19 mm ball</b>	Quadrature	<b>X19-70021D</b>	<b>X19-70022D</b>	
	PS/2 & USB	<b>X19-76021D</b>	<b>X19-76022D</b>	
<b>25 mm ball</b>	Quadrature	<b>X25-70021D</b>	<b>X25-70022D</b>	
	PS/2 & USB	<b>X25-76021D</b>	<b>X25-76022D</b>	
<b>38 mm ball</b>	Quadrature	<b>X38-70021D</b>		<b>X38-70023D</b>
	PS/2 & USB	<b>X38-76021D</b>		<b>X38-76023D</b>
<b>50 mm ball</b>	Quadrature	<b>X50-70021D</b>		<b>X50-70023D</b>
	PS/2 & USB	<b>X50-76021D</b>		<b>X50-76023D</b>

No **cables** are supplied with the optical trackball modules. Please use the corresponding datasheet on our website for the detailed typenumbers They can be ordered separately :

PS/2 output cable; 1,6 m.	<b>OC60xxxxx</b>
USB output cable; 1,6 m.	<b>OC5xxxxx</b>
External switch cable; 35 cm.	<b>IC040035</b>
Interconnection cable; 35 cm. for quadrature output only	<b>ICxxxx35</b>
Flexlead for X13 trackball	<b>1151-00</b>
PCB for X13 trackball	<b>T1601126</b>



version with damper ring



version with PTFE seal ring

### DIMENSIONAL DRAWINGS

See detailed datasheets on our website [www.nsi-be.com](http://www.nsi-be.com)

X13 : [www.nsi-be.com/product/X13](http://www.nsi-be.com/product/X13)  
 X19 : [www.nsi-be.com/product/X19](http://www.nsi-be.com/product/X19)  
 X25 : [www.nsi-be.com/product/X25](http://www.nsi-be.com/product/X25)  
 X38 : [www.nsi-be.com/product/X38](http://www.nsi-be.com/product/X38)  
 X50 : [www.nsi-be.com/product/X50](http://www.nsi-be.com/product/X50)

### EUROPEAN SALES & SERVICE CENTER

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### MANUFACTURER

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 Tel: ++44 (0) 1636 615600  
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 Website : [www.cursorcontrols.com](http://www.cursorcontrols.com)  
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# LASER TRACKBALLS : the X-Range



X13



X19



X25



X38



X50

## DESCRIPTION

Utilising the very latest in solid state sensing technology, the Laser Series offers all the benefits of the well established Optical trackball devices with the added advantages of an increased flexibility and an improved tracking performance on a wide range of ball surfaces. Other added advantages are increased resolution options and a reduced power consumption.

The laser tracking engine provides accurate cursor motion at all speeds and on virtually any ball, combining the benefits of solid state sensing (no moving parts except the ball). The trackball design incorporates a removable top ring as standard to allow for easy cleaning, decontamination, sterilisation and maintenance - ensuring continued optimum performance and operation under the harshest of conditions. This laser trackball range is available with a variety of electrical outputs and sealing to IP68 and has been designed to be back of panel mounted.

The "X-range" is the name of this large range of laser trackballs which are available in 13mm (type X13), 19mm (X19), 25mm (X25), 38mm (X38) and 50 mm (X50) ball sizes.

## FEATURES

- Sealing to IP68
- Removable ball for ease of cleaning
- Solid state sensing technology, Laser tracking engine
- Smooth operation in rugged environments
- Ability to wash down, decontaminate, and sterilise
- Various top plate configurations
- Increased high speed tracking
- Increased resolution options
- Reduced power consumption
- Custom connector options possible
- VX3™ integrated zoom feature for scroll wheel functionality
- Best performance/cost ratio for new OEM designs requiring waterproof sealing
- Output: PS/2 & USB or Quadrature



## SPECIFIC TECHNICAL SPECIFICATIONS

SPECIFICATIONS	X13	X19	X25	X38	X50
Ball diameter (in mm)	12,7 mm	19 mm	25 mm	38 mm	50,8 mm
Weight	15 grams	30 grams	40 grams	90 grams	150 grams
Tracking force	10 gr. nom.-damp.ring 10-30 gr.- rubber seal	10 gr. nom.-damp.ring 30-60 gr.- rubber seal	20 gr. nom.-damp.ring 20-40 gr.- rubber seal	20 gr. nom.-damp.ring 30-80 gr.- PTFE seal	20 gr. nom.- damp.ring 30-80 gr.- PTFE seal
Ball load	50 N	100N	100N	100N	200N
Resolution (counts/revol.)	300 - 600	425 - 800	650 - 1300	900 -1800	1200 -2400

## GENERAL TECHNICAL SPECIFICATIONS

### Mechanical

Sealing	: IP68 (tested submerged at 2m. depth for 24hours)
Ball material	: Epoxy resin
Ball colour	: Metallic light grey ball
Housing Material	: Polycarbonate / ABS
Ball Rotation	: Continuous and reversible any direction
Resolvable Ball Speed	: 40 Inches/sec.
Housing Material	: Polycarbonate / ABS
Transducer	: Optical Navigation Technology (solid state sensing)
Mounting Position	: All angles
Sealing gasket	: Cellular silicone

### Electrical

Supply voltage	: 4.4V to 5.25V D.C.
Supply current	: 23mA typical, 25mA maximum
Laser safety class	: Embedded class 1M laser safety, IEC 60825-1

### Environmental

Operating temperature	: 0°C to +55°C (IEC 60068-2-1, IEC60068-2-2)
Storage temperature	: -40°C to + 85°C (IEC 60068-2-1, IEC60068-2-2)
Operating humidity	: 93% RH @ 40°C, non-condensing (IEC 60068-2-78)
Storage humidity	: 10%-95% non-condensing (IEC 60068-2-78)
Vibration	: 5g, 10-500Hz, 1 octave/min, 10 sweep cycles (IEC 60068-2-6)
Operating Shock	: 15g/11ms, ½ sine, 3 shocks in +ve and -ve direction, all 3 axes (IEC 60068-2-27)
Non-operating shock	: 50g/11ms, ½ sine, 3 shocks in +ve and -ve direction, all 3 axes (IEC 60068-2-27)
Mechanical lifetime	: 1 million ball revolutions
MTBF	: in excess of 80,000 hours (MIL-STD-217F)
ESD	: 15kV air-discharge and 8kV contact discharge (IEC 61000-4-2)
EMC	: Radiated immunity - limits according to level 3 of IEC 61000-4-3 Radiated emissions to EN55022 class B
Sealing capability	: IP68 (BS EN 60529)

