LEICA ICON ICS50 · INDUSTRY WORKBOOK

Commercial Millwork Workbook

Six hands-on lessons, from first setup to a full field verify. Pass the final project and earn SPEEDtemplate Certified iCS50 Technician.



SPEEDtemplate

MILLWORK WORKBOOK

EDITION 1.0 · OCTOBER 2026

START HERE

Learn it by doing it.

This workbook is a class you take on your own time, with the real iCS50, on real work. Each lesson takes about an hour. Work through them in order, write your answers in the book, and tick every box. Then send your final project to SPEEDtemplate for review.

1 to 5
Lessons
Read, practice, write it down, check yourself.

6
Final project
Field verify a full area on your own.

Review
SPEEDtemplate checks it
Support reviews your files and photos.

Pass
Certified
SPEEDtemplate Certified iCS50 Technician.

Every lesson works the same way

READ
Read first
The General Guide sections listed at the top of the lesson.

DO
Do the exercise
With the iCS50, step by step. Tick each box as you go.

WRITE
Write it down
Record what you saw. Numbers, lights, what went wrong.

CHECK
Check yourself
Answer the questions. Answers are at the back.

SIGN
Sign it off
Initial and date the lesson, then move on.

What you need

- The iCS50 kit, charged, with the tripod and V-Targets
- The iCS50 General Guide and the Commercial Millwork Guide
- An office, a lobby or a large open room with a doorway to a second space
- A pen, and painter's tape
- For Lessons 4 to 6: what drafting needs back, and in which DXF format

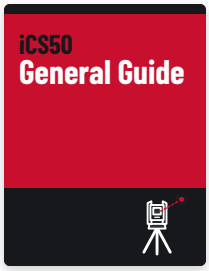
Tips for getting through it

- Go in order. Each lesson builds on the last.
- Mistakes are part of the exercise. Several steps make you hit a problem on purpose so you know it when it happens on a real job.
- Stuck for more than ten minutes? Call SPEEDtemplate support at 919-676-2244.
- Keep this book. The answers you write become your own notes.

HOW THE BOOKS WORK

Three books. Each has one job.

The **General Guide** says how. The **Industry Guide** says what. The **Industry Workbook** makes it stick.

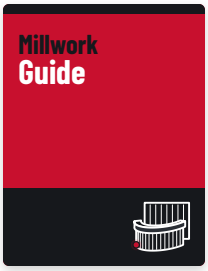


How the iCS50 works

For every crew in every trade: setup, measuring, planes, moving the iCS50, editing, layers and export.

USE IT
Read Sections 1 and 3 before onboarding. After that, look things up when you need them.

KEEP IT
In the iCS50 case. One per shop.



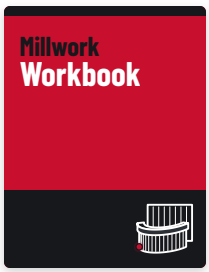
What to capture in the industry

What changes on a kitchen, a cabinet room, a millwork floor, a stair or a boat: what to capture, where to set up, the exact taps, the checks and the hand-off.

USE IT
Before the first job, then on every job, next to the General Guide.

KEEP IT
In the case, with the General Guide. One per shop, per industry.

THIS BOOK



Learn it by doing it

A self-paced course in the industry: six lessons with the real iCS50, three real jobs, a final project and SPEEDtemplate certification.

USE IT
After onboarding. Once, in order. Write in it.

KEEP IT
With the operator. One per operator.

Which book do I open?

THE QUESTION	OPEN
How do I set up, measure, move the iCS50 or export a DXF?	General Guide
What do I capture on this job, and what does the shop need back?	Industry Guide
I am new, or I want to get certified.	Industry Workbook
Something is not working.	General Guide, Troubleshooting. Then call 919-676-2244.

NOTE When the General Guide and an Industry Guide say different things, the Industry Guide wins for that industry. The website always has the latest version of every book.

START HERE

Your progress

Fill in your details, then track each lesson here.

Operator name _____ **Company** _____

Phone / email _____ **In-house iCS50 lead** _____

iCS50 serial number _____ **Date started** _____

LESSON	TOPIC	DATE STARTED	DATE DONE	INITIALS
1	Setup and the basics			
2	Measuring a wall			
3	A whole area			
4	Clean up and deliver			
5	Soffits, columns and curves			
6	Final project			
	Sent to SPEEDtemplate for review			
	Certified			

TIP Plan the lessons a few days apart if you can. Practicing on a real job between lessons makes the next one easier.

LESSON 1 · ABOUT 45 MINUTES

Setup and the basics

GOAL Set up the iCS50 correctly, read its lights, and take two good start points.

You'll be able to

- Set up the tripod and iCS50 the right way, every time
- Connect the tablet and read the status lights
- Pick the right job type
- Take start points that don't cause problems later

Before you start

READ IN THE GENERAL GUIDE

- Set up the iCS50
- iCS50 status lights
- The remote
- 1. Key concepts: 2D planes vs. 3D
- 3. Starting a job

YOU NEED

- iCS50 kit and tripod
- A room with at least one clear wall

Exercise: set up and start a job

#	DO THIS	DONE
1	Open the tripod legs and **extend every leg section fully**. Lock each one.	☐
2	Mount the iCS50. Close the quick-mount latch and give the iCS50 a gentle tug.	☐
3	Turn on the iCS50 and the remote.	☐
4	Open iCON trades. Connect in **Device Manager**, over Wi-Fi. Watch the connection light turn solid blue.	☐
5	Tap **Quick Start / New Job**. Name the job "Lesson 1" and choose **2D Horizontal**.	☐
6	Let the iCS50 level. Watch the level light go from flashing green to solid green.	☐
7	Skip the panorama.	☐
8	Check that the light under **Point** on the remote is green. Take the two start points on a wall.	☐
9	Gently bump the tripod. Watch the level light. Then re-level: **Instrument › Repeat leveling**.	☐
10	Now make the common mistake on purpose: press **Polyline** on the remote, start a new job, and take the two start points. Draw one more point and see what happens.	☐
11	Delete the joined points. Exit the job.	☐

Write it down

Connection light when connected _____

Level light after the bump _____

Remote battery: lights on (of 4) _____

What happened in step 10 _____

Which job type would you start with?

A lobby with a reception desk _____

One wall of casework _____

A whole floor _____

Not sure what's on site _____

Run it again

Repeat the exercise without looking at the steps. Time both runs.

First run (minutes) _____

Second run (minutes) _____

Sketch or notes

Check yourself

1 **Why fully extend every tripod leg section?**

- ○ It looks better on site
- ○ A partly extended tripod is a common cause of setup problems
- ○ iCON trades won't connect otherwise

2 **The level light is flashing red. What happened?**

- ○ The battery is low
- ○ The iCS50 moved, so the level is no longer valid
- ○ A firmware update is running

3 **A job started as 2D Horizontal needs a curved piece. What now?**

- ○ Start the job over in 3D
- ○ Tap Planes and switch to Unprojected 3D

4 **Which mode should the remote be in for the two start points?**

- ○ Point
- ○ Line
- ○ Polyline

5 **In your own words: why do the two start points matter?**

What was hardest in this lesson?

Lesson 1 complete

Initial and date when every box is ticked and the questions are answered.

Operator initials _____

Date _____

LESSON 2 · ABOUT 60 MINUTES

Measuring a wall

GOAL Capture a full wall elevation with the VPen and Laser mode, including a window, and get clean corners.

You'll be able to

- Choose between VPen, Laser and Crosshair
- Use Point, Line and Polyline from the remote
- Measure corners the right way with each method
- Recognize the dead zone

Before you start

READ IN THE GENERAL GUIDE

- 4. Choosing how you measure
- 5. Drawing tools
- 6. Measuring tips and limits

YOU NEED

- A wall with a window or whiteboard, and an outlet or switch

Exercise: measuring a wall

#	DO THIS	DONE
1	New job "Lesson 2", **2D Vertical**. Take the start points on the wall you'll draw.	☐
2	**Targets › VPen**. In **Line** mode, capture the bottom edge of the wall: one point at each corner.	☐
3	Switch to **Polyline**. Capture the ceiling line with a point every 2 to 3 ft. Tap **Accept** to leave it open.	☐
4	Draw the window or whiteboard as a polyline with the VPen. Tap **Close** to join the last point to the first.	☐
5	Measure an outlet or switch with **Point**.	☐
6	Switch to **Any Surface › Laser**. At an inside corner, take two points on each wall next to the corner. Don't aim into the corner.	☐
7	Walk the VPen toward the iCS50 until you get "Measure failed: out of measuring range." Note how close you were.	☐
8	Tap the **2D** button in the bottom toolbar to see the wall in 3D, then switch back.	☐

Write it down

Dead zone started at about (ft) _____ **Cleaner window corners: pen or laser?** _____

Biggest dip or belly in the ceiling _____ **Points used on the ceiling line** _____

What would you do differently on a real job?

_____

_____

_____

Run it again

Repeat the exercise without looking at the steps. Time both runs.

First run (minutes) _____ **Second run (minutes)** _____

Sketch or notes

Check yourself

1 **Best method for a black, shiny or glass surface?**

- ○ Any Surface: Laser
- ○ Any Surface: Crosshair
- ○ VPen

2 **Measuring a corner in Laser mode, you should:**

- ○ Aim straight into the corner
- ○ Shoot both surfaces next to it and close it with Intersect later

3 **To finish a polyline without joining it back to the start, tap:**

- ○ Accept
- ○ Close

4 **The dead zone around the iCS50 is about:**

- ○ 6 in
- ○ 2 ft
- ○ 10 ft

5 **How many points per side for a window drawn in Line mode, and why?**

_____

_____

What was hardest in this lesson?

_____

_____

_____

Lesson 2 complete

Initial and date when every box is ticked and the questions are answered.

Operator initials _____

Date _____

LESSON 3 · ABOUT 75 MINUTES

A whole area

GOAL Field verify two connected rooms in one drawing: every millwork wall, ceilings and MEP, with the iCS50 moved through a doorway.

You'll be able to

- Add a plane for each surface
- Place and measure V-Targets
- Move the iCS50 without losing the drawing
- Find your way between planes

Before you start

READ IN THE GENERAL GUIDE

- 7. Adding more planes
- 8. Moving the iCS50 with V-Targets
- Commercial Millwork Guide: Big floors and multi-day jobs

YOU NEED

- Three V-Targets, painter's tape
- Two rooms joined by a doorway

Exercise: a whole area

#	DO THIS	DONE
1	New job "Lesson 3", **3D**. Walk both rooms. Mark which walls get millwork.	☐
2	**New plane › Horizontal** about 6 in off the floor: walls, columns and openings.	☐
3	A **Vertical** plane for each millwork wall in room 1. Name it by room and wall: "Room 1 N".	☐
4	Each wall: corners, floor and ceiling lines with a point every 2 to 3 ft, plumb at both ends.	☐
5	Outlets, data, switches and plumbing as Points, each on its own layer.	☐
6	Place V-Targets on fixed walls that both rooms can see, never on things other trades will move.	☐
7	**Tools › Setup › Capture vTargets**. Move the iCS50 into room 2. **New Setup › V-Targets**. Accept on green.	☐
8	Check the measuring method. Switch back to **VPen** if it changed. Capture room 2 the same way.	☐
9	View both rooms in 3D. Do the shared walls line up?	☐
10	Bonus: photograph where each target is, as if you were coming back tomorrow.	☐

Write it down

Planes in your job _____ Biggest ceiling dip _____

Wall most out of plumb _____ Where the 3 targets went _____

Sketch where you placed the iCS50 and the targets

LESSON 3

Notes

Run it again

Repeat the exercise without looking at the steps. Time both runs.

First run (minutes) _____ Second run (minutes) _____

Check yourself

1 **Why spread the three V-Targets around the job?**

- ○ So the iCS50 can find its position from different spots
- ○ So they don't get in the way

2 **Same drawing, next area. Do you pick up the old targets and reuse them?**

- ○ Yes, move them
- ○ No, place new ones

3 **For a job that runs over several days, use:**

- ○ Magnetic targets
- ○ Adhesive targets or control points

4 **Something you drew earlier disappeared from the screen. Most likely:**

- ○ It was deleted
- ○ It's on another plane

5 **After a new setup, the tool changed to crosshair. What do you do?**

What was hardest in this lesson?

Lesson 3 complete

Initial and date when every box is ticked and the questions are answered.

Operator initials _____

Date _____

LESSON 4 · ABOUT 60 MINUTES

Clean up and deliver

GOAL Turn the Lesson 3 job into a clean DXF that drafting can use, and save the job to SPEEDfolder.

You'll be able to

- Close shapes and fix corners
- Build a job template with the layers drafting uses
- Export a clean DXF in the right units
- Save photos and files to SPEEDfolder

Before you start

READ IN THE GENERAL GUIDE

- 9. Editing your drawing
- 10. Layers and job templates
- Starter layer plan (worksheet)
- 12. Exporting, and Point Labels off
- Save the job to SPEEDfolder

YOU NEED

- The Lesson 3 job
- The layer names, colors and DXF format drafting uses

Exercise: from drawing to drafting

#	DO THIS	DONE
1	Fill in the Starter layer plan in the General Guide with drafting.	☐
2	**Menu › Job Templates**. Create a template with at least four layers. Set it as the default.	☐
3	Open the Lesson 3 job. Use **Intersect** to close every corner. Delete chamfer segments. Try **Hidden Corner** on one diagonal.	☐
4	Delete stray start points, or move them to their own layer.	☐
5	Put openings, fittings and utilities on layers.	☐
6	Check **Menu › Settings › Units** matches what drafting uses.	☐
7	Export a **2D DXF** and a **3D DXF**. Under CAD options, turn all point labels **off**. Set Export Points the way drafting wants.	☐
8	Share › Gmail. Send both files to drafting.	☐
9	In SPEEDfolder, create a job "Lesson 4". Take at least 5 photos in the app, annotate one, and tag them. Upload the DXF to the job.	☐
10	Ask drafting to open the DXF and say what should change.	☐

Write it down

Units set to _____ Template name _____

Layers in the template _____ Verdict on the file _____

What did drafting ask you to change?

_____

_____

_____

Run it again

Repeat the exercise without looking at the steps. Time both runs.

First run (minutes) _____ Second run (minutes) _____

Sketch or notes

LESSON 4

Check yourself

1 **Why turn Point Labels off before export?**

- ○ To make the file smaller
- ○ With labels on, every point shows with its tag and the drawing can't be read

2 **A job template applies to:**

- ○ Every job, including ones already open
- ○ Only jobs created after the template

3 **Which DXF lays every plane out flat, side by side?**

- ○ 2D DXF
- ○ 3D DXF

4 **"1 file out of 10 was not exported." What do you do?**

- ○ Start over
- ○ Usually nothing; tap OK

5 **Where should job photos live, and why not the camera roll?**

What was hardest in this lesson?

Lesson 4 complete

Initial and date when every box is ticked and the questions are answered.

Operator initials _____

Date _____

LESSON 5 · ABOUT 90 MINUTES

Soffits, columns and curves

GOAL Capture the hard parts of a commercial job: a soffit, a column, a curved face, and the difference from the architect's drawing.

You'll be able to

- Capture a soffit in section
- Wrap a column, square or round
- Trace and smooth a curved face
- Compare as built with a drawing

Before you start

READ IN THE GENERAL GUIDE

- Tracing with the VPen
- Commercial Millwork Guide: Soffits and ceilings
- Commercial Millwork Guide: Compare with the drawings

YOU NEED

- A soffit or bulkhead, a column and a curved wall or desk, if you can find them
- A PDF or DXF of the floor plan

NOTE Smooth needs a Templating licence. Overhead points from the Sky Reach pole (optional accessory) or a lift.

Exercise: soffits, columns and curves

#	DO THIS	DONE
1	New job "Lesson 5", **3D**. Import the floor plan DXF or PDF. Scale a PDF with **Edit › Scale Drawing**.	☐
2	Soffit: bottom corners, face corners and where it ends. Overhead points from the pole or a lift, not handheld.	☐
3	Column: points on every face, top and bottom. A round column: **Create › Circle**, Circle 3P, top and bottom.	☐
4	Curved face: hold **Measure** and trace the floor line slowly, then the top.	☐
5	**Edit › Smooth** on the trace. Add a radius dimension.	☐
6	Compare: where does a wall or column sit off the drawing? Tag it with a photo.	☐
7	**Measure › Distance** on two spans. Check against a tape.	☐
8	Bonus: **Measure › High/Low Points** along the floor where the casework sits.	☐

Write it down

Soffit height _____ Column out of plumb _____

Radius after Smooth _____ Biggest difference from the drawing _____

Where did the building differ from the drawing?

_____

_____

_____

Run it again

Repeat the exercise without looking at the steps. Time both runs.

First run (minutes) _____ Second run (minutes) _____

Sketch or notes

LESSON 5

Check yourself

1 **Overhead soffit points are taken with:**

- ○ The VPen held over your head
- ○ The VPen on the Sky Reach pole, or from a lift

2 **A round column is drawn with:**

- ○ Circle 3P, top and bottom
- ○ One point in the middle

3 **The drawing says one thing and the wall says another. Build to:**

- ○ The drawing
- ○ What was measured

4 **Smooth turns a trace into:**

- ○ Lines and arcs
- ○ A 3D surface

5 **Who needs to hear about a difference from the drawing, and when?**

What was hardest in this lesson?

Lesson 5 complete

Initial and date when every box is ticked and the questions are answered.

Operator initials _____

Date _____

BETWEEN LESSON 5 AND THE FINAL PROJECT

Real-job log

Before the final project, template at least three real jobs. Log each one here. Watch your time drop and the fixes get smaller.

#	DATE	JOB / ROOM	TIME ON SITE	WHAT WENT WELL	WHAT TO FIX NEXT TIME
1					
2					
3					
4					
5					
6					

TIP Send your first real export to SPEEDtemplate support for a quick look before drafting builds from it. Small fixes caught early save a remake.

LESSON 6 · ABOUT 2 TO 3 HOURS

Final project

THE BRIEF Field verify a full area on your own, from start to finish: every millwork wall, the ceilings and soffits, and the MEP. Then send the files to SPEEDtemplate for review. Pass, and you're a **SPEEDtemplate Certified iCS50 Technician**.

Your project must include

#	DO THIS	DONE
1	Tripod legs fully extended and locked; iCS50 leveled	☐
2	A 3D job, a horizontal plane and a vertical plane per millwork wall	☐
3	Start points taken in Point mode	☐
4	Floor and ceiling lines on every wall, plumb at both ends	☐
5	At least one iCS50 move using V-Targets and New Setup	☐
6	At least one soffit, column or curve	☐
7	Outlets, data, switches and plumbing, each on its layer	☐
8	Clean geometry: closed shapes, no chamfer segments, no stray points	☐
9	Layers from your job template, and units that match what drafting uses	☐
10	2D DXF and 3D DXF, all point labels off	☐
11	A SPEEDfolder job with at least 10 tagged photos and the DXF files	☐

Plan your project

Project and area _____ **Planned date** _____

Rooms in the area _____ **Where the iCS50 will start** _____

What do you expect to be hardest?

_____

_____

FINAL

LESSON 6

Send it for review

Email your project to **support@fifthgeartech.com** with the subject line **Certification: your name, your company**. Attach both DXF files, a photo of this page filled in, and a photo of your progress page. Add the SPEEDfolder job link.

Operator name _____ **Company** _____

Date templated _____ **Time on site** _____

Job templated _____ **Job type used** _____

Number of planes _____ **Number of iCS50 setups** _____

What was the hardest part of this job?

What would you tell a new operator?

FINAL

Sent for review

SPEEDtemplate support reviews every project and replies with a result.

Date sent _____

Operator initials _____

FOR SPEEDTEMPLATE

SPEEDtemplate review

Completed by SPEEDtemplate support. Every item must pass for certification.

WHAT WE CHECK	PASS	NEEDS WORK	NOTES
Setup: leveled, single clean set of start points	☐	☐	
Every millwork wall on its own plane, named	☐	☐	
Floor and ceiling lines, plumb at both ends	☐	☐	
iCS50 move with V-Targets, no drift between setups	☐	☐	
Soffit, column or curve captured	☐	☐	
MEP on its layers	☐	☐	
Clean geometry: closed, no chamfers, no stray points	☐	☐	
Layers and units match	☐	☐	
DXF opens clean, labels off	☐	☐	
SPEEDfolder job: tagged photos and files	☐	☐	

Result

○ Certified ○ Resubmit **Reviewed by** _____ **Date** _____ **Certificate number** ____

Feedback for the operator

FINAL

CHECK YOUR WORK

Answers

Try every question before you look. Written answers don't need to match word for word.

Lesson 1

1. A partly extended tripod is a common cause of setup problems.
2. The iCS50 moved, so the level is no longer valid. Re-level and run New Setup › V-Targets.
3. Tap Planes and switch to Unprojected 3D. Any job can switch to 3D.
4. Point.
5. They work like a datum: the system uses them to know where it is, and to link each new plane to the drawing.

Lesson 2

1. VPen.
2. Shoot both surfaces next to it and close it with Intersect later.
3. Accept.
4. 2 ft.
5. Two per side, one at each corner, so each side becomes one straight segment.

Lesson 3

1. So the iCS50 can work out its position from different spots.
2. No. Place new ones. Reuse targets only on a separate job.
3. Adhesive targets or control points. A bump or vibration can shift magnetic ones.
4. It's on another plane. Tap Planes and select it, or switch to 3D.
5. Normal after a new setup. Go to Targets and choose VPen again.

Lesson 4

1. With labels on, every point shows with its tag and the drawing can't be read.
2. Only jobs created after the template.
3. 2D DXF.
4. Usually nothing. It's often the labels you turned off. Tap OK.
5. On the job in SPEEDfolder, where the office sees them. Photos left in the camera roll get forgotten.

Lesson 5

1. The VPen on the Sky Reach pole, or from a lift.
2. Circle 3P, top and bottom.
3. What was measured. Send the difference to the PM.
4. Lines and arcs, with a radius on the drawing.
5. The PM, the same day, with the photo and the dimension.

FINAL

SPEEDtemplate

CERTIFICATE OF COMPLETION

SPEEDtemplate Certified iCS50 Technician

COMMERCIAL MILLWORK

This certifies that

_____

has completed the iCS50 Commercial Millwork Workbook and passed a final project reviewed by SPEEDtemplate: a full area field verified on their own with the Leica iCON iCS50, delivered as clean DXF elevations.

SPEEDtemplate reviewer	Date	Certificate number

FINAL

NOTES

Notes

NOTES

Notes

SPEEDtemplate

MILLWORK WORKBOOK



Stuck on a lesson?

919-676-2244

support@fifthgeartech.com

GENERAL GUIDE
How the iCS50 works

INDUSTRY GUIDE
What to capture in the industry

INDUSTRY WORKBOOK
Learn it by doing it

Leica GEOSYSTEMS

The Leica iCON iCS50, sold, set up and supported by SPEEDtemplate.

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