LEICA ICON ICS50 · INDUSTRY WORKBOOK

Residential Cabinets Workbook

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



SPEEDtemplate

CABINETS 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
Measure a full kitchen 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 Residential Cabinets Guide
- A kitchen or a room with clear walls, a window and some outlets
- A pen, and painter's tape
- For Lessons 4 to 6: what the designer needs back, and in which DXF format

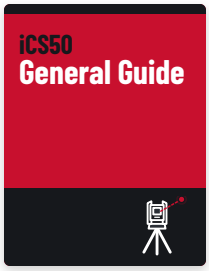
Tips for getting through it

- 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.

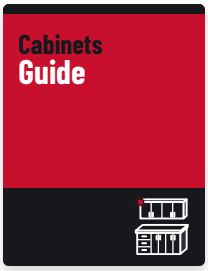


How the iCS50 works

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.



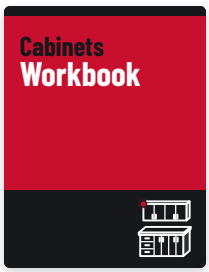
What to capture in the industry

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 kitchen			
4	Clean up and deliver			
5	Out of level and out of plumb			
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 kitchen, every wall _____

One wall of built-ins _____

A bay window wall _____

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 kitchen

GOAL Measure every wall of a kitchen in one drawing, lettered A, B, C, with the floor and ceiling lines, and move the iCS50 mid-job.

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
- Residential Cabinets Guide: Each wall, every time

YOU NEED

- Three V-Targets, painter's tape
- A kitchen, or a room with four walls and a doorway

Exercise: a whole kitchen

#	DO THIS	DONE
1	New job "Lesson 3", **3D**. Walk the room and letter the walls A, B, C, D clockwise from the door.	☐
2	**Planes › New plane › Vertical** for wall A. Two points on the wall itself. Name the plane "Wall A".	☐
3	Wall A: corners top and bottom, the floor line and the ceiling line with a point every 2 ft.	☐
4	Add windows, doors, outlets, switches and plumbing as Points, each on its own layer.	☐
5	Repeat for walls B and C.	☐
6	Place three V-Targets around the iCS50, about its height, each facing it.	☐
7	**Tools › Setup › Capture vTargets**, then move the iCS50 to see wall D. **New Setup › V-Targets**. Accept on green.	☐
8	Check the measuring method. Switch back to **VPen** if it changed. Finish wall D.	☐
9	**New plane › Horizontal** about 6 in off the floor: the floor plan, corners and openings.	☐
10	View the kitchen in 3D and rotate it. Every wall where it really is?	☐

Write it down

Planes in your job _____

Biggest floor drop along a wall _____

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 the designer 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 the designer 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 the designer uses

Exercise: from drawing to the designer

#	DO THIS	DONE
1	Fill in the Starter layer plan in the General Guide with the designer.	☐
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 the designer uses.	☐
7	Export a **2D DXF** and a **3D DXF**. Under CAD options, turn all point labels **off**. Set Export Points the way the designer wants.	☐
8	Share › Gmail. Send both files to the designer.	☐
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 the designer 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 the designer 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 75 MINUTES

Out of level and out of plumb

GOAL Find what the room really does: floor high point, walls out of plumb, ceilings that dip, and corners that aren't square.

You'll be able to

- Find the floor high point
- Check a wall for plumb
- Capture a ceiling or soffit line
- Read a corner angle

Before you start

READ IN THE GENERAL GUIDE

- Keep the iCS50 accurate
- Residential Cabinets Guide: Floor, plumb and square
- Residential Cabinets Guide: Ceilings, soffits and crown

YOU NEED

- A room with a floor that may not be flat
- A wall with a soffit or bulkhead, if you have one

NOTE High/Low Points and Surface Scan are under Measure. No extra licence needed.

Exercise: out of level and out of plumb

#	DO THIS	DONE
1	New job "Lesson 5", **3D**. A vertical plane on one wall, a horizontal plane for the floor.	☐
2	Floor line along the wall, a point every 2 ft. Then **Measure › High/Low Points** on the floor: 8 points along the run.	☐
3	Write down the high point and the low point, and where each one is.	☐
4	Plumb: a Point at the top and the bottom of the wall, at both ends.	☐
5	Ceiling line along the wall, a point every 2 ft. Note the biggest dip.	☐
6	A soffit or bulkhead: bottom corners and face corners, and where it ends.	☐
7	At a corner, a line on each wall, then **Measure › Angle**. Is it 90 degrees?	☐
8	Bonus: **Measure › Surface Scan** on a wall. Look for the belly a tape would miss.	☐

Write it down

Floor high point (where) _____ Floor drop, high to low _____

Out of plumb, top to bottom _____ Corner angle _____

What would a tape and level have missed?

_____

_____

_____

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 **Base cabinets are set from:**

- ○ The floor low point
- ○ The floor high point

2 **To check a wall for plumb, take:**

- ○ One point in the middle
- ○ A point top and bottom at each end

3 **A ceiling line needs a point every:**

- ○ 2 to 3 ft
- ○ 10 ft

4 **A corner reads 92 degrees. What does the designer need?**

- ○ The real angle
- ○ Nothing, call it square

5 **Where would a dipping ceiling line save a remake?**

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 the designer builds from it. Small fixes caught early save a remake.

LESSON 6 · ABOUT 2 TO 3 HOURS

Final project

THE BRIEF Measure a full kitchen on your own, from start to finish: every wall, the floor plan and every opening and utility. 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, every wall lettered and on its own plane	☐
3	Start points taken in Point mode	☐
4	Floor and ceiling lines on every cabinet wall, plumb at both ends	☐
5	At least one iCS50 move using V-Targets and New Setup	☐
6	The floor high point found and noted	☐
7	Windows, doors, outlets, 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 the designer 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

Kitchen or job _____ **Planned date** _____

Walls, lettered _____ **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 wall lettered, each on its own plane	☐	☐	
Floor and ceiling lines, plumb at both ends	☐	☐	
iCS50 move with V-Targets, no drift between setups	☐	☐	
Floor high point found	☐	☐	
Openings and utilities on their 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 floor high point. The bases are leveled up from there.
2. A point top and bottom at each end.
3. 2 to 3 ft, so dips and bellies show.
4. The real angle. Fillers and scribes are cut to it.
5. Any answer about tall units or crown: a dip at a tall pantry or a crown run is found before the boxes are built.

FINAL

SPEEDtemplate

CERTIFICATE OF COMPLETION

SPEEDtemplate Certified iCS50 Technician

RESIDENTIAL CABINETS

This certifies that

_____

has completed the iCS50 Residential Cabinets Workbook and passed a final project reviewed by SPEEDtemplate: a full kitchen measured on their own with the Leica iCON iCS50, delivered as clean DXF elevations.

SPEEDtemplate reviewer	Date	Certificate number
_____	_____	_____

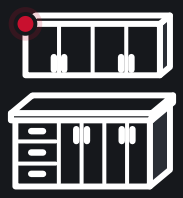
FINAL

Notes

Notes

SPEEDtemplate

CABINETS 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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