

Guide to Reference Spheres

Are you looking for the perfect reference sphere for your fields of application? Do you lose track of the variety of reference sphere types? Benefit from the following overview to find quickly the reference sphere that is perfectly suited for your demands. The overview covers the spheres provided by Laserscanning Europe GmbH.

You find further product information in Laserscanning Europe's online shop. If you have any questions, please don't hesitate to contact us (phone: +49 (0) 391 62 69 960, e-mail: info@laserscanning-europe.com).

	Basic	Flexi	UltraX	Traveler	XXL	Prism sphere
∅ 100mm						x
∅ 145mm ^{*1}	x	x	x	x		
∅ 200mm					x	
Magnet base ^{*2}	x	x	x	x	x	
Usage for permanent marking ^{*3}	x	x	x	x	x	5/8" adapter
Registration via mini prism ^{*4}	x	x	x	x	x	Mini prism integrated
Fitting for optional adapters ^{*5}	x	x	x	x	x	
Set optional with reference sphere pedestals	x	x	x	x	Sphere pedestals separately available	
Usage and storage recommended at following temperatures ^{*6}	0 to +50° ^{*7}	-20 to +50°	-50 to +70°	-20 to +50°	0 to +50° ^{*7}	
Number of spheres in a set	6	6	6	6	2	1

	Basic	Flexi	UltraX	Traveler	XXL	Prism sphere
Recommended usage	Suited for tacheometric determination of reference points	Suited for daily use	For highly accurate measurements (industrial applications, quality assurance)	Suited for daily use and especially for traveling	For scanning objects with large size	Suited for connecting laser scan data and tacheometric measurements
Further characteristics	Sphere resists normal stresses	Sphere is very robust and long-lasting	Up to 20 times more precise than standard 3D laser scanners	M8 female thread	Sphere resists normal stresses	Available with 5/8" female or male thread
	M8 female thread	Scratch-proof surface due to special coating	M8 female thread	Sphere with the smallest pack size (The sphere can be taken to pieces.)	Available as a set with further accessories (tripod adapter, prism pole adapter)	Sphere with integrated prism mirror
		Integrated shock absorber		Delivery contents include a bag in addition to a case	M8 female thread	Prism constant: -30mm (Leica)
		M8 female thread				
Price ⁸	599.00 € per set	749.00 € per set	960.00 € per set	1.299.00 € per set	395.00 € per set	349.00 € per sphere

- *1 145mm is a standard diameter that is supported by all customary laser scanners (e.g. FARO Focus®).
- *2 The magnet base allows easy attachment of the sphere to magnetic surfaces. For permanent marking of the sphere's positions, [measurement point stickers](#), [measuring point disks](#) and [precision measuring point disks](#) are a great solution. Marking the positions is especially advantageous for scanning at a subsequent date and for repeated measurements.
- *3 Laser scanner reference points can be marked out permanently, for instance on fixed M8 thread rods/bolts. Reference spheres with such a characteristic have a female thread and, thus, can be screwed onto the reference points.
- *4 The integrated ball screw as well as the precise fabrication allow the detection of the reference sphere by use of our [mini prism](#).
- *5 By means of special adapters, you can attach the spheres to your standard accessories (e.g. surveying tripods, tachymeter rods etc.) or to unusual surfaces (e.g. window panes).
- *6 All reference spheres are approved for the working area (ambient temperature) of scanners. This temperature usually amounts to 0 to 50 degrees.
- *7 When the sphere is used at very cold ambient temperatures (< -5 degrees), the painted surface might be damaged.
- *8 As of October 2014. We reserve the right to modify our prices at any time.