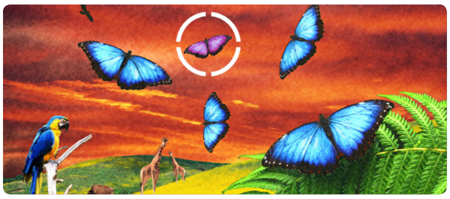

SCORPION 3D STINGER™

Tordivel as
Storgata 20, N-0184 Oslo, Norway
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TORDIVEL

Scorpion 3D Stinger Calibration Objects

Scope

Scorpion Stinger™ is a family of machine vision components and products. They provide building blocks for OEM and system integrators.

Scorpion Stinger™ products have focus on:

- industrial strength
- flexibility
- functionality

The Scorpion 3D Stinger Calibration objects are supported by sample profiles showing best practice for both manual and automatic 3D Calibration.

Methods for automatic validation of calibration results are also provided.

Laser Triangulation calibration

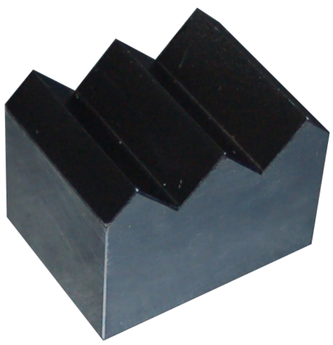
Art.no 90-820, 90-821

The articles 90-820, 90-821 and 90-826 provide calibration objects for Scorpion 3D Scanner. These objects has 15 mm, 30 mm and 75 mm triangle pitch.

Size

90-820: 40 x 30 x 30 mm, 15mm pitch
90-821: 70 x 50 x 48 mm, 30mm pitch
90-826: 150 x 80 x 57.5 mm, 75mm pitch

Upon request two-sided calibration objects are available.



Scorpion 3D Calibration object 90-821

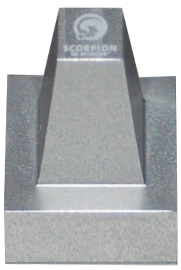
Scorpion 3D Stinger calibration

The following "One-Push" Calibration objects are available to provide 3D calibration in Scorpion 3D Stinger and standard 3D Stereo Vision systems.

Easy 3D Calibration is important for practical use of 3D in industrial applications.

3D Calib 7,5x12,5x20mm

Art.no 90-823



Scorpion 3D Calibration object 90-823

Size
20 x 20 x 30mm
Base plate size
20 x 20 x 10 mm

Pyramid size
Bottom area: 12,5 x 12,5 mm
Top area: 7,5 x 7,5 mm
Height: 20 mm

Target 3D field of view from 20x20x20 mm to 80x80x80 mm.
Typical 3D accuracy 0.01 to 0.1 mm.

3D Calib 30x50x80mm

Art.no 90-824

Scorpion 3D Calibration object 90-824

Size (length, width, height)
80 x 80 x 90 mm

Base plate size
80 x 80 x 10 mm

Pyramid size
Bottom area: 50 x 50 mm
Top area: 30 x 30 mm
Height: 80 mm

Target 3D field of view - from 50x50x80 mm to 150x150x250 mm

Typical 3D accuracy 0.01 to 0.1 mm

3D Calib 200x300mm

Art.no 90-825

Scorpion 3D Calibration object 90-825

Base plate size
200 x 300 x 12 mm

Tower dimensions
40 x 40 x 150 mm
40 x 40 x 75 mm

Tower positions on base plate
(75,50), (225,150), (75,150), (225,50)

Target 3D field of view from 150x150x50 mm to 400x600x400 mm.

Typical 3D accuracy 0.1 mm.

Custom calibration objects are available upon request.

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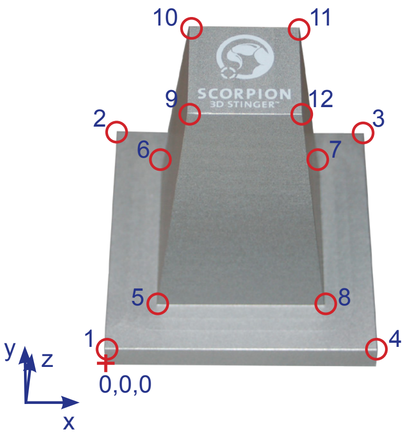
3D Calibration Objects Specification

3D Calibration Pyramid

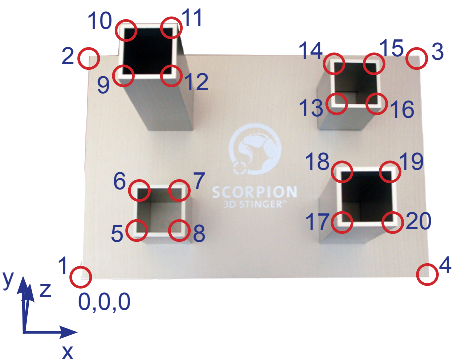


3D Calibration object point numbering, object 90-823, 90-824

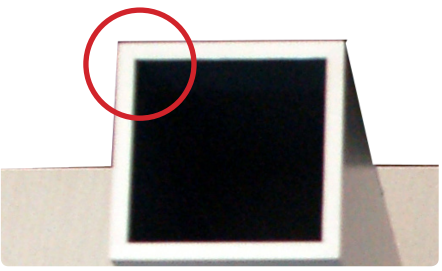
The calibration object's characteristic points are numbered as seen in the image to the left. The point coordinates for each object are given in a table below.
The origo is defined as the bottom left point of the object.

	3D Calib 7,5x12,5x20mm	3D Calib 30x50x80mm
Article number	90-823	90-824
Size (x,y,z)	20 x 20 x 30 mm	80 x 80 x 90 mm
Base plate size	20 x 20 x 10 mm	80 x 80 x 10 mm
Pyramid bottom area	12,5 x 12,5 mm	50 x 50 mm
Pyramid top area	7,5 x 7,5 mm	30 x 30 mm
Pyramid height	20 mm	80 mm
Point coordinates (x, y, z) in mm		
1	0, 0, 10	0, 0, 10
2	0, 20, 10	0, 80, 10
3	20, 20, 10	80, 80, 10
4	20, 0, 10	80, 0, 10
5	3.75, 3.75, 10	15, 15, 10
6	3.75, 16.25, 10	15, 65, 10
7	16.25, 16.25, 10	65, 65, 10
8	16.25, 3.75, 10	65, 15, 10
9	6.25, 6.25, 30	25, 25, 90
10	6.25, 13.75, 30	25, 55, 90
11	13.75, 13.75, 30	55, 55, 90
12	13.75, 6.25, 30	55, 25, 90

3D Calib 200x300mm

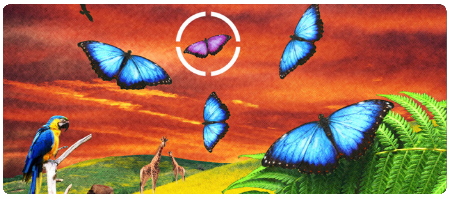


3D Calibration object point numbering, object 90-825. Tower inner point is used.



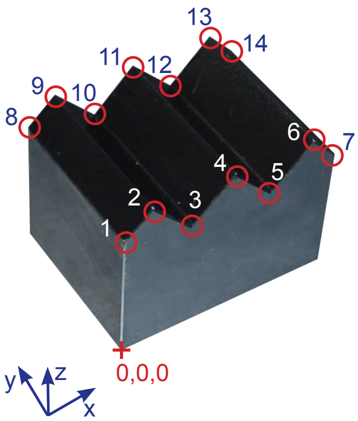
The calibration object's characteristic points are numbered as seen in the image to the left below. The point coordinates for each object are given in the table.
The origo is defined as the bottom left point of the object.

		3D Calib 200x300mm			
Article number		90-825			
Size (x,y,z)		200 x 300 x 162 mm			
Base plate size		200 x 300 x 12 mm			
Tower dimensions		40 x 40 x 150 mm 40 x 40 x 75 mm			
Point coordinates (x, y, z) in mm					
Point no	Coordinate	Point no	Coordinate	Point no	Coordinate
1	0, 0, 12	9	58, 133, 162	17	208, 33, 162
2	0, 200, 12	10	58, 167, 162	18	208, 67, 162
3	300, 200, 12	11	92, 167, 162	19	242, 67, 162
4	300, 0, 12	12	92, 133, 162	20	242, 33, 162
5	58, 33, 87	13	208, 133, 87		
6	58, 67, 87	14	208, 167, 87		
7	92, 67, 87	15	242, 167, 87		
8	92, 33, 87	16	242, 133, 87		



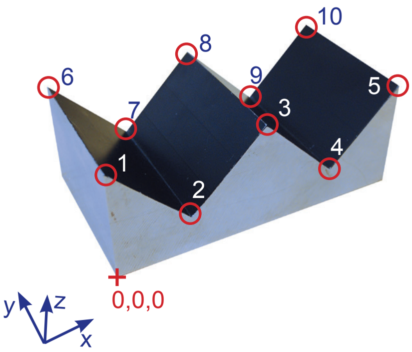
Laser Triangulation

The laser triangulation calibration object's characteristic points are numbered as seen in the image to the left. The point coordinates are given in a table below.
The origo is defined as the bottom left point of the object.



Laser triangulation 3D Calibration object point numbering, object 90-820 and 90-821.

Laser Triangulation Calibration Objects		
Article number	90-820	90-821
Size (x,y,z)	40 x 30 x 30 mm	70 x 50 x 48 mm
Pitch	15 mm	30 mm
Point coordinates (x, y, z) in mm		
1	0, 0, 25	0, 0, 43
2	5, 0, 30	5, 0, 48
3	12.5, 0, 22.5	20, 0, 33
4	20, 0, 30	35, 0, 48
5	27.5, 0, 22.5	50, 0, 33
6	35, 0, 30	65, 0, 48
7	40, 0, 25	70, 0, 43
8	0, 30, 25	0, 50, 43
9	5, 30, 30	5, 50, 48
10	12.5, 30, 22.5	20, 50, 33
11	20, 30, 30	35, 50, 48
12	27.5, 30, 22.5	50, 50, 33
13	35, 30, 30	65, 50, 48
14	40, 30, 25	70, 50, 43



Laser triangulation 3D Calibration object point numbering, object 90-826

Laser Triangulation Calibration Object	
Article number	90-826
Size (x,y,z)	150 x 80 x 57.5 mm
Pitch	75 mm
Point coordinates (x, y, z) in mm	
1	0, 0, 57.5
2	37.5, 0, 20
3	75, 0, 57.5
4	112.5, 0, 20
5	150, 0, 57.5
6	0, 80, 57.5
7	37.5, 80, 20
8	75, 80, 57.5
9	112.5, 80, 20
10	150, 80, 57.5

For more information:

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