Leica iCON trades



How-To Guide
Version 1.0
English

- when it has to be **right**

Leica Geosystems

PART OF HEXAGON

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1 Supported Tablets

Only the following mobile devices are supported by Leica iCON trades software:

- Leica CSX8
- Samsung Galaxy Tab Active Pro
- Samsung Galaxy Tab Active4 Pro

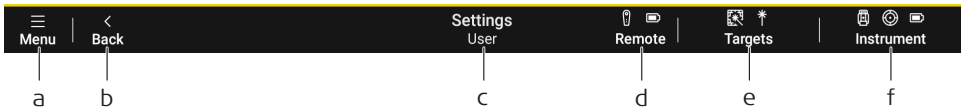
☞ Using another mobile device might result in incorrect software appearance and can negatively affect the software performance.

Leica iCON trades software can be used only in the landscape orientation.

☞ Disable the automatic screen rotation of the mobile device in the Android system settings.

2 User Interface Elements

2.1 Top Bar



a) **Menu**
b) **Back** to previous screen
c) Current menu / job
d) **Remote** menu
e) **Targets** menu
f) **Instrument** menu

The **Remote** button is only available when **Remote** was added in the **Device Manager**.

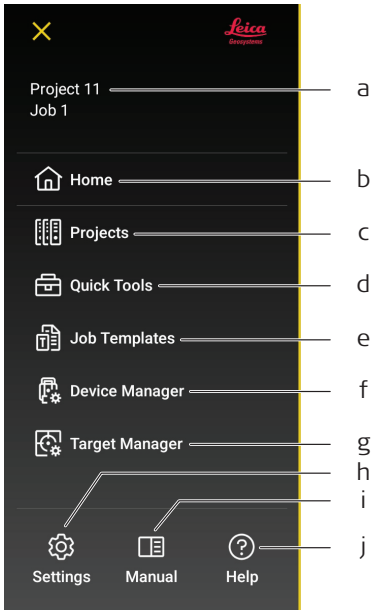
The **Targets** button is only available when connected to an instrument.

Status icons

Icon	
	Remote control connected
	Remote control not connected
	Reflective Tape target active
	vPen target active
	vSphere target active
	vTarget target active
	Custom target active
	Aiming to any surface active
	Leica round prism target active
	Crosshair mode active
	Laser pointer mode active / Laser pointer turned ON
	Laser pointer turned OFF
	Locked on a target
	Target not locked

Icon	
	Spotlight turned ON
	Spotlight turned OFF
	Instrument connected
	Instrument not connected
	Instrument update available
	Instrument levelled
	Instrument tilted
	Tilt compensator turned OFF
	Connecting to a device
	Battery status <10%
	Bettery status 10-25%
	Battery status 25-49%
	Battery status 50-74%
	Battery status 75-89%
	Battery status >90%
	Battery charging

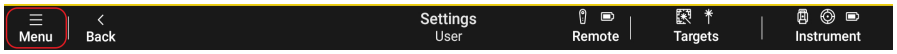
2.2 Menu



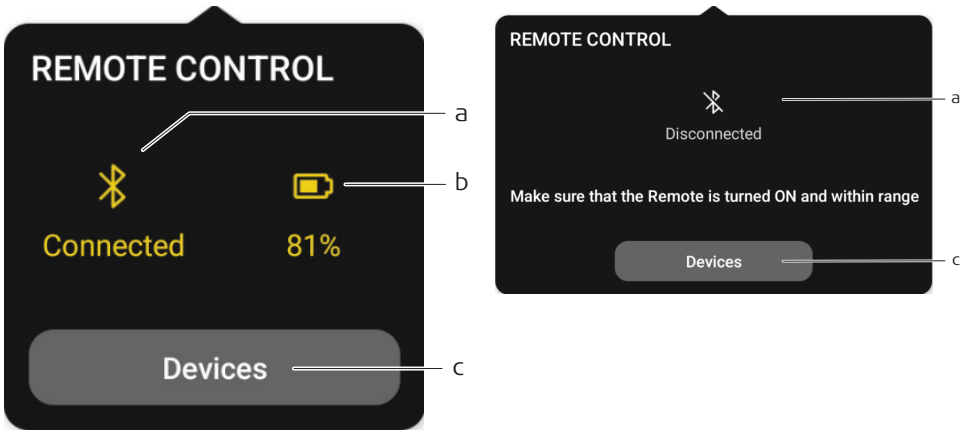
a) Active project and job
b) Home
c) Projects
d) Quick Tools
e) Job Templates
f) Device Manager
g) Target Manager
h) Settings
i) Manual
j) Interactive Help

How to access

1. Tap **Menu** on the Top Bar.



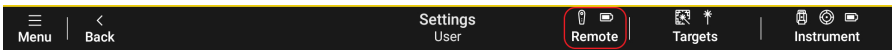
2.3 Remote Menu



a) Connection status
b) Battery level
c) **Devices**
Open the Device Manager.

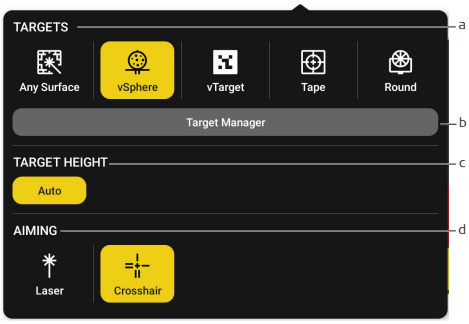
How to access

1. Tap **Remote** on the Top Bar.



☞ The menu is only visible when a remote was added in the **Device Manager**.

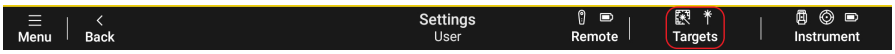
2.4 Targets Menu



a) **TARGETS**
Select the target type.
b) **Target Manager**
Open the Target Manager.
c) **TARGET HEIGHT**
Define the target height.
d) **AIMING**
Switch between aiming with the laser pointer or with the crosshair on the live view.

How to access

1. Tap **Targets** on the Top Bar.



☞ **Target height** is not available for **Any Surface**, **vPen**, **vTarget** and **Tape**.

☞ Auto target height is only available for vPole when connected to a device with hardware vPole licence active.

2.4.1 Auto-Aiming and Lock

Auto-aiming to vTarget



1. Select the vTarget from the **TARGETS** menu.
2. Aim roughly to the vTarget. The target must be visible in the field of view of the camera.

3. Tap **Measure** to trigger the auto-aiming to the centre of the vTarget and store the measurement.

☞ Available only for iCS20 and iCS50.

☞ vTarget ID is automatically recognized.

☞ Maximum tilt of the target for the best accuracy:
2 to 25 m: 45 degrees
25 to 40 m : 30 degrees

☞ To scan and autonomously measure all vTarget, use the Capture vTargets tool.

Auto-aiming to prism and reflective tape



1. Select a prism or reflective tape from the **TARGETS** menu.
2. Aim roughly to the target. The target must be visible in the field of view of the camera when using iCS20 or iCS50.
3. Tap **Measure** to trigger the auto-aiming to the centre of the target.

Lock and unlock on vPen and vSphere



1. Select **vPen** or **vSphere** from the **TARGETS** menu to trigger searching for the target.
2. Bring the target to the field of view of the camera. The instrument autonomously detects and locks on the target.
3. Select a different target type to unlock from the target.

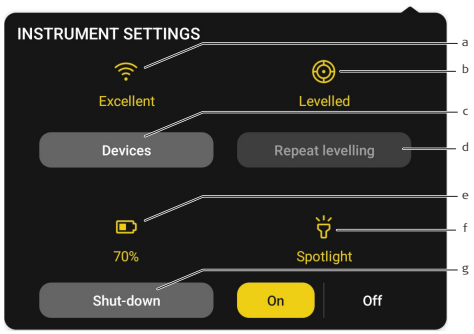
☞ Available only for iCS50 and iCS20 with Hardware Robotic licence.

☞ If the target is not detected within five seconds from the selection, an automated searching routine starts.

☞ The current lock status is displayed on the top bar and in the **Live**.

☞ It is possible to trigger a new target search by turning the instrument with **PANORAMA**.

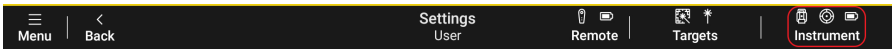
2.5 Instrument Menu



a) Connection status
b) Levelling status
c) **Devices**
Open the Device Manager.
d) **Repeat levelling** (iCS20 and iCS50) or **Levelling** (other instruments)
Start the levelling routine (only if not levelled) or display the bubble to level manually.
e) Battery level
f) **Spotlight**
Switch the spotlight LEDs on or off.
g) **Shut-down**
Turn OFF the instrument.

How to access

1. Tap **Instrument** on the Top Bar.



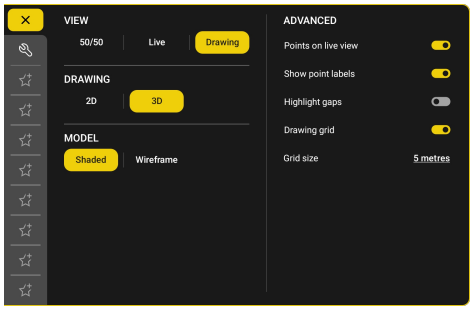
The automated levelling routine is only available for iCS20 and iCS50.

Spotlight is only available for iCS20 and iCS50.

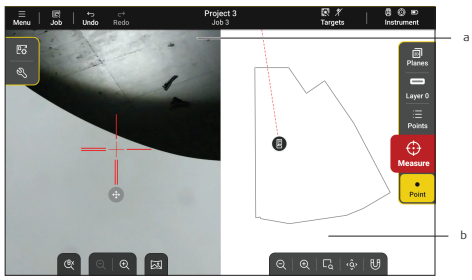
2.6 View Settings

Description

- Adjust the working space.
- Define the visibility of objects on the **Live** view and the **Drawing** view.

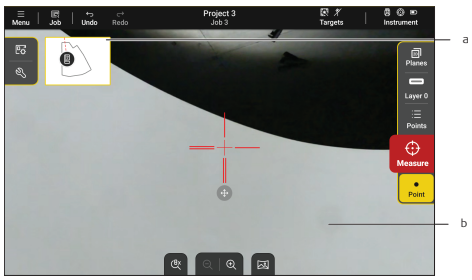


50/50 view



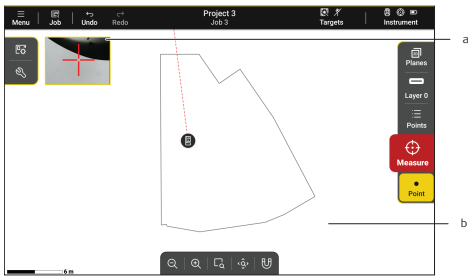
a) **Live** view
b) **Drawing** view

Full Live view



a) Minimized **Drawing** view
Double tap to switch to full **Drawing** view.
b) Full **Live** view

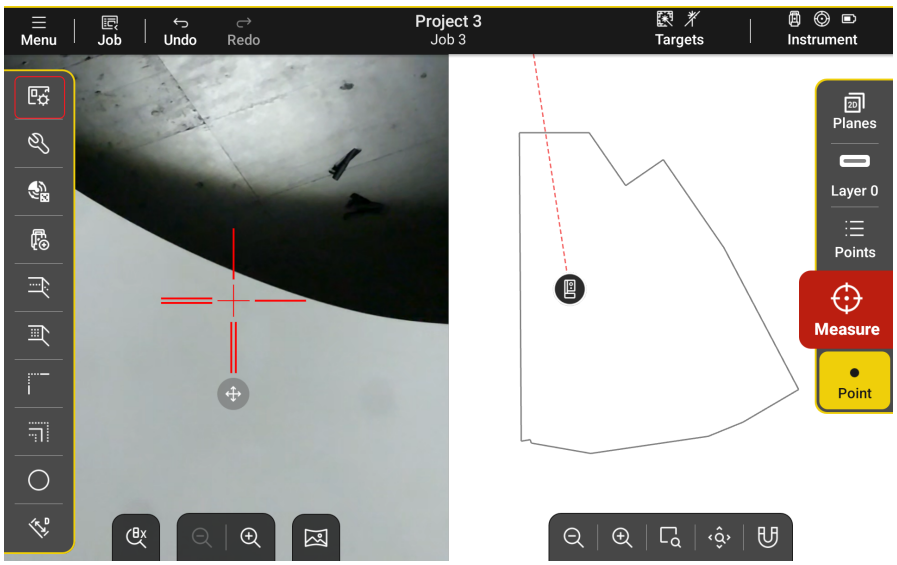
Full Drawing view



a) Minimized **Live** view
Double tap to switch to full **Live** view.
b) Full **Drawing** view

How to access

1. Open the Measure or the Layout mode.
2. Tap on the view icon.



VIEW setting is only available when connected to an instrument with camera.

☞ **MODEL** setting is only available with an IFC model in the job.

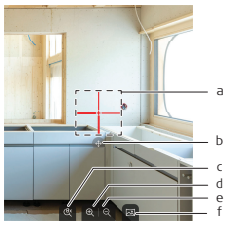
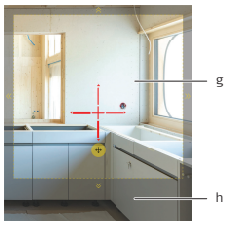
☞ **Highlight gaps** is only available with a Templating licence.

☞ Double tap on a mini view to switch to the full view.

2.7 Live View

Description

- Tap to aim roughly.
- Swipe up/down/left/right to trigger a bigger movement.
- Move and release the crosshair to aim precisely.
- Move the crosshair to the movement area to start continuous movement.
- Pinch with two fingers or double tap to zoom in/out.

Normal state	Move crosshair button pressed
	

a) Precise aiming crosshair
b) Move the crosshair
c) Fast toggle between 1x or 8x zoom
d) Zoom in
e) Zoom out
f) Show PANORAMA.
g) Precise aiming area
h) Continuous movement area

☞ An instrument with a camera is required.

☞ The crosshair blinks yellow if the device is not ready to measure.

☞ The crosshair is not visible when tracking a target.

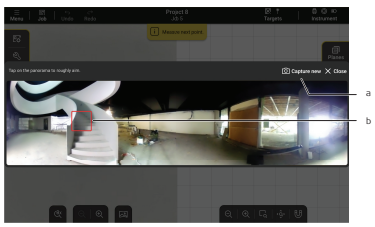
☞ A rough aiming area is displayed when aiming with **Laser** is active.

☞ Switch the points on or off in the **VIEW** of the Live view.

2.7.1 PANORAMA

Description

- 360° image of the surrounding of the instrument.
- Tap the desired location to move the instrument with high speed.



a) Capture a new panorama
b) Rough aiming area

How to access and use

1. Go to the Measure or the Layout mode.
2. Tap on the bottom of the Live View view.

Switch ON/OFF asking for Panorama in System settings.

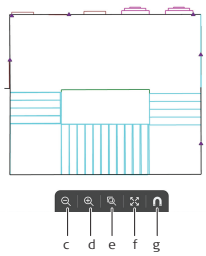
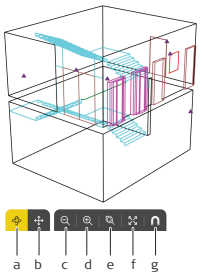
Only available for iCS20 and iCS50.

When the target is lost, tap on the panorama to start a search.

2.8 Drawing View

Description

- 2D or 3D presentation of data in the job.
- Tap to select an object.
- Long tap to trigger the area selection.
- Pinch with two fingers or double tap to zoom in or out.

2D view	3D view
	

a) Orbit, only in 3D view
b) Pan, only in 3D view
c) Zoom out
d) Zoom in
e) Zoom window
f) Zoom extents
g) Snapping Options

Open View Settings to customize visibility settings.

When a plane is active, only objects belonging to this plane are shown in the 2D view.

The top view is used to show a horizontal plane in 2D.

The front view is used to show a vertical plane in 2D.

2.8.1 Drawing Elements

Description

- Elements and objects displayed on the drawing

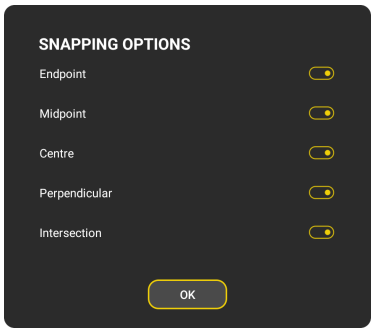
Examples

Icon	
	Instrument position in 2D view
	Instrument position in 3D view
	Indicator of instrument laser
	Position of the user (tracked target)
	vTarget
	Selected vTarget
	Single point
	Single point on a locked layer
	Selected point
	Destination point, point being laid out
	Point laid out or marked within tolerance
	Point laid out or marked out of tolerance
	Control point
	Selected control point
	Vertex
	Selected vertex
	Linear object
	Selected linear object
	Segment
	Object on a locked layer
	Temporary element to be accepted
	Potential CNC machine issue. Extremity of an object which is not touching any other object (gap). Available with the Templating licence.

2.8.2 Snapping Options

Description

- Specify a precise location on an existing object when creating new objects or working with tools.

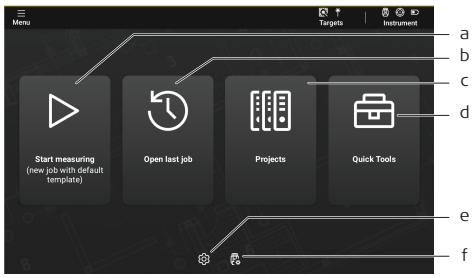


Additional options

Option	Description
Endpoint	Start or end point of a segment
Midpoint	Middle of a segment
Centre	Centre of arc or circle
Perpendicular	Perpendicular projection of the selected point on a segment
Intersection	Point where two objects are intersecting

How to access and use

1. Go to the Measure or the Layout mode.
2. Tap the snapping options . Refer to Drawing View.



a) **Quick Start**
Create a new project with new job using default template and go directly to the **Measure** mode.

b) **Open last job**
Go to the last modified job.

c) Projects
Review and create projects.

d) Quick Tools
Open a menu with quick measure and check tools.

e) Settings
Change general application settings.

f) Device Manager
Review and add Wi-Fi and Bluetooth devices.

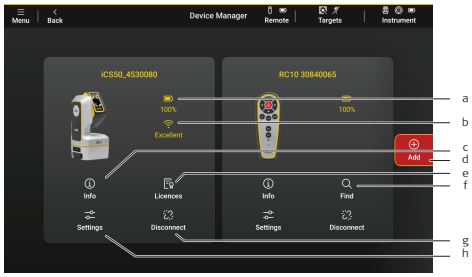
How to access

1. Open the Menu.
2. Tap **Home**.

4 Device Manager

Description

- Add and manage all Wi-Fi and Bluetooth devices, for example iCS20, iCS50 or Remote Control.
- Update devices and activate new hardware options.



a) Battery level
b) Connection Status
c) **Info**
Open information about the instrument, for example firmware status. It is recommended to check for instrument updates regularly. An Internet connection is required, therefore the software automatically connects to last used Wi-Fi network.
d) **Add**
   - Open the list of devices within the connection range.
   - Add a new device to the **Device Manager**.
e) **Licences**
Manage hardware licences, for example update the HW licences in case of adding or removing hardware options. An Internet connection is required, therefore the software automatically connects to last used Wi-Fi network.
f) **Find**
Find the device.
g) **Disconnect**
Terminate the connection to the device.
h) **Settings**
Manage settings related to the device.

How to access

1. Open the Menu.
2. Tap **Device Manager**.

OR

1. Open the Instrument Menu from the Top Bar.
2. Tap **Device Manager**.

Settings for iCS20/iCS50

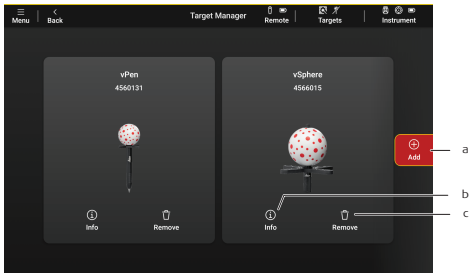
Setting	Description
Movement Alert	Alert when device is moved.

Setting	Description
Instrument Wi-Fi	Switch the Wi-Fi of the instrument on or off. ☞ USB connection required to turn the Wi-Fi back.

5 Target Manager

Description

- Add vPen and vSphere.
- Add prisms and other reflective targets with customized constants.



a) **Add**
Add a new target.
b) **Info**
Open target details.
c) **Remove**
Delete the target.

How to add vPen or vSphere

1. Tap **Add**.
2. Select the target type to be added: **vPen** or **vSphere**
3. Enter the 6-digit serial number printed on the side of the target.



☞ Make sure that the serial number is entered correctly. An incorrect serial number might result in a wrong target calibration!

4. Select the pre-downloaded calibration file manually or download it automatically. An Internet connection is required to download the calibration file.

How to access

1. Open the Menu.
2. Tap **Target Manager**.

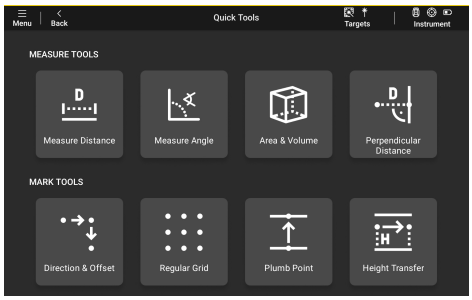
☞ **vPen** and **vSphere** are only available for iCS20 and iCS50.

☞ Only one vPen and one vSphere can be listed in Target Manager.

6 Quick Tools

Description

- Measure distances, areas and angles and generate reports.
- Quickly mark points for installations.
- Job creation is not required – start marking or measuring right away.
- For more details refer to:
  Distance
  Angle
  Area & Volume
  Perp. Distance
  Direction & Offset
  Regular Grid
  Plumb Point
  Height Transfer



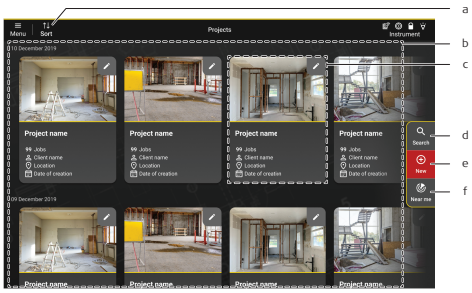
How to access

1. Open the Menu.
2. Tap **Quick Tools**.

☞ Measurements are not stored when done using **Quick Tools**.

7 Data Management

7.1 Projects



a) **Sort**
Sort projects by date of creation or modification.
b) Projects list
List of projects, scrollable horizontally and vertically
c) Project Tile
Overview of the project. Tap to open the project.
Tap ✎ to edit Project Details.
d) **Search**
Find projects with specific keywords.
e) **New**
Create a new project.
f) **Near**
Find projects close to the current location.

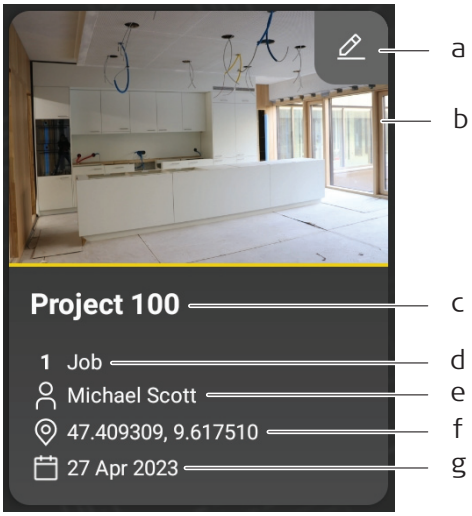
How to access

1. Open the Menu.
2. Tap **Projects**.

☞ Long tap on a project tile to select one or several projects.

☞ Projects grouping can be changed in the System settings.

7.1.1 Project Tile

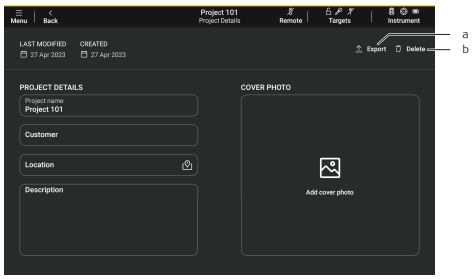


a) Edit project details
b) Cover photo or last used job preview
c) Project name
d) Number of jobs in the project
e) Client name
f) Location
g) Creation date

7.1.2 Project Details

Description

- Edit project details.
- This information is displayed on the project tile and is printed in PDF exports.



a) **Export**
Export all file formats from all jobs within the project.
b) **Delete**
Delete the project and all jobs.

How to access

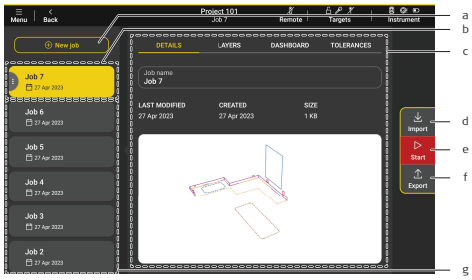
1. Open Projects.
2. Tap in the corner of the Project Tile.

Enter the location manually or tap the button to use the tablet location.

7.2 Job

Description

- Select a job from the active project.
- Create new or edit existing jobs.

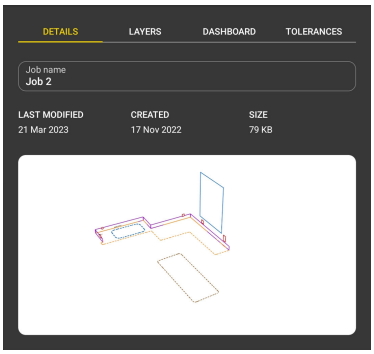


a) **New job**
b) Active job
c) Active Job overview
d) Import
Import data to the job.
e) **Start**
Start your work.
f) Export
Export data from the job.
g) List of jobs in the active project

7.2.1 Job Details

Description

- Review details of the active job.
- Change the job name.



Open the drawing by pressing **Start** to update the preview.

7.2.2 LAYERS

Description

- Review and edit layers in the active job.

Why layers are useful?

A layer is a container of data with a specific color. Usage of layers:

- Organize objects in the drawing.
- Quickly recognize objects based on the different style of each layer.
- See only what is needed by controlling the visibility of layers.
- Prepare a structure of exported CAD drawings.

Control points layer

- Use this layer to measure reference points for the relocation or securing the position.
- Measured vTargets are stored in this layer.
- Imported control points appear on a dedicated control points layer.



a) **Load Template**
Load existing Job Templates.

b) **Save Template**
Save the list of layers and tolerances as Job Templates.

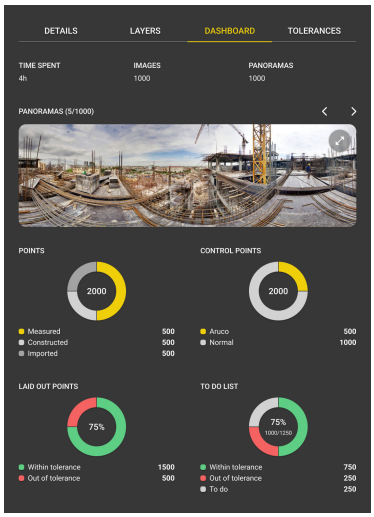
c) **Edit Layers**
Open the Layer Manager.

☞ **Control Points** and **Layer 0** are created automatically.

7.2.3 DASHBOARD

Description

- Review statistics from the active job.



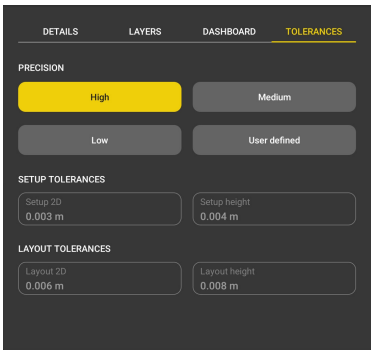
☞ **PANORAMAS** is only available for iCS20 and iCS50.

☞ **LAID OUT POINTS** and **TO-DO LIST** are available with an active Layout licence.

7.2.4 TOLERANCES

Description

- Change **SETUP TOLERANCES**
  A warning appears if the setup accuracy is lower than the defined tolerances.
- Change **LAYOUT TOLERANCES**
  The layout status is displayed as **Out of tolerance** if the distance between laid out point and design point is bigger than the defined tolerances.

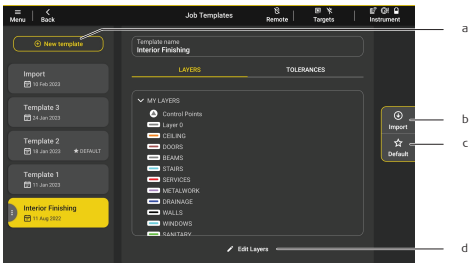


LAYOUT TOLERANCES is available with an active Layout licence.

7.3 Job Templates

Description

- Create favourite job templates with customised layer structure and tolerances.
- Select default job template to use when a new job is created.



a) **New template**
Create a new template.

b) **Import**
Import a layer structure from a DXF/DWG file.

c) **Default**
Use this template for newly created jobs.

d) **Edit Layers**
Open the Layer Manager to edit layers.

How to access

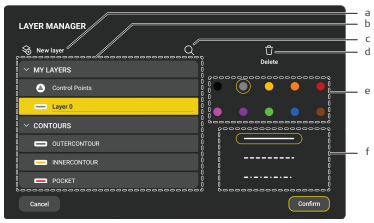
1. Open the Menu.
2. Tap **Job Templates**.

☞ A dedicated ALPHACAM countertops template is available when a SW Templating licence is active.

7.4 Layer Manager

Description

- Create, edit, and delete layers.



a) **New layer**
Create a new layer.
b) List of layers
c) Search for a layer name.
d) **Delete**
Remove the selected layer.
e) Change the colour of selected layer.
f) Change the line style of selected layer.

How to access

1. Open a Projects.
2. Open a Job.
3. Go to LAYERS.
4. Tap **Edit Layers**.

OR

1. In the Measure mode or Layout mode open the LAYERS menu on the Action Bar.
2. Tap **Edit Layers**.

☞ At least one layer is required.

☞ The text size for the **Text** layer is customizable.

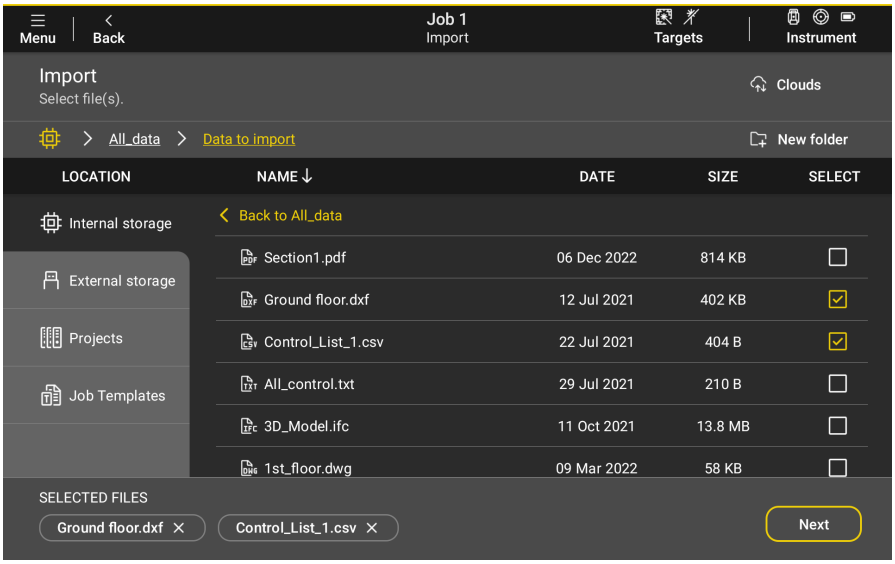
7.5 Import

Description

- Import TXT, CSV, PDF, DXF, DWG or IFC files to the job.

1. Click the **Import** button on the Job screen.

2. Select file(s) to import. Selected files appear on the bottom of the screen. It is possible to select multiple files from multiple locations.



3. Define import settings for each file and confirm.
   - DXF/DWG Import
   - TXT, CSV Import
   - PDF Import

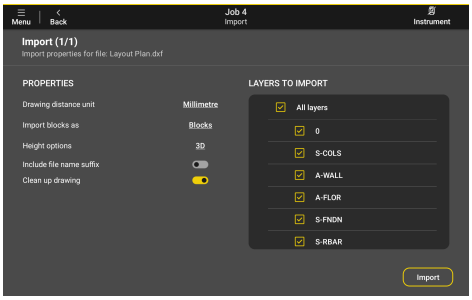
☞ Import TXT or CSV files as control to assign all points to the **Imported Control Points** layer.

☞ Every **vTarget** is automatically recognized as Control Point based on ID.

☞ For DXF and DWG files, the setting **Clean up drawing** removes before the import: Unreferenced blocks, unreferenced and empty layers, unreferenced style definitions, and duplicated objects.

☞ Import of IFC file is only available with an active BIM OBJECTS licence.

7.5.1 DXF/DWG Import

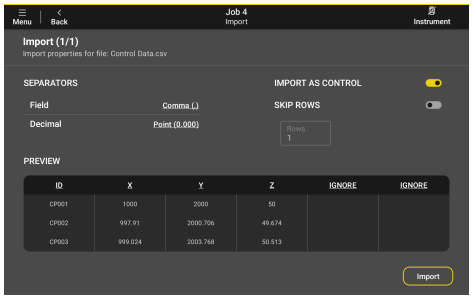


Additional options

Option	Description
Drawing distance unit	Define units of the imported CAD drawing. The software automatically detects the drawing units set in the CAD drawing.

Option	Description
Import blocks as	Keep blocks as blocks, transform blocks into a single point or explode blocks into multiple objects.
Height options	Import the drawing as 3D with original Z coordinate or as 2D to flatten the image and ignore the Z coordinate.
Include file name suffix	Add a file name suffix to each layer imported from the file.
Add points on element main positions	Create new single points on each main position of all imported linear and circular objects, for example start point, end point, corner or centre point of a circle. Not recommended for large drawings.
Clean up drawing	Remove unreferenced blocks, unreferenced and empty layers, unreferenced style definitions and duplicated objects.

7.5.2 TXT, CSV Import

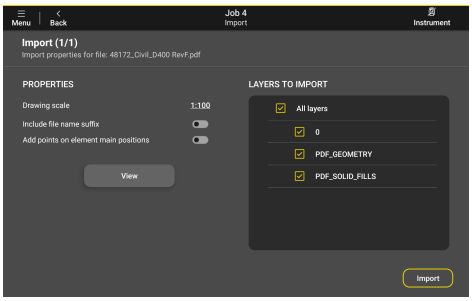


Additional options

Option	Description
SEPARATORS - Field	Define which separator is used to between different values.
SEPARATORS - Decimal	Define which separator is used between integer and decimal part of the value.
IMPORT AS CONTROL	Assign all imported points to an **Imported Control Points** layer and add control point icon.
SKIP ROWS	Define how many rows do not contain values for import, for example header row.

☞ Tap on a column name to change the column order and define columns to ignore.

7.5.3 PDF Import



Additional options

Option	Description
Drawing scale	Define the import scale of the PDF file. It is possible to scale the drawing later using the Scale Drawing tool.
Include file name suffix	Add a file name suffix to each layer imported from the file.
Add points on element main positions	Create new single points on each main position of all imported linear and circular objects, for example start, end point, corner or centre point of a circle. Not recommended for large drawings.

☞ Tap **View** to preview the PDF file to check the content and the scale.

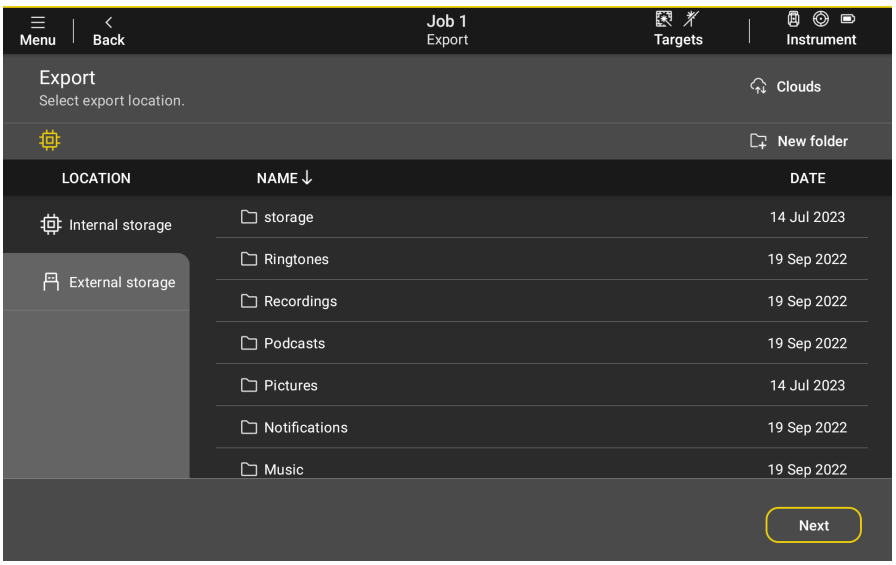
☞ The PDF file is automatically converted into a vector drawing.

7.6 Export

Description

- Export data from the job in multiple formats.

1. Click the **Export** button on the Job screen.
2. Define the export location.



3. Select one format or several formats to export.



All files are exported to the folder iCONtrades_Projectname_Exports. The folder is created automatically at the selected location.

7.6.1 Images (JPEG)

Description

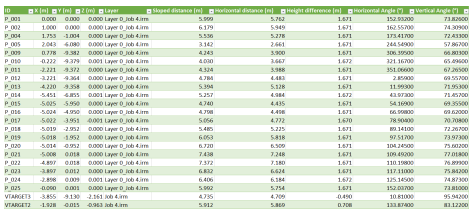
- Panorama images. Available only for iCS20 and iCS50.
- Photos captured during measurements. Available only for instruments with camera.

7.6.2 Point List (CSV)

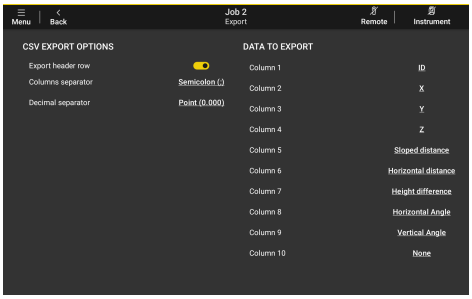
Description

- List of all points with coordinates with customizable columns order and separators.

Example



Export options

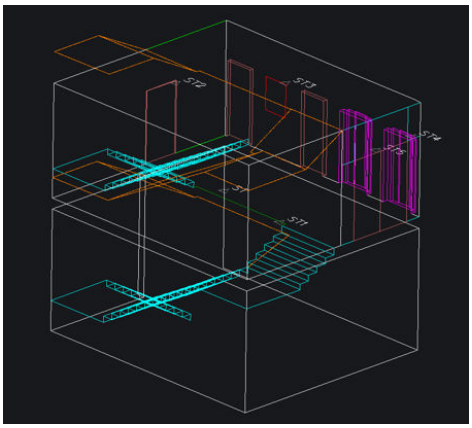


7.6.3 3D DXF

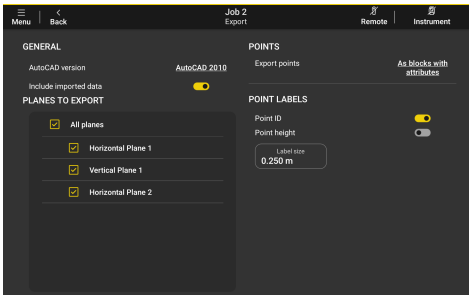
Description

- All objects are exported with measured coordinates.
- Points are exported on a separate layer.
- Planes are presented together with unprojected measurements.

Example



Export options

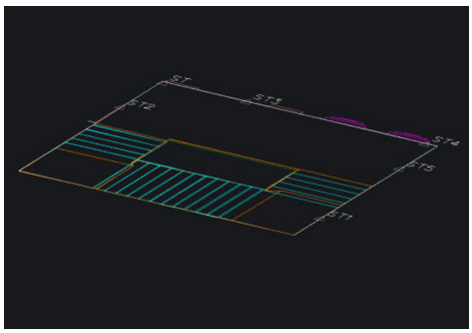


7.6.4 2D DXF

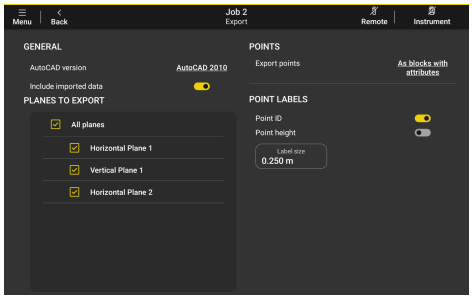
Description

- All measurements are exported with 2D coordinates (Z=0). This is a top view.
- Each plane is presented separately.
- Points are exported on a separate layer.

Example



Export options

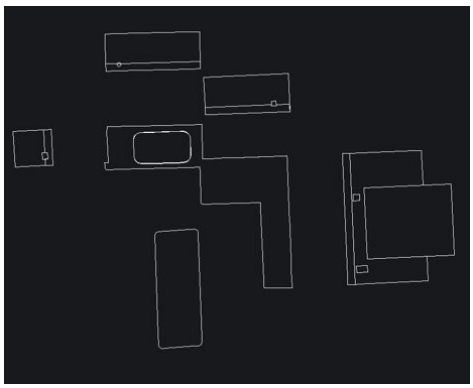


7.6.5 CNC DXF

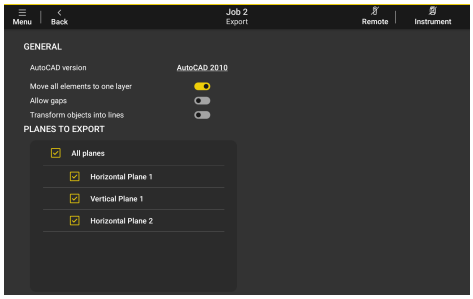
Description

- All measurements are exported with 2D coordinates (Z=0).
- All planes are shown in a combined drawing.
- Points are not exported.
- Annotations and dimensions are not exported.
- Customizable selection of planes to export
- It is possible to keep the original layer structure or move all objects to one layer.
- It is possible to transform polylines, rectangles, circles, and arcs into lines.
- **Allow gaps** to allow export open objects that are not connected to any other objects.

Example



Export options



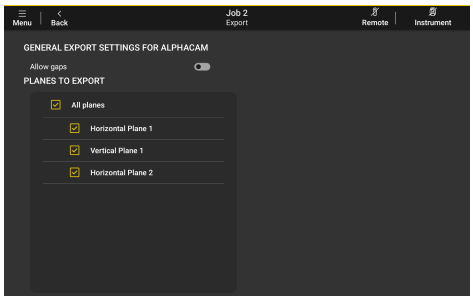
A Templating licence is required.

7.6.6 ALPHACAM (IAZ)

Description

- All measurements are exported with 2D coordinates (Z=0).
- Dedicated export to ALPHACAM software for seamless CNC machine programming.
- Customizable selection of planes to export
- **Allow gaps** to allow export open objects that are not connected to any other objects.

Export options



A Templating licence is required.

7.6.7 Shop Sheet (PDF)

Description

- Overview drawing containing all planes in a combined view
- Separate page for each plane in a detailed view with annotations and dimensions

Example



Shop Sheet (PDF)

Report created: 05 July 2023 12:03

Details

Project
Name: Demo Project
Date: 30 June 2023
Location: Main Street 23
Customer: Henry Smith

Job
Name: Kitchen Finished
Date: 17 November 2022
User: Michael Scott

Description

Content

Drawing overview 2
Horizontal Plane 1 3
Wall 1 4
Wall 2 5
Wall 3 6
Wall 4 7
Wall 5 8
Island 9

Walls
Sockets
Backsplash

Plane 5: Wall 4
Report created: 05 July 2023 12:03

Project
Name: Demo Project
Location: Main Street 23
Customer: Henry Smith

Job
Name: Kitchen Finished
User: Michael Scott

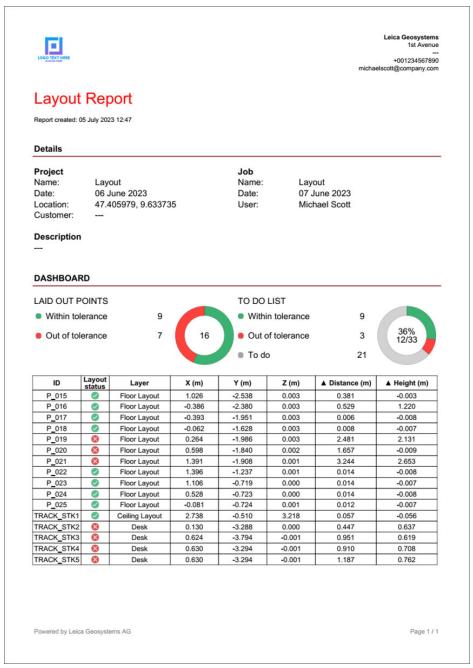
A Templating licence is required.

7.6.8 Layout Report (PDF)

Description

- List of laid out points with layout status and layout quality

Example



Leica Geosystems
1st Avenue

+001234567890
michaelscott@company.com

Layout Report

Report created: 05 July 2023 12:47

Details

Project
Name: Layout
Date: 06 June 2023
Location: 47.405979, 9.633735
Customer: ---

Job
Name: Layout
Date: 07 June 2023
User: Michael Scott

Description

DASHBOARD

LAID OUT POINTS
- Within tolerance 9
- Out of tolerance 7

16

TO DO LIST
- Within tolerance 9
- Out of tolerance 3
- To do 21

36%
12/33

ID	Layout status	Layer	X (m)	Y (m)	Z (m)	▲ Distance (m)	▲ Height (m)
P_015	✓	Floor Layout	1.026	-2.538	0.003	0.381	-0.003
P_016	✓	Floor Layout	-0.386	-2.380	0.003	0.529	1.220
P_017	✓	Floor Layout	-0.393	-1.951	0.003	0.006	-0.008
P_018	✓	Floor Layout	-0.062	-1.628	0.003	0.008	-0.007
P_019	✗	Floor Layout	0.264	-1.986	0.003	2.481	2.131
P_020	✗	Floor Layout	0.598	-1.840	0.002	1.657	-0.009
P_021	✗	Floor Layout	1.391	-1.908	0.001	3.244	2.653
P_022	✓	Floor Layout	1.396	-1.237	0.001	0.014	-0.008
P_023	✓	Floor Layout	1.106	-0.719	0.000	0.014	-0.007
P_024	✓	Floor Layout	0.528	-0.723	0.000	0.014	-0.008
P_025	✓	Floor Layout	-0.081	-0.724	0.001	0.012	-0.007
TRACK_STK1	✓	Ceiling Layout	2.738	-0.510	3.218	0.057	-0.056
TRACK_STK2	✗	Desk	0.130	-3.288	0.000	0.447	0.637
TRACK_STK3	✗	Desk	0.624	-3.794	-0.001	0.951	0.619
TRACK_STK4	✗	Desk	0.630	-3.294	-0.001	0.910	0.708
TRACK_STK5	✗	Desk	0.630	-3.294	-0.001	1.187	0.762

Powered by Leica Geosystems AG

Page 1 / 1

☞ A Layout licence is required.

Description

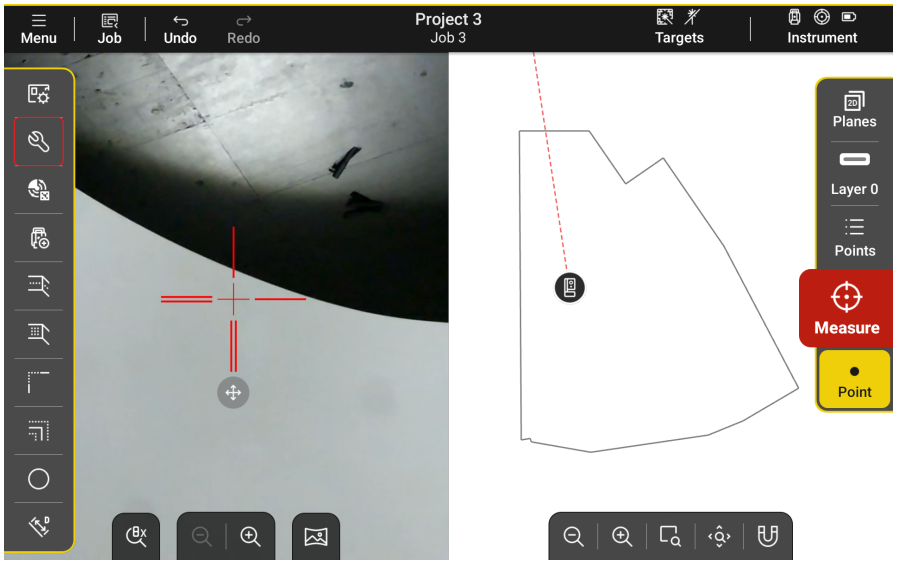
- Methods dedicated to calculating the position of the instrument on the current drawing
- Using one of the methods is required if the Job contains data.
- The drawing must contain elements which can be measured in reality, for example control points, walls or grid lines.
- Also used when relocating within the same drawing

How to access from Projects Screen

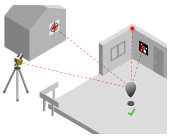
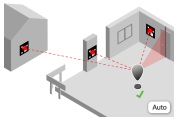
1. Open a Projects.
2. Open a Job that contains data.
3. Tap **Start**.

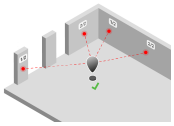
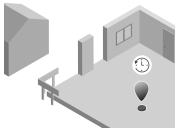
How to access from measuring workspace

1. Tap on the tools icon.



2. Open the Setup Tools tab.
3. Start **New Setup**.

Icon	
	Known points
	vTargets (auto)

Icon	
	Walls/Grid lines
	Last setup

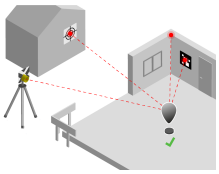
To check the current setup quality or capture data for setup, use the Setup Tools.

Measure first two points at the exact same position to setup the instrument at coordinates 0,0,0.

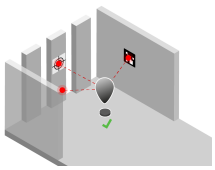
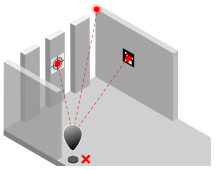
8.1 Known points

Description

- Position the instrument using at least two drawing point elements, for example:
  - Control points
    For example: Prisms, vTarget or reflective tapes. Also, stable and easy to identify points, measured on the **Control Points** layer.
  - Regular points
    Any point from a drawing which can be easily identified and measured.
  - Vertices
    Start points, end points and middle points of linear objects. For example corners of the room.
- Follow the steps indicated in the software.



Instructions

Do	Do NOT
	

Additional options

Icon	
	LAYERS Turn the visibility of layers on or off or lock layers.

Icon	
	Details Review used setup points and the setup quality.
	Accept Accept the setup.
	POINTS Open the list of points in the job.
	FIND POINT Search a point by point ID.

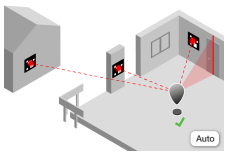
Use targets distributed equally around the instrument to increase the setup quality.

Using at least three points is recommended.

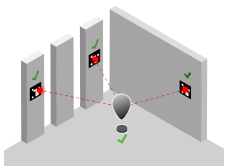
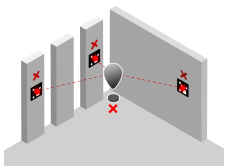
8.2 vTargets (auto)

Description

- Position the instrument using vTargets.
- The instrument autonomously detects and measures vTargets available in the job. vTargets must be previously imported or measured, for example with **Capture vTargets** tool.
- Follow the steps indicated in the software.



Instructions

Do	Do NOT
	

Additional options

Icon	
	LAYERS Turn the visibility of layers on or off or lock layers.
	Details Review used vTargets and the setup quality.
	Accept Accept the setup.
	Repeat Restart the search for vTargets.

This setup method is only available for iCS20 and iCS50.

☞ This setup method is only available if the drawing contains two vTargets.

☞ To increase the setup quality, place the instrument in the centre of the targets.

☞ To increase the detection rate and accuracy, place the instrument more or less perpendicular to the target. The laser measurement accuracy decreases when the target is tilted more than 45° from the instrument.

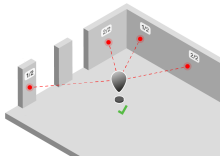
☞ The software automatically finds the best combination of measured targets to achieve the best setup quality.

☞ Using at least three targets is recommended.

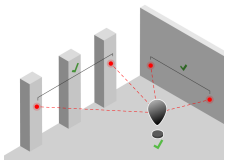
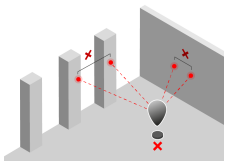
8.3 Walls/Grid lines

Description

- Position the instrument in 2D (no height) using two non-parallel walls or grid lines.
- Follow the steps indicated in the software.



Instructions

Do	Do NOT
	

Additional options

Icon	
	LAYERS Turn the visibility of layers on or off or lock layers.

☞ The distance between the measurements should be as big as possible.

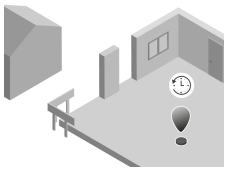
☞ Use the Set Setup Height tool to add a height coordinate to the instrument position. The tool can be launched immediately after the setup calculation.

☞ It is recommended to use approximately perpendicular lines

8.4 Last setup

Description

- Use the last position of the instrument.
- Use only if the instrument is still in the same position.



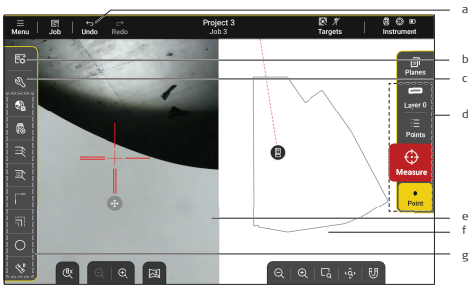
☞ This setup method is only available if the last measurement from the previous setup was taken less than two hours ago.

☞ This setup method is only available if no instrument movement was detected.

Description

- Collect 2D and 3D data.
- Create a new drawing or add more data.

Measure Screen



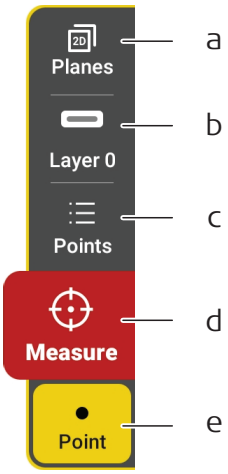
a) **Undo** and **Redo** last action
b) View Settings
c) Tools
d) Action Bar
   - Contains all important actions for the current mode or tool.
   - Dynamically changes depending on the current situation.
e) Live View
f) Drawing View
g) Favourites

How to access

1. Open a Projects.
2. Open a Job.

   Tap **Start**.

Action Bar



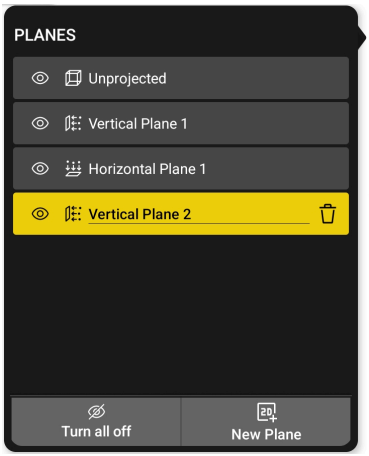
a) PLANES
b) LAYERS
c) POINTS
d) **Measure**
Available when the instrument is in ready-to-measure state
e) MEASURING SETTINGS

☞ A switch between Measure and Layout mode is available in the Tools menu.

9.1 PLANES

Description

- Create multiple horizontal or vertical planes when measuring for example: floor plan, facade, countertop or backsplash
- Tap to change the active projection mode: Unprojected or projected to a plane.
- Rename or delete planes
- Toggle the visibility of data based on the projection. Only for 3D view.



How to access

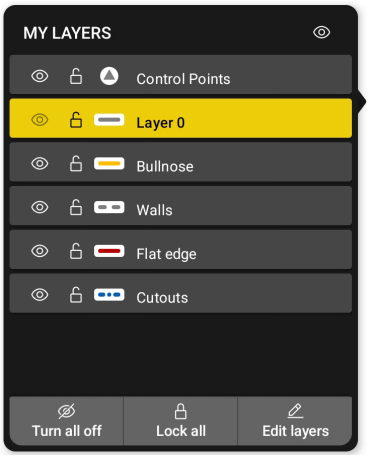
1. Open the Measure screen.
2. Tap on .

☞ Only available in **Measure** mode.

9.2 LAYERS

Description

- Tap to activate a layer in **Measure** mode.
- Toggle the visibility of layers.
- Lock and unlock layers to disable object selection.
- Select **Control Points** layer to measure a control point.



How to access

1. Open the Measure screen.
2. Tap on ⧉.

☞ At least one active layer is required to measure new objects.

☞ Data on a locked layer cannot be selected.

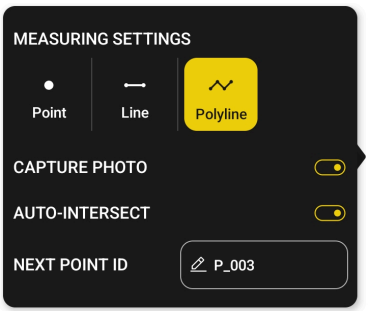
9.3 POINTS

☞ The features are very similar as in layout mode. Refer to POINTS.

9.4 MEASURING SETTINGS

Description

- Select the object type to create during measurements.
- Switch capturing a photo during the measurement on or off.
- Switch on or off the auto-intersection of consecutive segments during polyline measurements.
- Define the ID for the next measured point.



How to access

1. Open the Measure screen.
2. Tap on the active feature icon (• , ⟝ or ⟋) below the **Measure** button on the action bar.

☞ **CAPTURE PHOTO** is only available for instruments with camera.

☞ IDs of vTargets are automatically recognized.

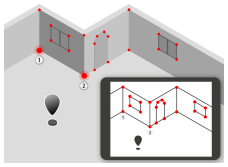
☞ Available only in the **Measure** mode.

☞ **AUTO-INTERSECT** is only available with an active Templating licence.

9.5 How to Measure 3D

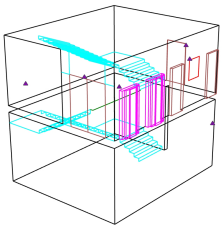
Description

- Create 3D models with measurements.
- When the job is empty, the first two measured points define the drawing alignment.
- All measurements are stored with original, unprojected coordinates.



1.	Start **3D** or select the **Unprojected** projection type. Refer to PLANES.
2.	Select a target type in the Targets Menu menu.
3.	Select the active layer in LAYERS.
4.	Select the object type. Refer to MEASURING SETTINGS.
5.	Measuring without any target: Aim using laser or the Live View view. Measuring with a target, for example vPen or vPole: Go to the point.
6.	Tap **Measure**.

Example



☞ If the job contains data, a 3D setup is required to measure in 3D.

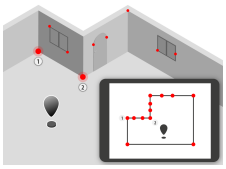
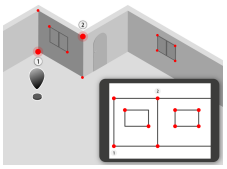
☞ Measure first two points at the exact same position to setup the instrument at coordinates 0,0,0.

☞ An nstrument connection is required.

9.6 How to Measure 2D

Description

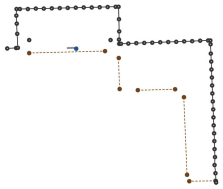
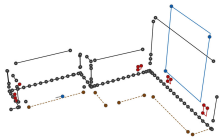
- Create 2D drawings with all measurements projected on a plane.
- When the job is empty, the first two measured points define the drawing alignment with the first point at 0,0,0.
- Create multiple vertical and horizontal planes in the same job.

2D Horizontal	2D Vertical
	

1. Start **2D Horizontal**, **2D Vertical** or activate a plane in PLANES.
2. Select a target type in Targets Menu.
3. Activate a layer in LAYERS.
4. Select the object type in MEASURING SETTINGS.
5. Measuring without any target:
   Aim using laser or the Live View.

   Measuring with a target, for example vPen or vPole:
   Go to the point.
6. Tap **Measure** or trigger the measurement with the remote control.

Example

2D view – only one plane visible	3D view – multiple planes visible
	

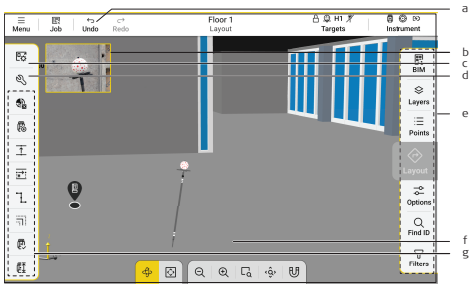
☞ Control Points are visible only in the 3D view if the job contains only planes. The view will switch automatically when starting a new setup.

☞ An instrument connection is required.

Description

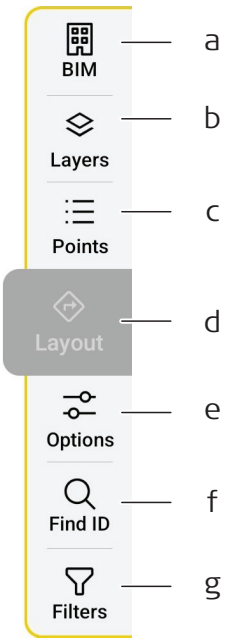
- Transfer points and objects from the drawing into the reality using laser or trackable targets.
- Layout points and objects from CSV, PDF, DXF, DWG and IFC files.

Layout Screen



a) **Undo** and **Redo** last action
b) Live View
c) View Settings
d) Tools
e) Action Bar
   - Contains all important actions for the current mode or tool.
   - Dynamically changes depending on the current situation.
f) Drawing View
g) Favourites

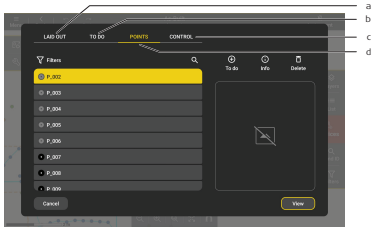
Action Bar



a) BIM
b) LAYERS
c) POINTS
d) **Layout**
Available when a point or object for layout is selected.
e) LAYOUT OPTIONS
f) FIND POINT
g) FILTERS

A switch between Measure and Layout mode is available in the Tools menu.

10.1 POINTS



a) LAID OUT Tab
b) TO-DO Tab
c) POINTS Tab
d) CONTROL Tab

How to access

1. Open the Layout mode.
2. Tap on ☰.

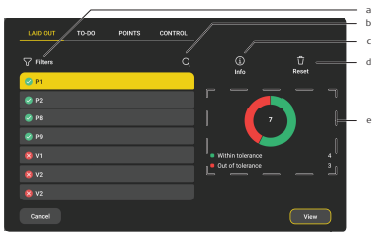
TO-DO and **LAID OUT** tabs are only available in **Layout** mode.

A photo is only available when it was captured during the measurement.

10.1.1 LAID OUT Tab

Description

- Review layout statistics.
- Review status of all points with stored layout information.
- Reset layout status of a point.
- Filter and search for points.
- Tap **View** when a point is selected to show it on the drawing.



a) Filter points based on status
b) Search for point based on ID
c) Open info dialogue about the point
d) Reset layout status. Point will be removed from the LAID OUT tab.
e) Layout status

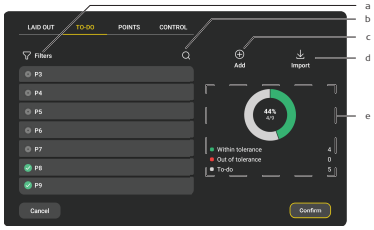
☞ Available only in the **Layout** mode.

☞ Long tap to select multiple points.

10.1.2 TO-DO Tab

Description

- Create a list of points to layout.
- Review the progress of the layout task.
- Filter and search for points.
- Tap **View** when a point is selected to show it on the drawing.



a) Filter points based on status
b) Search for point based on ID
c) Add points from the drawing to **TO-DO LIST**
d) Import points from TXT or CSV file
e) **TO-DO LIST** layout progress

How to add points

1. Open the **TO-DO LIST**.
2. Tap **Add**.
3. Select points or objects from the drawing.
4. Accept the selection.

☞ Available only in the **Layout** mode.

☞ Long tap to select multiple points.

☞ Points from **TO-DO LIST** have priority for auto next point selection.

10.1.3 POINTS Tab

Description

- Review and delete single points from the job.
- Review photos captured during measurements.
- Filter and search for points.
- Tap **View** when a point is selected to show it on the drawing.



a) Filter points based on status
b) Search for point based on ID
c) Add the selected point or points to **TO-DO LIST**. Available only in the Layout mode
d) Open more information about the selected point
e) Delete the selected point(s) from the drawing
f) Photo captured during the measurement

☞ Long tap to select multiple points.

10.1.4 CONTROL Tab

Description

- Review and delete control points from the job.
- Review photos captured during measurements.
- Filter and search for points.
- Tap **View** when a point is selected to show it on the drawing.



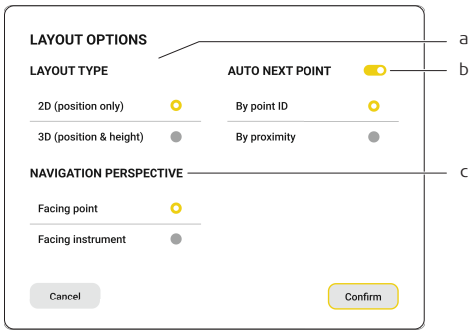
a) Filter points based on type
b) Search for point based on ID
c) Open more information about the selected point
d) Delete the selected point(s) from the drawing
e) Photo captured during the measurement

☞ Long tap to select multiple points.

10.2 LAYOUT OPTIONS

Description

- Customize the layout navigation process.



a) **LAYOUT TYPE**
   - **2D (position only)**
     Only X and Y coordinates are checked during the navigation. A successful layout status can be achieved even if the height difference exceeds the defined tolerance.
   - **3D (position & height)**
     X, Y and Z coordinates are checked during the navigation. For a successful layout, all differences must be within the tolerances.

b) **AUTO NEXT POINT**
   Switch automatic layout start to the next point on or off when **Store** button is pressed.
   The next point is selected based on the ID or distance from the current position.

c) **NAVIGATION PERSPECTIVE**
   Select the orientation point for the layout navigation.
   Refer to Layout Facing the Instrument and Layout Facing the Point.

How to access

1. Open the Layout mode.
2. Tap on ⚙.

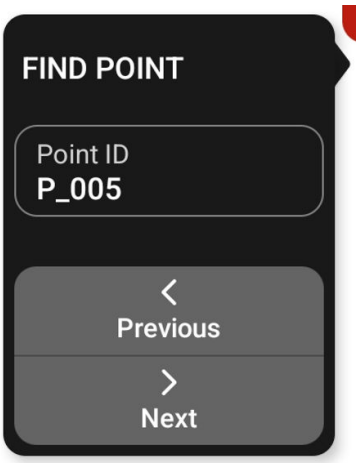
☞ **NAVIGATION PERSPECTIVE** is unavailable for laser layout.

☞ Navigation facing the point is available only for iCS50 and vPole.

10.3 FIND POINT

Description

- Search for a specific Point ID.
- The point found is shown in the centre of the drawing.
- Switch to the next or previous point.



How to access

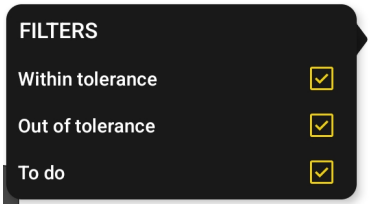
1. Open the Layout mode.
2. Tap on Q.

☞ Available when the workflow requires point selection.

10.4 FILTERS

Description

- Filter data on the drawing based on the layout status.



How to access

1. Open the Layout mode.
2. Tap on ▽.

☞ Available only in the **Layout** mode.

10.5 Layout with Laser

Description

- Use the laser pointer of the instrument to layout points or objects.
- The instrument turns automatically to the selected point.
- The instrument automatically projects the point on the as-built surface if the designed surface cannot be found. The offset from the designed position is displayed.

Refer to:

- How to Layout a Point with the Laser
- How to Layout other Elements with the Laser

A Layout licence is required.

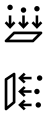
10.5.1 How to Layout a Point with the Laser

Description

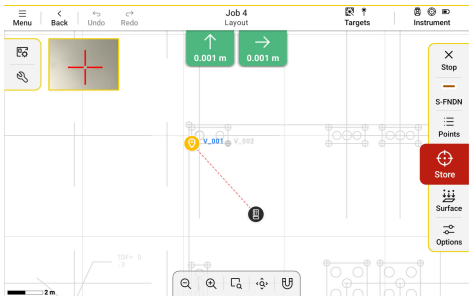
- Use the laser of the instrument to find a real position of a point from the drawing.
- The instrument turns automatically to the selected point.
- The instrument projects automatically the point on the as-built surface if the designed surface cannot be found.

1. Select **Any Surface** from the Targets Menu.
2. Select a point.
3. Aim to the layout surface. Required only if the setup is 2D and does not have a height.
4. Tap **Layout**.
5. Mark the point at the laser position.
6. Tap **Store** to save the layout quality information.

Additional options

Icon	
	**Surface** Change the surface used for layout. The icon shows the current active surface.

Example



Aiming to the surface is required if the position cannot be found automatically.

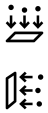
10.5.2 How to Layout other Elements with the Laser

Description

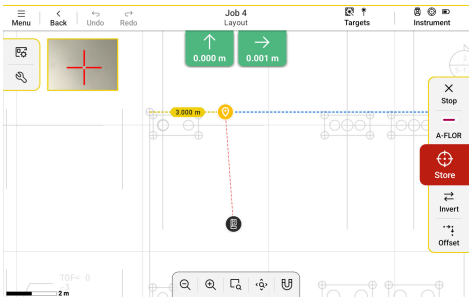
- Use the laser pointer of the instrument to find the real position of lines, polylines, circles and other objects from the drawing.
- The instrument turns automatically to the selected point along the object.
- The instrument projects automatically the point on the as-built surface if the designed surface cannot be found.
- When the layout information is stored, the instrument automatically moves to the next point that belongs to the object.

1.	Select **Any Surface** from the Targets Menu.
2.	Select an object.
3.	Select a starting vertex or segment to layout. This is not required for circles and arcs.
4.	Aim to the layout surface. Required only if the setup is 2D and does not have a height.
5.	Tap **Layout**.
6.	Define the distance along the object and optionally the offset from the object. Refer to Layout with an Offset.
7.	Tap **Confirm**.
8.	Mark the point at the laser position.
9.	Tap **Store** to save the layout quality information.

Additional options

Icon	
	**Surface** Change the surface used for layout. The icon shows the current active surface.

Example



Aiming to the surface is required if the position cannot be found automatically.

Tap **Invert** to change the order of vertices during the layout.

10.6 Layout with a Target

Description

- Layout points, lines or 3D objects with dedicated layout targets and poles, for example vPole.
- Follow the guidance on the screen to find the real position of points and objects from the drawing.
- Layout points precisely behind small obstacles.
- Layout points precisely at long distance.
- It is possible to enter an offset from the object.
- Chose a preferred navigation method: **Facing instrument** or **Facing point**.
- Layout in 3D (position and height), or 2D (position only).

Refer to:

- Layout Facing the Instrument
- Layout Facing the Point
- How to Layout a Point with a Target
- How to Layout other Elements with a Target

☞ An instrument connection is required.

☞ A layout licence is required.

10.6.1 How to Layout a Point with a Target

Description

- Find the real position of a single point from the drawing using a target and a pole, for example vPole.
- Follow the guidance on the screen to reach the position of the destination point.

1.	Select a target, for example **vSphere**, from the Targets Menu.
2.	Lock on the target.
3.	Select a point.
4.	Define LAYOUT OPTIONS.
5.	Tap **Layout**.
6.	Follow the guidance on the top of the screen to reach the point position. Refer to Layout Facing the Instrument and Layout Facing the Point.
7.	Tap **Store** to save the layout quality information.

☞ Target lock is required. Make sure that the instrument follows the target.

☞ It is possible to change the destination point during the navigation.

10.6.2 How to Layout other Elements with a Target

Description

- Find the real position of lines, polylines, circles and other objects from the drawing using a target and a pole, for example vPole.
- Follow the guidance on the screen to reach the position of the destination point.
- Layout vertices of the object or any point along the object.

1.	Select a target, for example **vSphere**, from the Targets Menu.
2.	Lock on the target.
3.	Select a line, polyline, arc, circle or any other object.
4.	Select a starting vertex or segment to layout. This is not required for circles and arcs.
5.	Define LAYOUT OPTIONS.
6.	Tap **Layout**.
7.	Follow the guidance on the top of the screen to reach the point position. Refer to Layout Facing the Instrument and Layout Facing the Point.

8. Taps **Store** to save the layout quality information.

☞ Target lock is required. Make sure that the instrument follows the target.

☞ It is possible to change the destination point during the navigation.

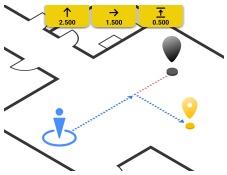
☞ Tap **Invert** to change the order of vertices during the layout.

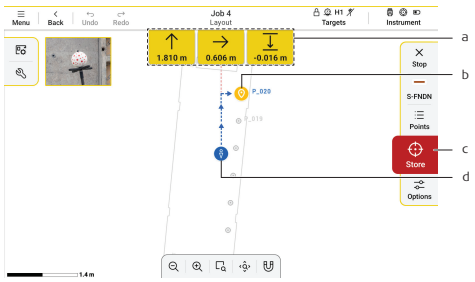
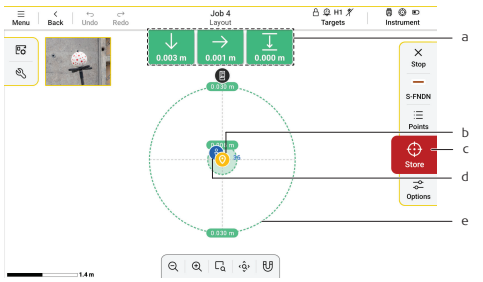
☞ Tap **Offset** to define distance along or away from the object. Refer to Layout with an Offset.

10.6.3 Layout Facing the Instrument

Description

- Use the instrument as the guidance orientation during layout.
- Move towards or away from the instrument and left or right when looking to the instrument.
- The drawing view continuously aligns with the navigation arrows and the direction towards the instrument.
- Precise navigation bullseye view is activated when approaching the point (0.5 m / 19.7 in).



Rough navigation	Precise navigation
	

a) Navigation bar
   - **Forward** or **Backward**
     Move towards or away from the instrument.
   - **Left** or **Right**
     Move left or right while facing the instrument.
   - **Up** or **Down**
     Move higher or lower to adjust the height position.

b) Destination point
   Point the navigation guides to.

c) **Store**
   Confirm the current position and store the layout quality.

d) User's position

e) Precise navigation bullseye
   Graphical representation of the distance from the destination point. As soon as the bullseye changes the colour to green, the layout tolerance is achieved.

1.	Lock on a target.
2.	Select an element from drawing. Refer to How to Layout a Point with a Target and How to Layout other Elements with a Target.
3.	Tap **Layout**.
4.	Turn with the tablet towards the instrument.
5.	Follow the navigation on the Navigation Bar until the precise navigation bullseye and values changes to green.
6.	Tap **Store** to save the layout quality information.

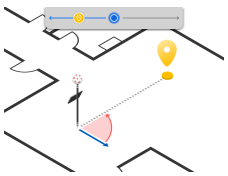
☞ Always look to the instrument, to correctly follow the guidance.

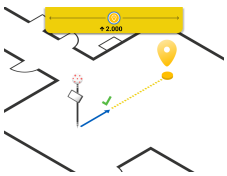
☞ This layout method can be used with vPole and prism.

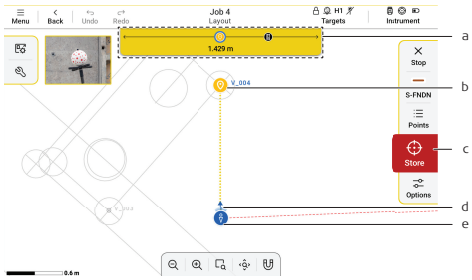
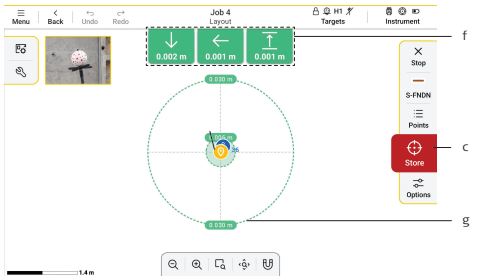
10.6.4 Layout Facing the Point

Description

- Turn to align the arrow with the direction to the destination point, then walk straight.
- It is not required to look to the instrument.
- The drawing view continuously aligns with the direction towards the point.
- Precise navigation bullseye view is activated when approaching the point (0.5 m / 19.7 in).
- The last known user's direction is used as a reference during the precise navigation. It is not required to look to the instrument.





Rough navigation	Precise navigation
	

Rough navigation	Precise navigation

a) Navigation Compass
Represents the current rotation. The destination point displayed in the centre of the compass indicates the correct rotation.
The compass changes to yellow when the correct rotation is achieved.

b) Destination point
Point the navigation guides to.

c) **Store**
Confirm the current position and store the layout quality.

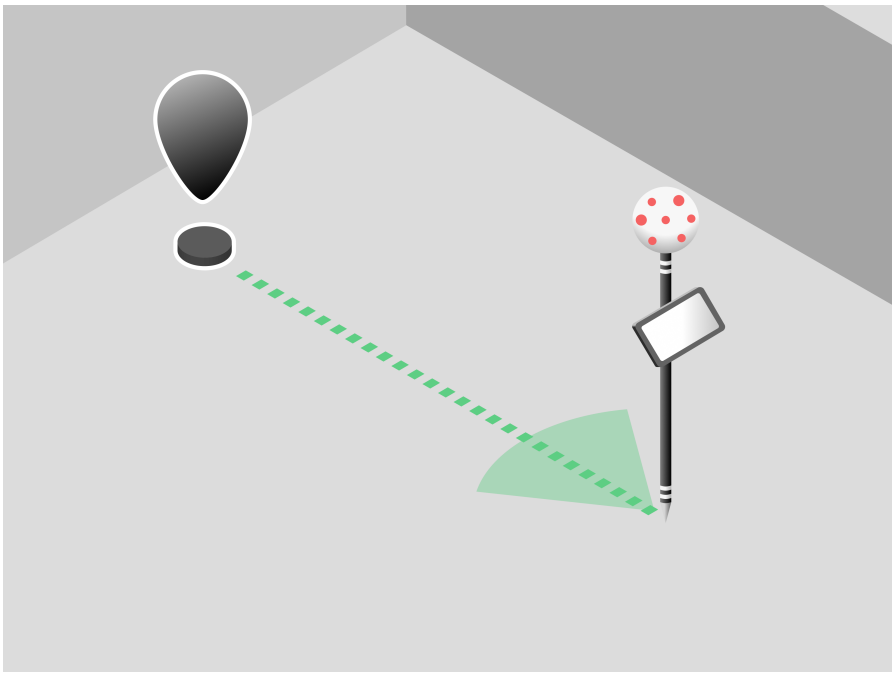
d) User's direction
Rough representation of the current user's direction.

e) User's position

f) Precise navigation bar
- Move forward or backward without rotating
- Move left or right without rotating
- Move higher or lower to adjust the height position

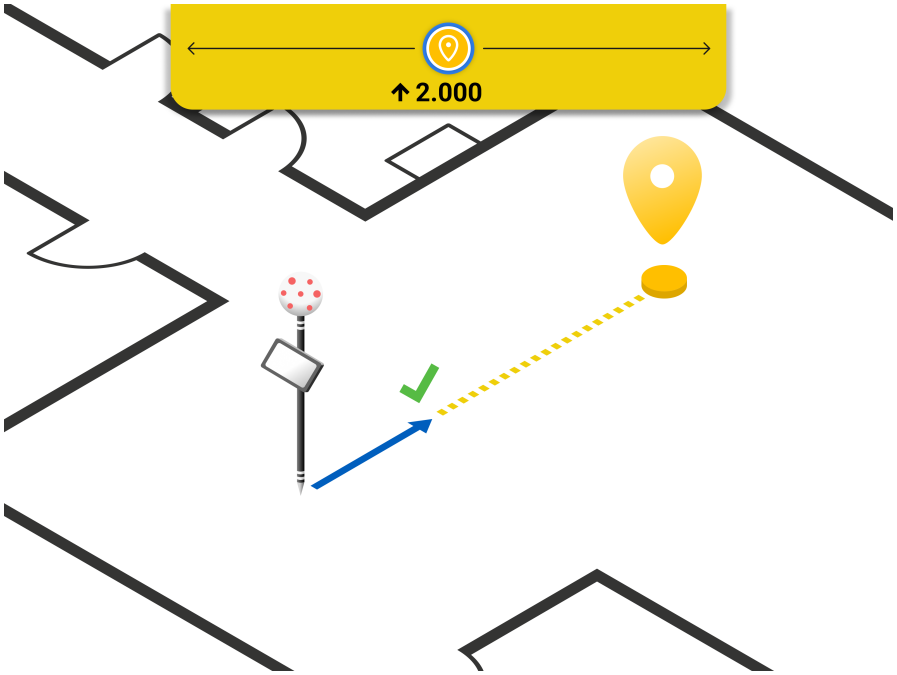
g) Precise navigation bullseye
Graphical representation of the distance from the destination point.
As soon as the bullseye changes the colour to green, the layout tolerance is achieved.

1. Lock on a target.
2. Select an element from drawing. Refer to How to Layout a Point with a Target and How to Layout other Elements with a Target.
3. Tap **Layout**.
4. Turn with the tablet towards the instrument.
It is recommended to stand as far from the instrument as possible during that step.



5. Confirm the reference rotation.

6. Rotate with the tablet until the arrow aligns with the direction to the point and navigation compass changes colour to yellow.



7. Walk straight to the point for the distance displayed below the compass.
8. When the precise navigation bullseye appears, do not rotate anymore. Move the pole forward, backward, left, right, up or down until the bullseye and navigation bar changes to green.
9. Tap **Store** to save the layout quality information.

☞ For the best accuracy, the reference direction must be defined each time when entering the layout navigation mode.

☞ This layout method works only with vPole.

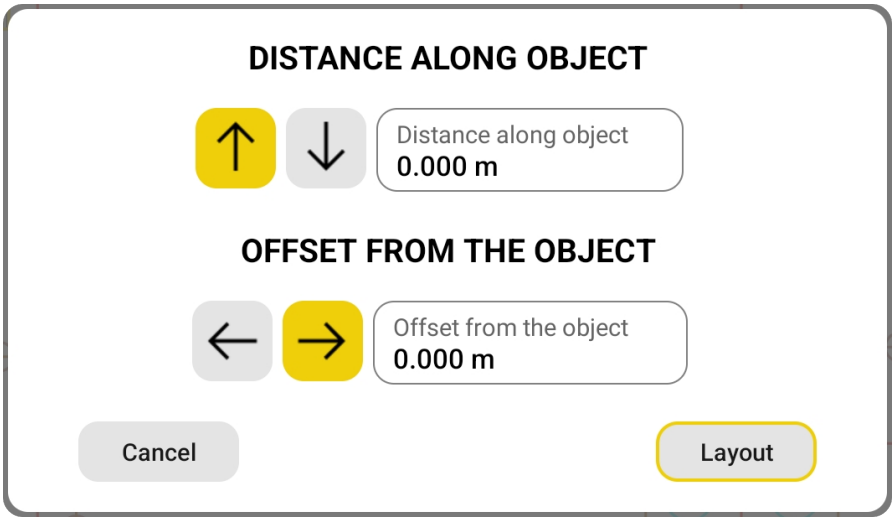
10.7 Layout with an Offset

Description

- Layout a point along a line, a polyline segment, a circle or an arc based on the distance from the start point.
- Layout a point in a specific, perpendicular distance from the object.

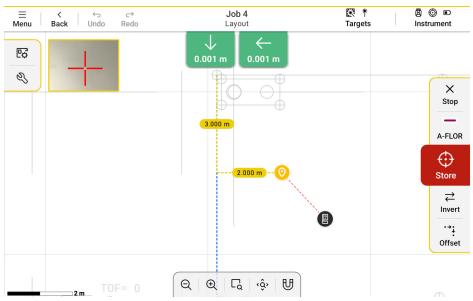
1. Select an object.
2. Only for polyline:
   Select a segment.
3. Tap **Layout**.

4. Tap **Offset** and specify distance along and from the object.



5. Confirm.

Example



Additional options

Icon	
⇄	**Invert** Change the start point used for offset calculation.

Setup is required.

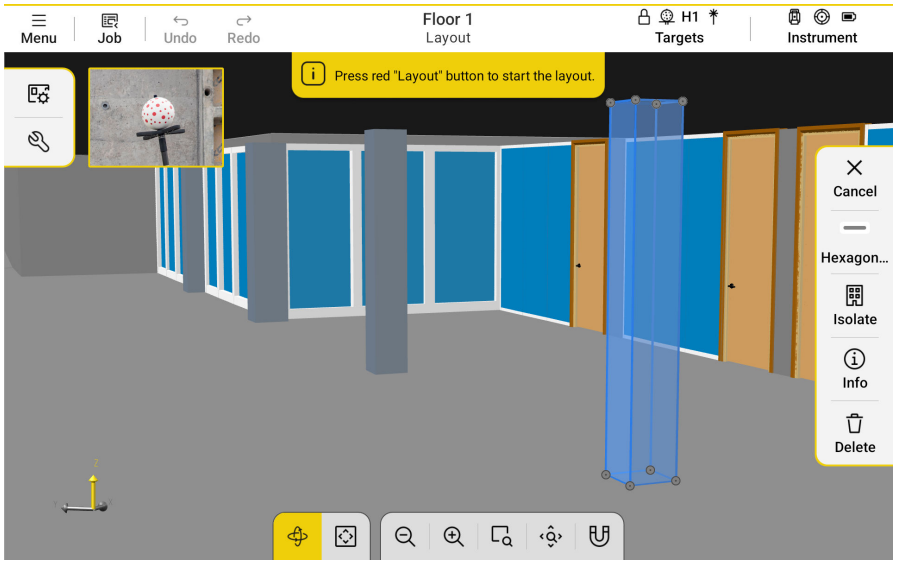
10.8 Layout Using an IFC Model

Description

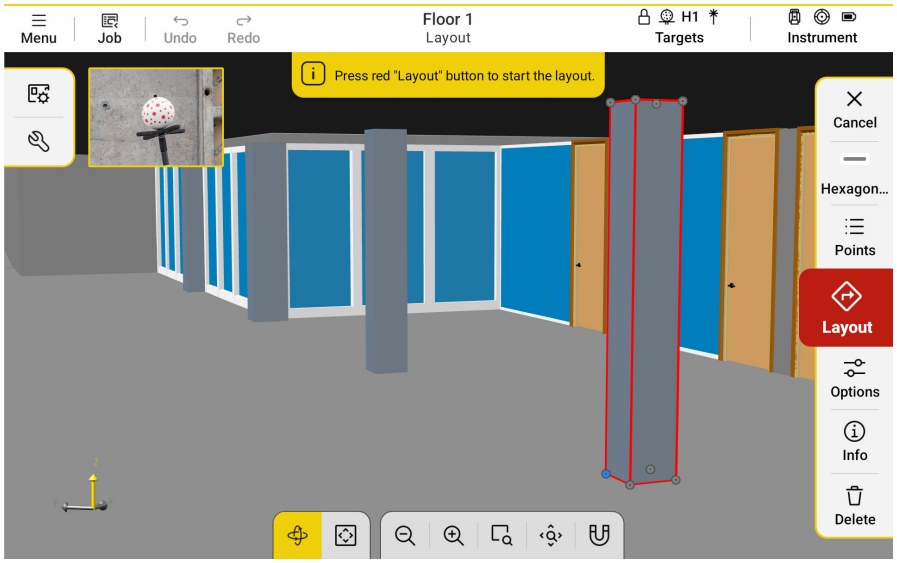
- Find the real position of 3D objects from an IFC model.
- Layout edges or main points of 3D objects.

1. Import an IFC model.
2. Setup the instrument within the IFC model. Refer to Instrument Setup.

3. Select an object from the model.



4. Select an edge or one of the main points of the object.



5. Define LAYOUT OPTIONS.

6. Tap **Layout**.

7. Follow the guidance on the top of the screen to reach the point position.

8. Tap **Store** to save the layout quality information.

☞ Apply BIM filters for easier selection.

☞ Add BIM objects to the **TO-DO LIST** to extract all main POINTS.

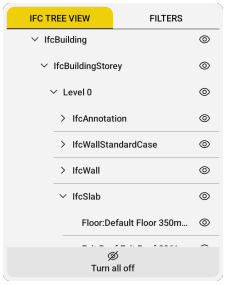
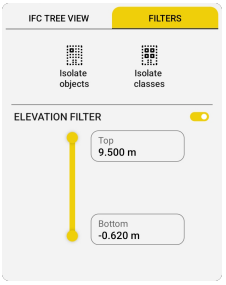
☞ A BIM Objects licence is required.

☞ A Layout licence is required.

10.9 BIM

Description

- Toggle the visibility of IFC objects.
- Isolate IFC objects or classes.
- Apply vertical a limit box.

IFC TREE VIEW tab	FILTERS tab
	

Refer to:

- Isolate Objects
- Isolate Classes
- Elevation Filter

How to access

1. Import an IFC model.
2. Open the Layout mode.
3. Tap on .

☞ Only available in **Layout** mode.

☞ Available only with an active BIM licence.

☞ Available only when an IFC file was imported.

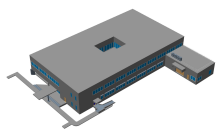
10.9.1 Isolate Objects

Description

- Isolate one or multiple IFC objects on the screen.
- Hide all other objects.

1. Tap **Isolate objects** to start the function.
2. Select one or multiple 3D objects from the drawing.
3. Accept the selection.
4. Open the menu and tap **Isolate objects** again to reset the filter.

Example

Before	After
	

Additional options

Icon	
	Clear Clear the selection

☞ Available only in the Layout mode.

☞ Available only with an active BIM licence.

☞ Available only when an IFC file was imported.

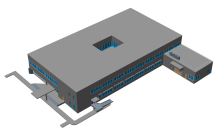
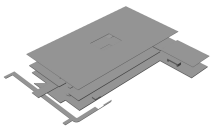
10.9.2 Isolate Classes

Description

- Isolate all objects from one or multiple classes
- Hide all other objects.

1. Tap **Isolate objects** to start the function.
2. Select a 3D object from the drawing which will define the class to be hidden.
3. Accept the selection.
4. Open the menu and tap **Isolate objects** again to reset the filter.

Example

Before	After
	

Additional options

Icon	
	Clear Clear the selection

☞ Available only in the Layout mode.

☞ Available only with an active BIM licence.

☞ Available only when an IFC file was imported.

☞ Multiple objects from different classes can be selected. This will result in isolation of all selected classes.

10.9.3 Elevation Filter

Description

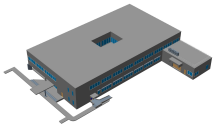
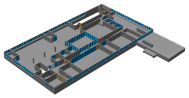
- Limit the visibility of the IFC model by applying a vertical limit box
- Objects above and below defined values will be hidden

1. Tap on the toggle button to switch the elevation filter on.

2. Enter the height of the top and bottom edges of the limit box.
   Or use the slider to dynamically see the results on the drawing.

3. Tap on the toggle button again to switch the elevation filter off.

Example

Before	After
	

☞ Available only in the Layout mode.

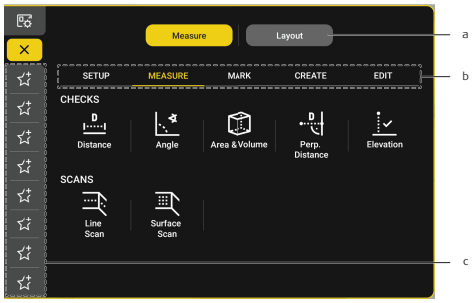
☞ Available only with an active BIM licence.

☞ Available only when an IFC file was imported.

11 Tools

Description

- Additional functions to complete the workflow.
- The availability depends on the active software licences.



a) Mode switch
b) Tool groups
c) Favourite tools
   - Tap on a placeholder and on a tool to set as favourite.
   - Long tap on a favourite to change or remove.

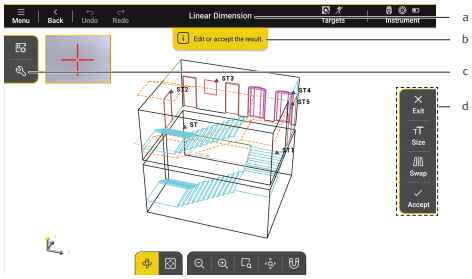
Refer to:

- Using Principles
- Favourites
- Setup Tools
- Measure Tools
- Mark Tools
- Create Tools
- Edit Tools

☞ Mode switch is only available when actived in the software licences.

☞ To close the tool, tap **Exit** on the Action Bar or select another tool from the menu.

11.1 Using Principles



a) Name of the active tool
b) Guidance or results message
c) **Tools** menu
   Open to activate another tool. All results are stored.
d) Action bar
   Relevant actions for the current step

1. Activate a tool from the **Tools** menu or Favourites.

2. Follow the guidance messages.
3. Use the action bar to apply changes.
4. Accept the results. Required only if the tool generates multiple results or if the result can be modified.
5. Exit the tool or activate another one.

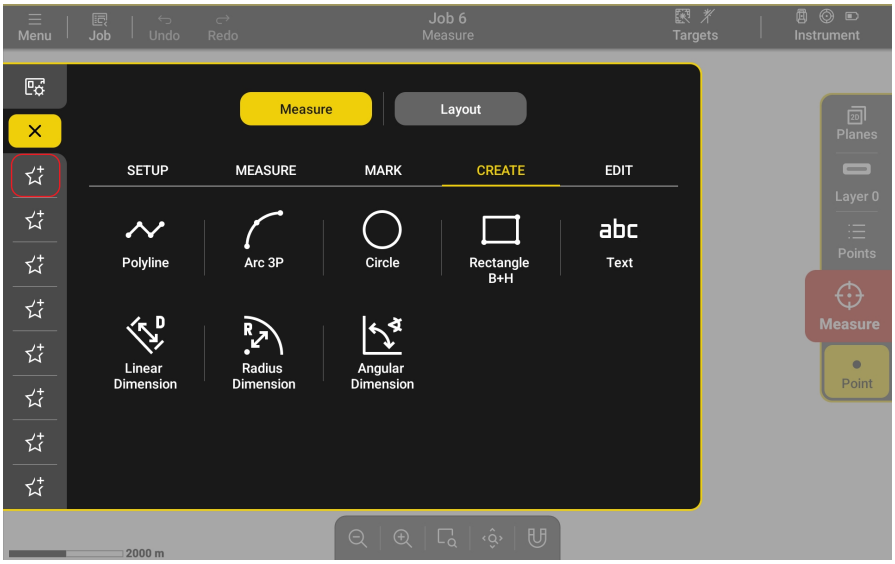
11.2 Favourites

Description

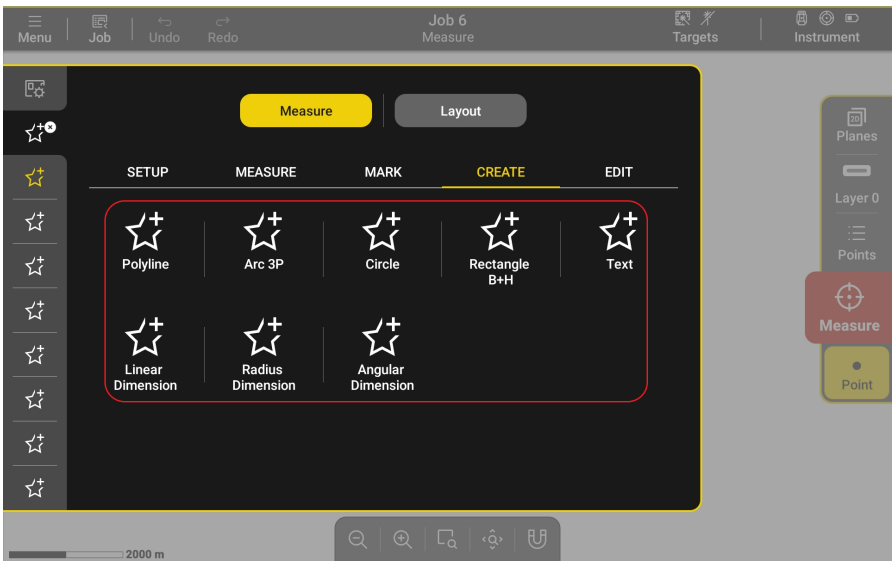
- Customizable set of tools which are always visible on the screen, even with the **Tools** menu closed.
- Add or remove any tool from the **Tools** menu.

Adding favourites

1. Open the **Tools** menu. Refer to Measure or Layout.
2. Tap on an empty placeholder on the left side of the screen.

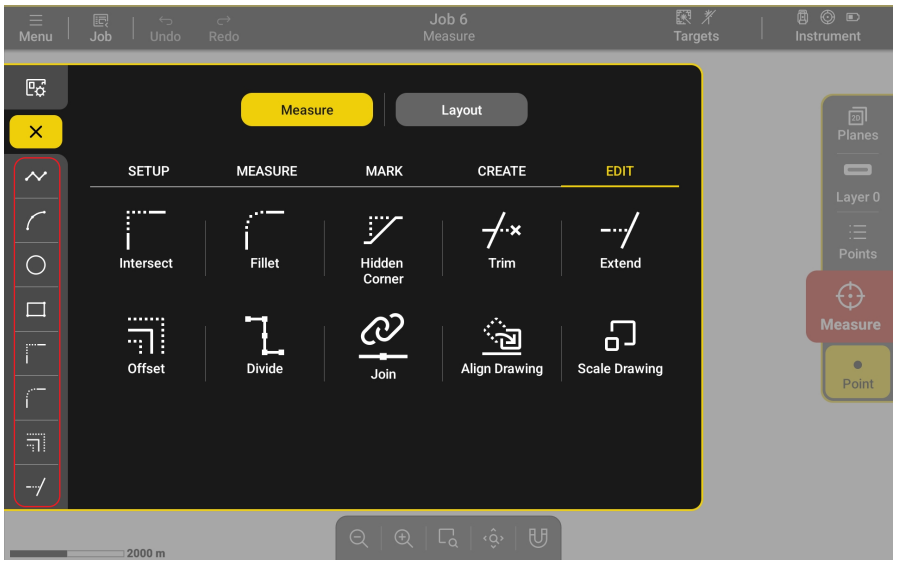


3. Tap on a tool icon to set it as a favourite.

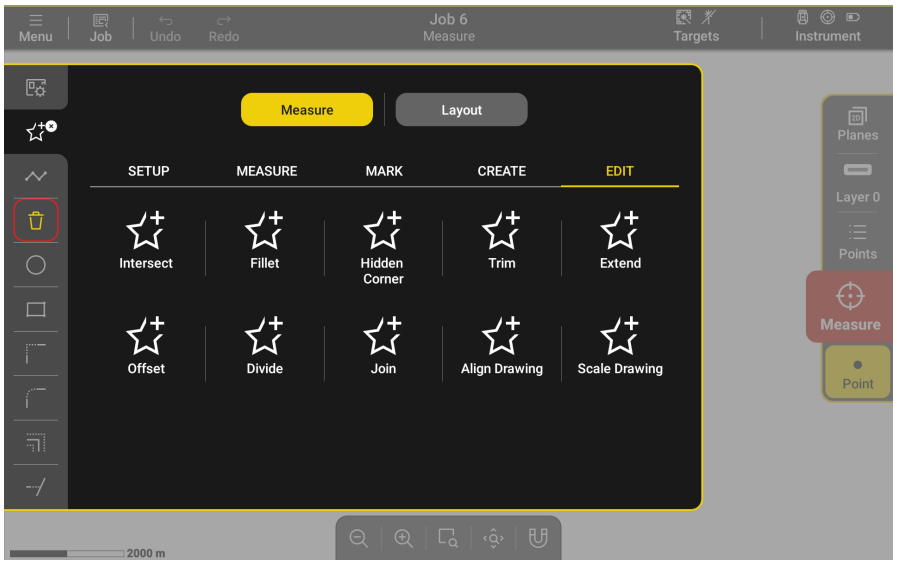


Removing or changing favourites

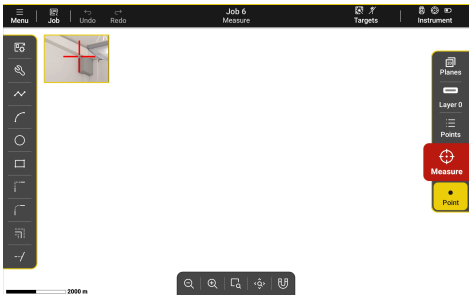
1. Open the **Tools** menu. Refer to Measure or Layout.
2. Long tap on the tool to be removed or changed.



3. Tap the **Remove** icon to remove the tool from the placeholder or select another tool to set it as a favourite right away.



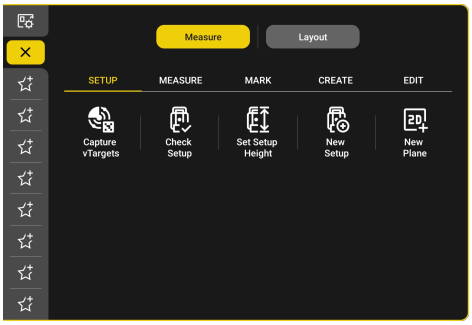
Example



11.3 Setup Tools

Description

- Calculate the position of the instrument.
- Check the correctness of the current instrument position.
- An instrument connection is required.



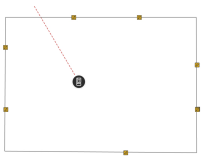
Icon	
	Capture vTargets
	Check Setup
	Set Setup Height
	Instrument Setup
	New plane

11.3.1 Capture vTargets

Description

- Automatically detect and measure all vTargets between 2 m and 25 m.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	Repeat Search again.

☞ Place vTargets at a similar height as the instrument.

☞ To increase the detection rate and accuracy, the targets should be tilted less than 45° from the instrument.

☞ Measured vTargets are saved as **Control Point**.

☞ Only available for iCS instruments.

11.3.2 Check Setup

Description

- Check the levelling status of the instrument.
- Measure a known point to check if the instrument position remains unchanged.
- Follow the steps indicated in the software.

☞ The process is fully automated if the job contains at least one vTarget. Only available for iCS instruments.

11.3.3 Set Setup Height

Description

- Calculate the setup height with a reference measurement.
- Transform 2D setup into 3D setup.
- Follow the steps indicated in the software.

☞ **Setup height** is required to enable height check during layout process.

11.3.4 New plane

Description

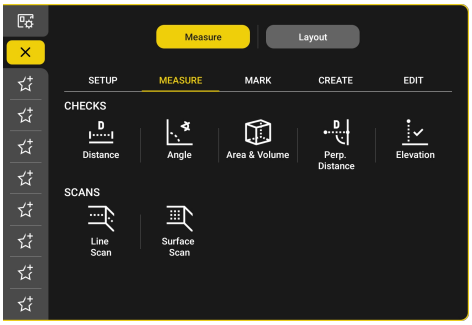
- Define new:
  - **Horizontal plane** using one point
  - **Vertical plane** using two points
- Follow the steps indicated in the software.

☞ Refer to How to Measure 2D for more details.

11.4 Measure Tools

Description

- Check dimensions and angles.
- Automate the measuring workflow.



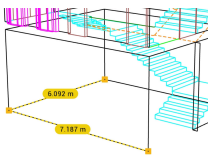
Icon	
	Distance
	Angle
	Area & Volume
	Perp. Distance
	Elevation
	Line Scan
	Surface Scan

11.4.1 Distance

Description

- Measure:
  - **Polygon**: Total length of a polygon built on multiple points
  - **Radial**: Distances from one point to multiple other points
- Check horizontal distance, slope distance, slope, and height difference.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	Find ID Search a point by its ID.
	Radial Change to radial distance.
	Polygon Change to polygonal distance.
	Restart Restart the measurements.

All snapping options are automatically set to ON.

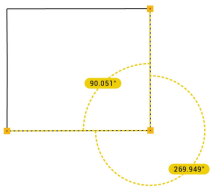
Results are not stored.

11.4.2 Angle

Description

- Measure internal and external angles between two lines or three points.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	Find ID Search a point by its ID.
	Restart Restart the measurements.

All snapping options are automatically set to ON.

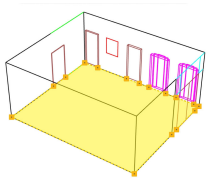
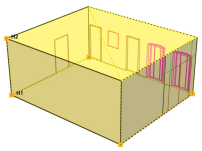
Results are not stored.

11.4.3 Area & Volume

Description

- Measure:
  - 2D and 3D area of any shape
  - Box volume with measured or manually defined height
- Follow the steps indicated in the software.

Example

Area	Volume
	

Additional options

Icon	
	Find ID Search a point by its ID.
	Restart Restart the measurements.
	Height, only for **Volume** Change the height.
	Report Export a PDF report.

All snapping options are automatically set to ON.

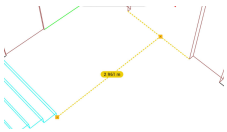
Results are not stored.

11.4.4 Perp. Distance

Description

- Measure a perpendicular distance between a point and a line.
- Check horizontal and slope distances.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	Find ID Search a point by its ID.
	Restart Restart the measurements.

All snapping options are automatically set to ON.

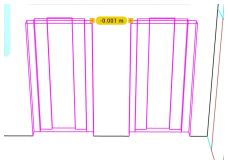
Results are not stored.

11.4.5 Elevation

Description

- Measure a height difference between a reference point and multiple other points.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	Find ID Search a point by its ID.
	Restart Restart the measurements.

All snapping options are automatically set to ON.

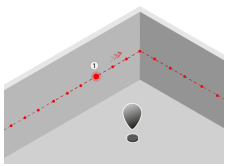
Results are not stored.

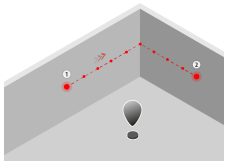
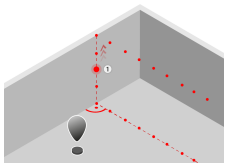
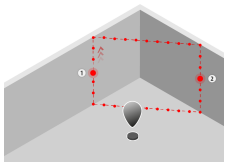
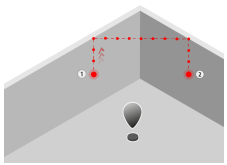
11.4.6 Line Scan

Description

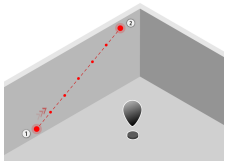
- Autonomously measure lines with a specific interval.
- Corners are automatically detected and measured.

Scan types

Icon		
	Horizontal 360° • Measure a full 360° scan with all points at the same height. • The first point defines the height of the scan. • The instrument moves in clockwise direction. • Follow the steps indicated in the software.	

Icon		
	Horizontal Point to Point • Measure a scan between two points, with all points at the same height. • The first point defines the height of the scan. • The instrument moves in clockwise direction. • Follow the steps indicated in the software.	
	Vertical Perpendicular 360° • Measure a full 360° scan with all points on the same vertical line. • The scan line is always perpendicular to the wall. • The instrument always moves up. • Follow the steps indicated in the software.	
	Vertical Free 360° • Measure a full 360° scan with all points on the same vertical line. • Two points are required to define the direction of the scan line. • The instrument always moves up. • Follow the steps indicated in the software.	
	Vertical Point to Point • Measure a scan between two points with all points on the same vertical line. • Two points are required to define the direction of the scan line. • The instrument always moves up. • Follow the steps indicated in the software.	

Icon	
	Sloped • Measure a direct scan between two points on a wall. • The instrument moves in clockwise direction. • Follow the steps indicated in the software.



Additional options

Icon	
	Interval Change the spacing between measurements.
	Offset, only for horizontal scans Move the scan higher or lower. For example to measure at the exact height of the countertop, measured from the floor.
	Skip Skip a measurement.
	Pause Stop a scan temporarily.
	Start Resume the scan.

Results are stored on the active layer.

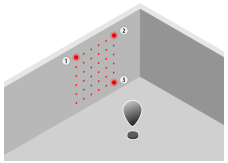
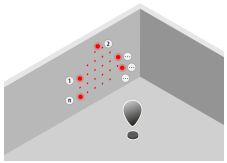
Measured points have a predefined ID.

11.4.7 Surface Scan

Description

- Autonomously measure a grid of points with a specific interval.
- Define the shape of the grid:
  - **Rectangular**: With three boundary points
  - **Polygon**: With an unlimited number of boundary points
- Follow the steps indicated in the software.

Example

Rectangular	Polygon
	

Additional options

Icon	
	Interval Change the spacing between measurements.

Icon	
	Skip Skip a measurement.
	Pause Stop a scan temporarily.
	Start Resume the scan.

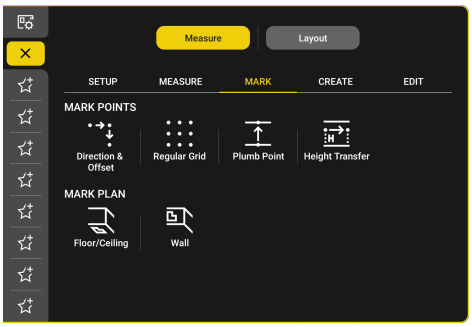
Results are stored on the active layer.

Measured points have a predefined ID.

11.5 Mark Tools

Description

- Use the laser of the instrument to mark points on a wall, floor, or ceiling.



Icon	
	Direction & Offset
	Height Transfer
	Plumb Point
	Regular Grid
	Floor/Ceiling
	Wall

Results are not stored.

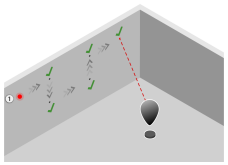
An instrument connection is required.

11.5.1 Direction & Offset

Description

- Mark points using orthogonal movements of the instrument: Up, down, left and right.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	Restart Define a start point again.

Use arrows on the bottom of the screen to move the instrument.

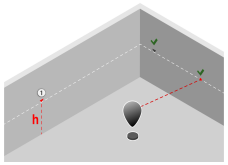
Use the direction arrows on the remote control to move the instrument.

11.5.2 Height Transfer

Description

- Mark a reference height on another wall.
- Follow the steps indicated in the software.

Example



Additional options

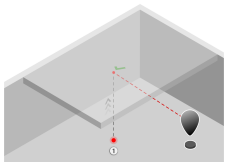
Icon	
	Offset Mark points above or below the reference height.
	Restart Define the reference height again.

11.5.3 Plumb Point

Description

- Transfer a reference point up or down.
- Follow the steps indicated in the software.

Example



Additional options

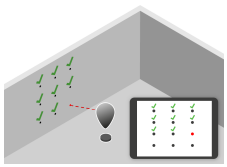
Icon	
	Restart Define a reference point again.

11.5.4 Regular Grid

Description

- Mark points with a regular horizontal or vertical spacing on a wall, floor, or ceiling.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	Move Change the position of the grid.
	Spacing Change the grid spacing.

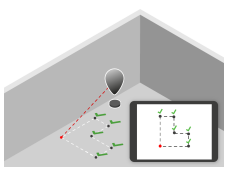
Use the direction arrows on the remote control to move to another point.

11.5.5 Floor/Ceiling

Description

- Mark points from the drawing on a floor or ceiling.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	Move Change the position of the drawing.

A job with an imported drawing is required.

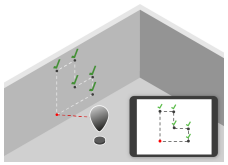
Use the direction arrows on the remote control to move to another point.

11.5.6 Wall

Description

- Mark points from the drawing on a wall.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	Move Change the position of the drawing.

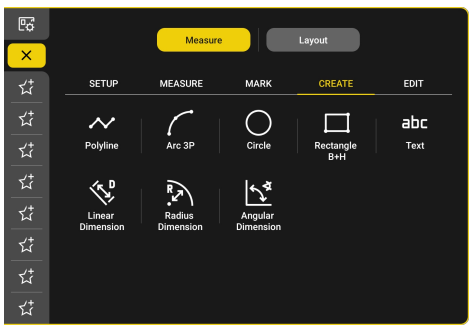
A job with an imported drawing is required.

Use the direction arrows on the remote control to move to another point.

11.6 Create Tools

Description

- Create new elements on the drawing.
- An instrument connection is not required.



Icon	
	Polyline

Icon	
	Arc 3P
	Circle
	Rectangle base & height
abc	Text
	Linear Dimension
	Radius Dimension
	Angular Dimension

11.6.1 Polyline

Description

- Create lines with multiple segments.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	New End the current polyline and start a new polyline.

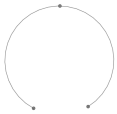
The new object is created on the active layer.

11.6.2 Arc 3P

Description

- Create arcs with three points.
- Follow the steps indicated in the software.

Example



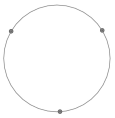
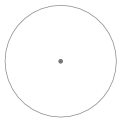
☞ The new object is created on the active layer.

11.6.3 ○ Circle

Description

- Create circles with:
  - Centre and radius
  - Three points on the circumference
- Follow the steps indicated in the software.

Example

Circle 3P	Circle 1P
	

Additional options

Icon	
	Circle 3P Change to **Circle 3P**.
	Circle 1P Change to **Circle 1P**.
	Radius, only for **Circle 1P** Change the radius.

11.6.4 □ Rectangle base & height

Description

- Create rectangles by defining the base and height.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	Height: Enter a height.

☞ The new object is created on the active layer.

11.6.5 abc Text

Description

- Create single-line texts.
- Long press on a text to move it on the drawing.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	Edit Change text.
	Size Change the text size.
	Rotate • Rotate using arrows on the bottom of the screen. • Long tap to move the text on the drawing. • Align to an existing object.

Snap to an existing object to align the text rotation.

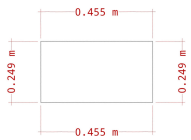
Text is created on the **Text** layer.

11.6.6 Linear Dimension

Description

- Create linear dimensions of:
  - Entire objects. Use one tap.
  - Single segments. Use double tap.
- Follow the steps indicated in the software.

Example



Additional options

Icon	
	Size Change text size.
	Swap Change position to other side of the segment.

All dimensions are created on the **Dimensions** layer.

11.6.7 Radius Dimension

Description

- Create radial dimensions of circles and arcs.
- Follow the steps indicated in the software.

Example

Circle radius dimension	Arc radius dimension
	

Additional options

Icon	
	Size Change the text size.
	Swap Change the position to the other side of the object.

All dimensions are created on the **Dimensions** layer.

11.6.8 Angular Dimension

Description

- Create angular dimensions between:
  - Two nonparallel lines
  - Centre and two points
- Follow the steps indicated in the software.

Example

Inner angle	Outer angle
	

Additional options

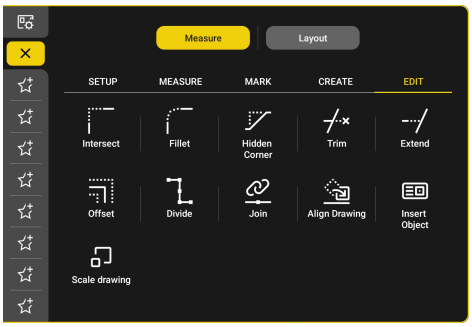
Icon	
	Size Change the text size.
	Swap Switch between inner and outer angle.

All dimensions are created on the **Dimensions** layer.

11.7 Edit Tools

Description

- Edit existing elements from the drawing.
- An instrument connection is not required.



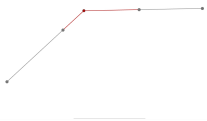
Icon	
	Intersect
	Hidden Corner
	Offset
	Fillet
	Divide
	Join
	Trim
	Extend
	Align Drawing, only with Templating licence
	Insert Object, only with Templating licence
	Scale Drawing

11.7.1 Intersect

Description

- Create a sharp intersection of two lines.
- Follow the steps indicated in the software.

Example

Before	After
	

☞ It is not possible to intersect internal polyline segments with other objects.

11.7.2 Hidden Corner

Description

- Change a diagonal segment into a 90° corner.
- Both possible solutions are calculated and displayed for selection.
- Follow the steps indicated in the software.

Example

Before	After
	

11.7.3 Offset

Description

- Create a copy of an object at a specified distance.
- Enter the distance manually or use a guide point.
- Follow the steps indicated in the software.

Example

Before	After
	

Additional options

Icon	
	Options Change the **Offset Mode**

☞ The copied object is stored on the same layer.

11.7.4 Fillet

Description

- Create a rounded intersection of two lines.
- Follow the steps indicated in the software.

Example

Before	After
	

Additional options

Icon	
	Radius Change the radius.

It is not possible to intersect internal polyline segments with other objects.

Use two separate lines or two segments of a polyline. The tool will automatically intersect and round the corner.

11.7.5 Divide

Description

- Divide an object
  - By number of segments
  - By length of segments
- Follow the steps indicated in the software.

Example

Before	After

Additional options

Icon	
	Options Change the **OPTIONS**.
	Invert, only for **Length** Change the order of divided parts.

11.7.6 Join

Description

- Merge multiple objects into a single object.
- Follow the steps indicated in the software.

Example

Before	After

Additional options

Icon	
	Add area Add all objects in the defined area.
	Add all Automatically detect and add all possible objects.

The first selected object defines the primary layer.

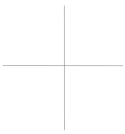
Only objects with common endpoints can be joined.

11.7.7 Trim

Description

- Cut an object to meet the edge of another object.
- Follow the steps indicated in the software.

Example

Before	After
	

11.7.8 Extend

Description

- Extend an object to the closest edge of another object.
- Follow the steps indicated in the software.

Example

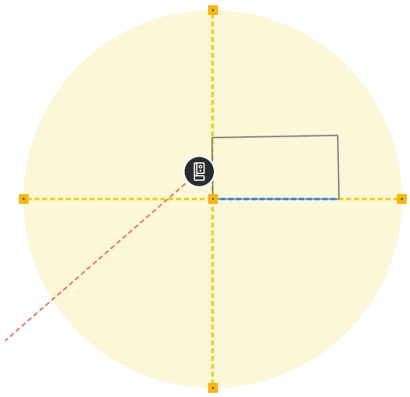
Before	After
	

11.7.9 Align Drawing

Description

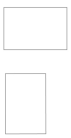
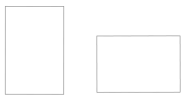
- Align the whole 2D or 3D drawing to the reference direction.
- Follow the steps indicated in the software.

1. Select a line to be aligned.
   The drawing automatically rotates to align the selected line to direction of 0°, 90°, 180° or 270°.
2. Tap on another yellow direction line, to further rotate the drawing if needed.



3. Accept the results.

Example

Before	After
	

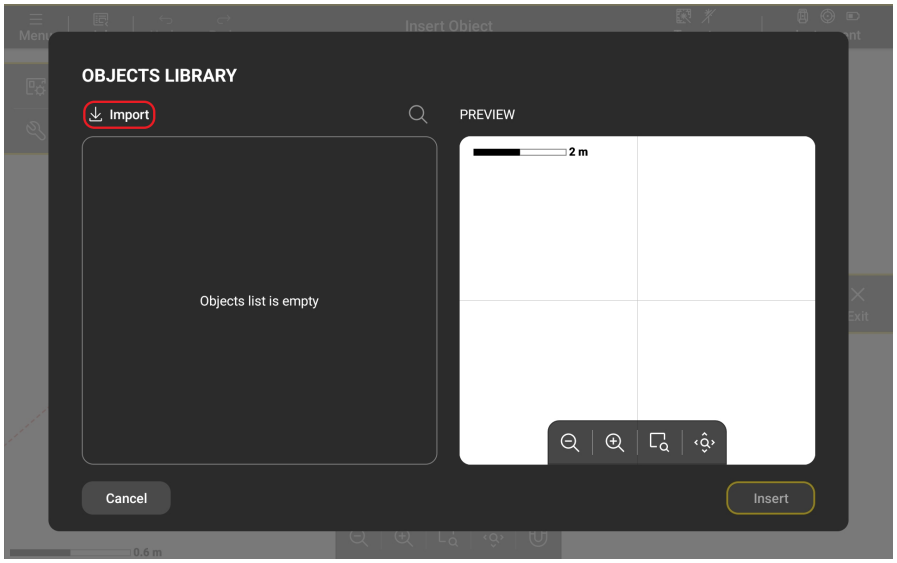
11.7.10 Insert Object

Description

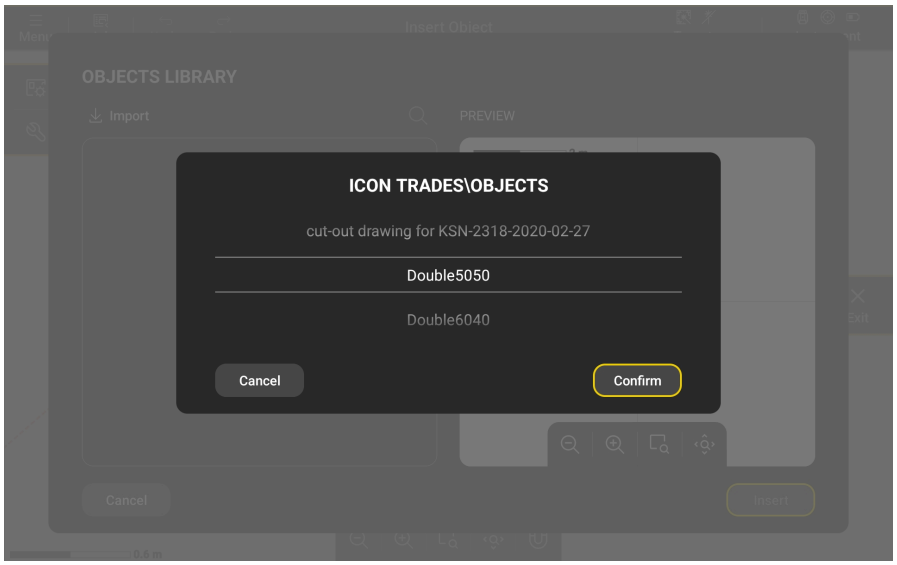
- Insert an object (DXF/DWG) from **iCON trades/Objects** to the drawing.
- Create a customized **OBJECTS LIBRARY**

Creating an OBJECTS LIBRARY

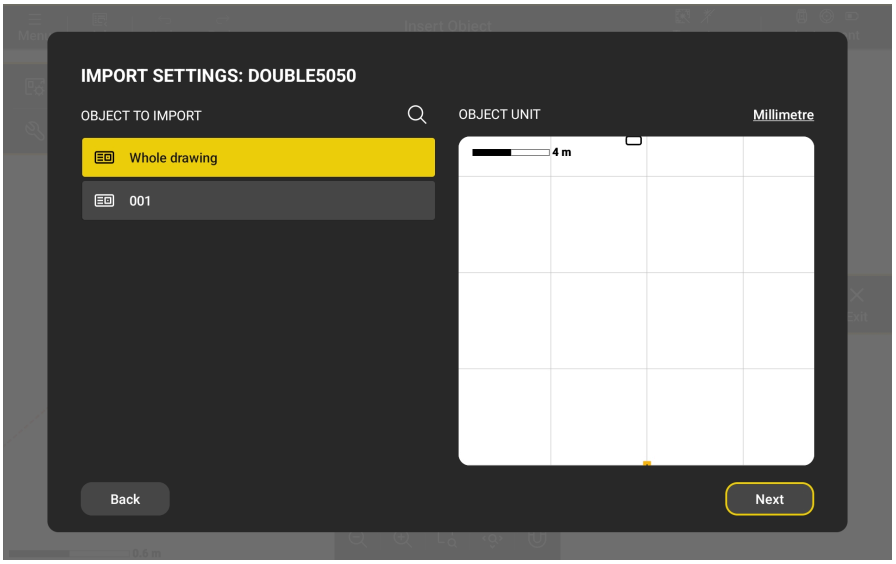
1. Paste DXF or DWG files with objects into the Internal Storage/iCON trades/Objects folder.
2. Start the **Insert Object** tool.
3. Tap **Import** on the library screen.



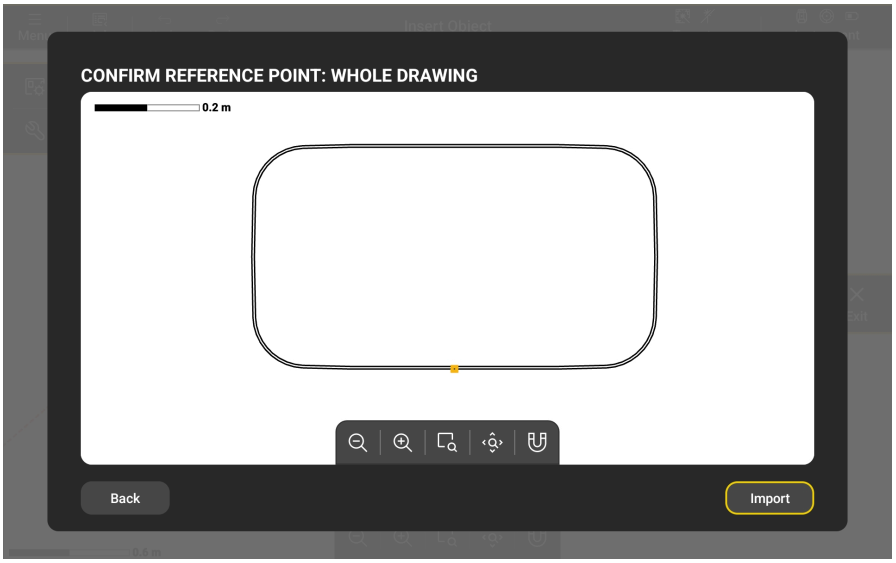
4. Select the desired object file.



5. Choose between importing the whole drawing or each block separately and define import settings, for example drawing units.



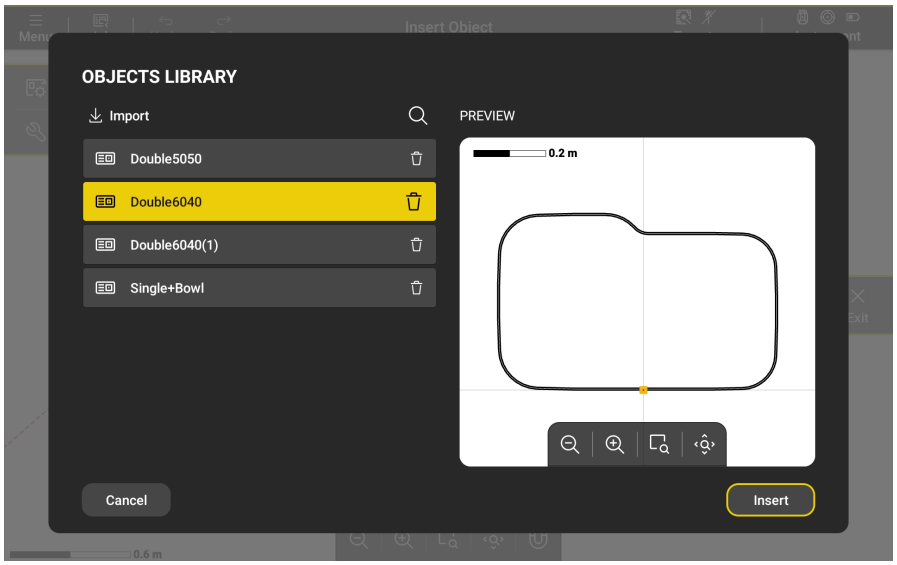
6. Define the reference point, which will be later used for placement of the object. Use snapping options to select the desired point.



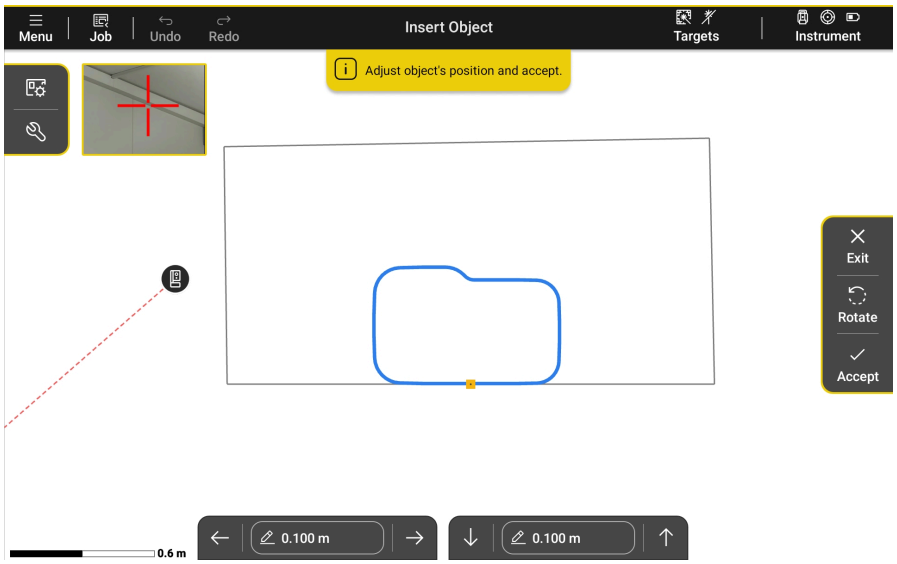
7. Confirm.

Inserting an object

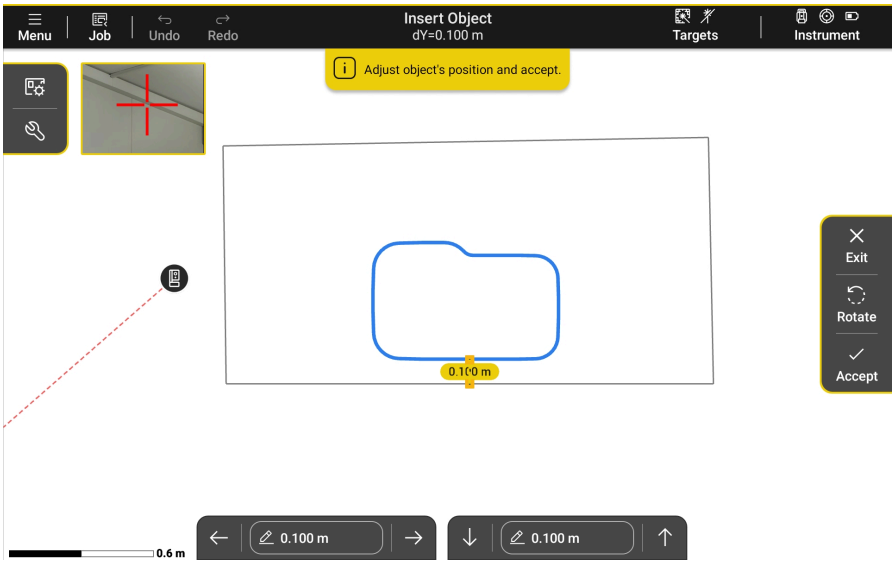
1. Select an object from the library and tap **Insert**.



2. Select the insertion point on the drawing. Use snapping options to select the desired point. The rotation of the object will be automatically aligned to the selected line.



3. Move or rotate the object if necessary.



4. Review and accept the results.

Example

Before	After
	

Additional options

Icon	
	Move Define the offset from a reference line.
	Rotate • Rotate the object using arrows on the bottom of the screen. • Align to an existing object.

The tool is only available for the Templating licence.

The object is placed on the active layer.

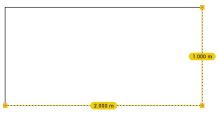
Snap to an existing object to align the object orientation. This is optional.

11.7.11 Scale Drawing

Description

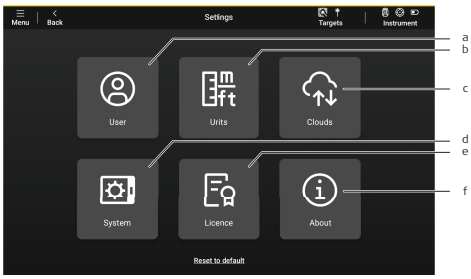
- Scale the whole 2D or 3D drawing using reference length.
- Measure or enter the real length of reference line from the drawing.
- Follow the steps indicated in the software.

Example

Before	After
	

☞ It is required to scale an imported PDF drawing.

12 Settings



a) User
b) Units
c) Clouds
d) System
e) Licence
f) About

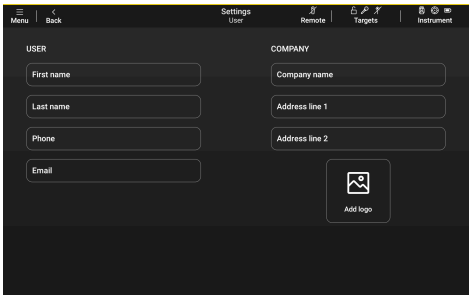
How to access

1. Open the Menu.
2. Tap **Settings**.

12.1 User

Description

- Define **USER** and **COMPANY** details to print in the PDF exports.



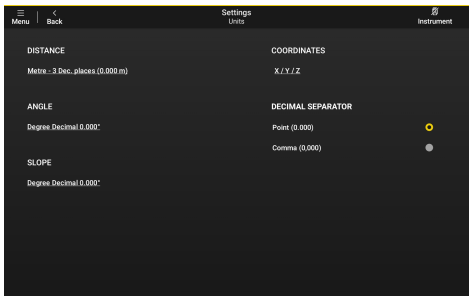
How to access

1. Open the Menu.
2. Tap **Settings**.
3. Tap **User**.

12.2 Units

Description

- Define **Units** for the software and exports.



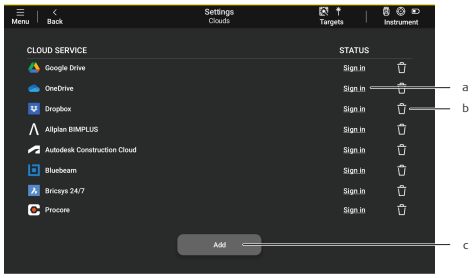
How to access

1. Open the Menu.
2. Tap **Settings**.
3. Tap **Units**.

12.3 Clouds

Description

- Add and remove cloud services for data exchange.
- Added clouds are available during import and export.
- Sign in and out from your account.



a) **Sign in** and **Sign out**
Use your credentials to sign into the cloud service.

b) **Remove**
Remove the cloud service from the **Import** and **Export** screens.

c) **Add**
Add a cloud service to the **Import** and **Export** screens.

How to access

1. Open the Menu.
2. Tap **Settings**.
3. Tap **Clouds**.

☞ A Cloud Connect licence is required for: Allplan BIMPLUS, Autodesk Construction Cloud, Bluebeam, Bricsys 24/7, Procore.

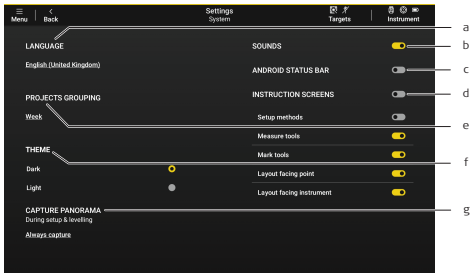
☞ A user account is required to sign in to a cloud service.

☞ An Internet connection is required to sign in and sign out from the cloud.

12.4 System

Description

- Customise the settings of the software.



a) **LANGUAGE**
Change the language of the software.

b) **SOUNDS**
Activate the sound notifications.

c) **ANDROID STATUS BAR**
Keep the Android status bar always on the screen.

d) **INSTRUCTION SCREENS**
Show instruction screens when starting certain functions.

e) **PROJECTS GROUPING**.
Change projects grouping on the Projects screen. Group projects by: **Day**/**Week**/**Month**/**Year**

f) **THEME**
Switch between **Dark** for indoors or **Light** for outdoors version of the software.

g) **CAPTURE PANORAMA**
Toggle among: **Always ask**, **Never capture** or **Always capture** settings regarding panorama capturing during setup and levelling routine.

How to access

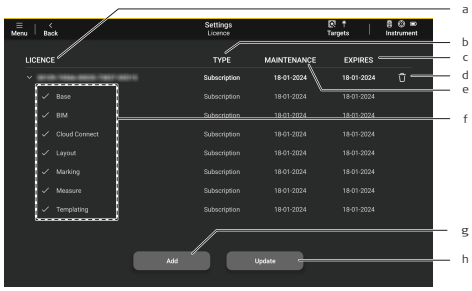
1. Open the Menu.
2. Tap **Settings**.
3. Tap **System**.

☞ **CAPTURE PANORAMA** is only available for iCS20 and iCS50.

12.5 Licence

Description

- Activate, review and remove software licences.
- Update licence information in case of:
  - Reorder of license options and CCP (to update maintenance end date)
  - After automatic subscription renewal



a) **LICENCE**
Entitlement ID

b) **TYPE**
The type of licence: **Perpetual** or **Subscription**

c) **EXPIRES**
Expiry date of the licence

d) Remove
Return the licence to the server to use it on another device.

e) **MAINTENANCE**
Expiry date of the software maintenance

f) List of active software options

g) **Add**
Activate a new licence.

h) **Update**
Connect to the server to update active licences.

How to access

1. Open the Menu.
2. Tap **Settings**.
3. Tap **Licence**.

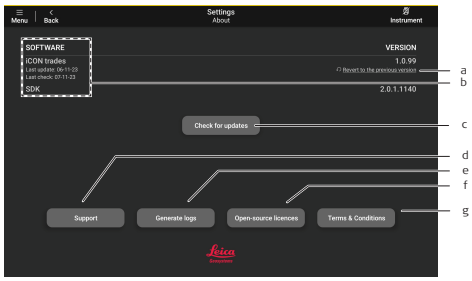
☞ It is not possible to activate the same Entitlement ID on multiple devices.

☞ An Internet connection is required to add, update and remove licences.

12.6 About

Description

- Review information about the software.
- Check and install updates.



a) **Revert to the previous version**
Visible only with Internet connection.
b) **SOFTWARE**
Information about the current software version, last update and last check for updates.
c) **Check for updates**
Verify if the software is up to date.
d) **Support**
Contact support via online form. Internet connection is required.
e) **Generate logs**
Save the log files to share with the support team.
f) **Open-source licences**
Open the list of all open-source licences used in the software.
g) **Terms & Conditions**

How to access

1. Open the Menu.
2. Tap **Settings**.
3. Tap **About**.

☞ An Internet connection is required to check for updates and revert to previous version.

☞ A manual installation is required when reverting to a previous version.

Description

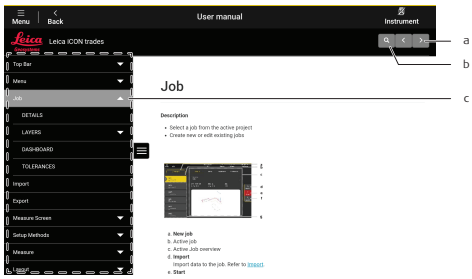
- Direct access to on-screen help related to the specific software feature which is currently visible on the screen.
- Tap on a highlighted feature to see the information.
- Available everywhere in the software.
- No scrolling and searching in the user manual required.



a) **Exit**
Exit the help mode.
b) Available help placeholder
Show help about the feature.

How to access

1.	Go to the screen that contains the feature you wish to be explained.
2.	Open the Menu.
3.	Tap **Help** to activate the interactive help.
4.	Tap the yellow placeholder to open the information dialog.



a) Navigation
b) Search for a specific key word.
c) Table of contents

How to access

1. Open the Menu.
2. Tap **Manual**.

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PART OF HEXAGON

- when it has to be right

Leica Geosystems