



XUNPAKHILI

সোণপখিলী

Theatre Lighting Design and Control

নাটকৰ পোহৰ পৰিকল্পনা আৰু নিয়ন্ত্ৰণ

User Manual

English edition · October 2026

Dedicated to Rupkonwar Jyoti Prasad Agarwala (1903–1951).



Created by Dr. Mrinal Jyoti Goswami on behalf of AANK_A Creative Line, Assam, India.
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XUNPAKHILI · সোণপখিলী

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CHAPTER 1

01

Welcome

XUNPAKHILI is a tool for designing and running theatre lighting. This chapter explains what it does, what you need and how this manual is arranged.

■ What XUNPAKHILI is

XUNPAKHILI (সোণপখিলী) takes a lighting design from the first sketch to the performance. You choose the stage, hang the lights on pipes, booms and trusses, focus each one and read how much light reaches the actors. You check the look in 3D, build the cue list, run the show and send DMX to a lighting interface, and print the paperwork the crew needs: schedules, patch, focus charts and a magic sheet.

It is made for theatre lighting designers, operators, teachers and students. The interface is in English and Assamese, and the stage templates include the spaces where theatre is made in Assam: proscenium halls, Namghar and Bhaona spaces, mobile theatre, thrust and arena stages, black boxes and the open air.

■ Your work stays with you

Everything you do is saved on your own device, inside the browser, as you work. Nothing is sent to a server, and XUNPAKHILI works without the internet once it has been opened. To keep a project safe or to move it to another device, save the project file. Chapter 4 explains how.

■ What you need

- A computer, tablet or phone with a recent version of Chrome, Edge, Safari or Firefox.
- An internet connection the first time you open it. After that, none is needed.
- A computer or tablet is best for the plot and the 3D view; a phone is handy for switching lights and checking levels during a focus call.
- To send DMX: Chrome or Edge on a computer and an Enttec DMX USB Pro or a compatible interface.

NOTE

The Installation Guide, a separate document, explains how to install XUNPAKHILI as an app on Android, iPhone, iPad, Windows and macOS, and how to use the portable single-file version.

■ How to read this manual

Read chapters 2 and 3 first. After that, each chapter follows one part of the main menu, so you can go straight to what you need. Words in a box, such as **Lights**, are the names of buttons and labels exactly as they appear on screen. Numbered circles on the pictures match the numbered notes below them.

CHAPTER 2

02

Getting started

Open XUNPAKHILI, choose your language and light the sample stage, one light at a time.

The welcome screen

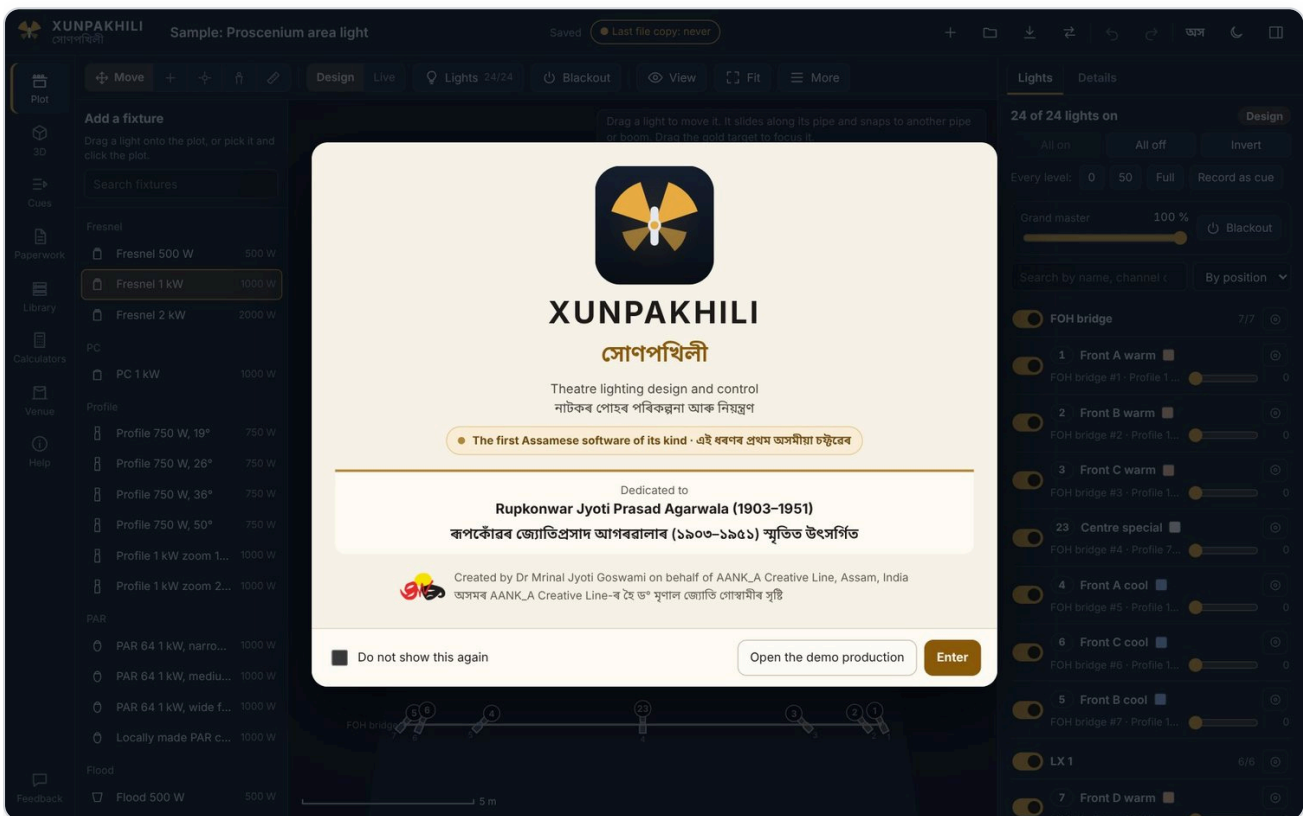


Figure 2.1 The welcome screen, dedicated to Rupkonwar Jyoti Prasad Agarwala.

Each time XUNPAKHILI opens, the welcome screen appears first. It shows the name in English and Assamese, the dedication and the credits. Press **Enter** to go to your work, or

Open the demo production to open the sample project described below. If you would rather go straight to your work, tick **Do not show this again**. You can bring the welcome screen back at any time with **Welcome screen** in **Help**, or with **Show the welcome screen** in the About window (chapter 15).

XUNPAKHILI starts in English. To work in Assamese, press the language button in the top bar: it reads **অস** while the app is in English and **EN** while it is in Assamese. The choice is remembered on this device and used everywhere in the app. On aank.org, the **EN** and **অসমীয়া** switch on the start page also sets the language of the app.

■ The sample stage

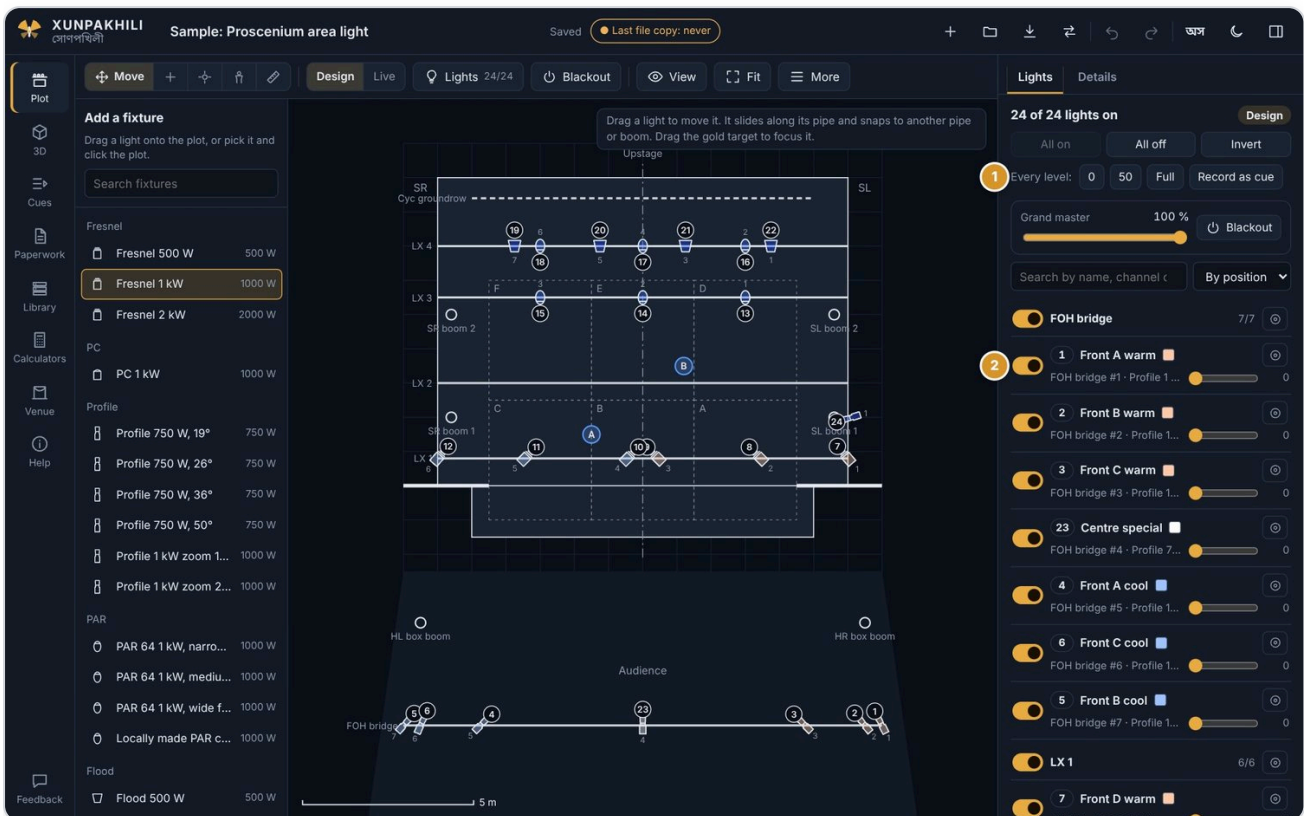


Figure 2.2 The sample stage opens dark. Every light is listed on the right, each on its own channel.

- 1 **Every level:** sets every light to 0, 50 or **Full** at once.
- 2 One row per light: switch, channel, name, level slider and value.

The first time you enter, a complete sample project opens: a proscenium stage with 24 lights. Front light in warm and cool for six acting areas (A to F), six back lights, four LED cyc floods, a centre special and a breakup gobo from a side boom. The stage starts dark on purpose, so that you can see what each light does on its own.

- 1 Click the value at the end of a row (it shows 0). The light goes to full; click again to bring it back to 0. Or drag the slider to any level.
- 2 Raise Front A warm, then Back A, then Cyc 1, and watch the plot change. Each light lights only its own part of the stage.
- 3 Open **3D** in the main menu to see the same look in 3D.
- 4 When you are ready to start your own design, press **New project** (the + button) in the top bar (chapter 4).

TIP

To bring the sample back at any time, press **Load the sample project** in **Help**, or **Open the demo production** on the welcome screen. The open project is kept as an automatic backup; save it to a file first if you want a copy.

CHAPTER 3

03

The screen at a glance

Every view shares the same frame: the main menu on the left, the top bar, the work area and the side panel.

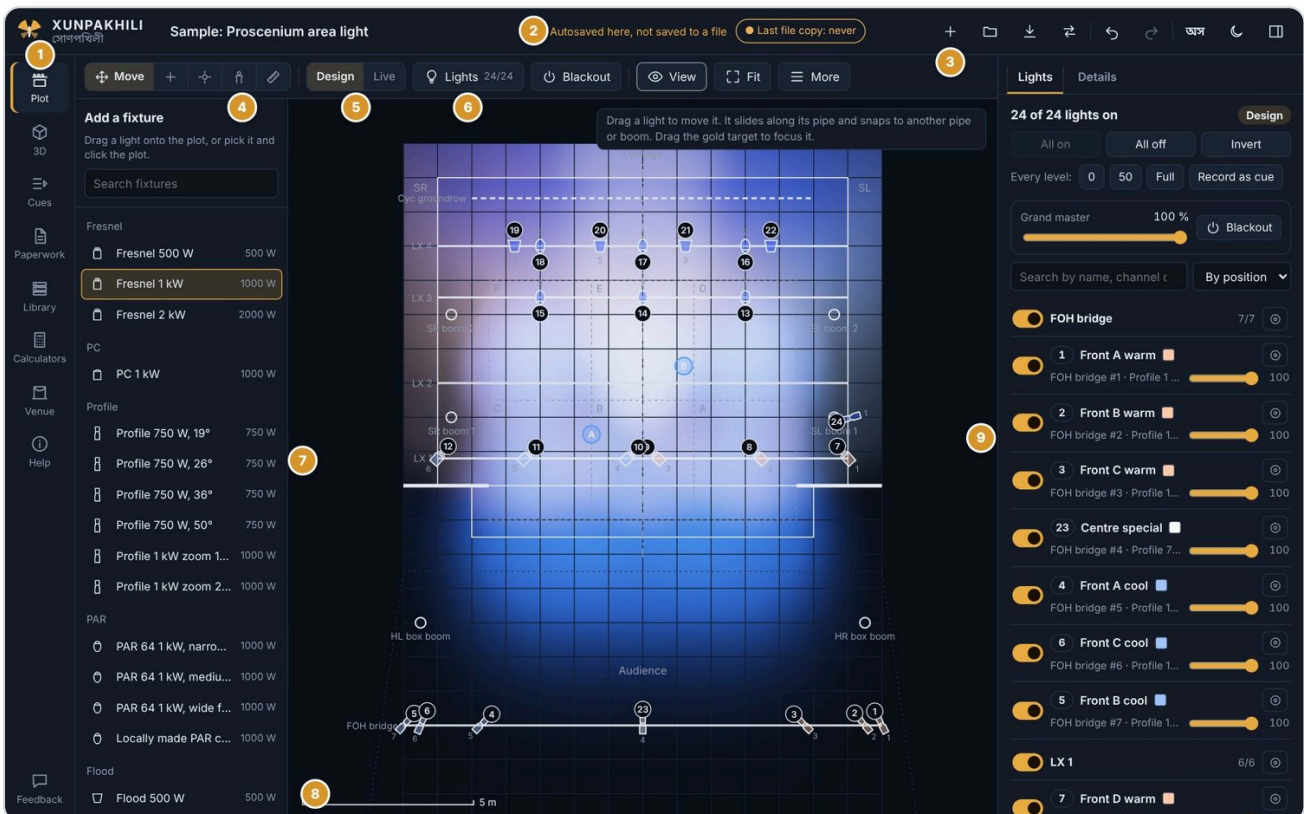


Figure 3.1 The main parts of the screen, shown on the plot.

- 1 Main menu: **Plot**, **3D**, **Cues**, **Paperwork**, **Library**, **Calculators**, **Venue** and **Help**. **Feedback** at the foot opens the feedback form.
- 2 Project title and save status. **Autosaved here, not saved to a file** means the work is safe in this browser but not yet in a project file. Beside it, **Last file copy** shows when you last saved one.
- 3 Top bar: **New project**, **Open project file**, **Save project file**, **Send to or open from another AANK app**, **Undo**, **Redo**, language, theme and side panel.
- 4 Plot tools: **Move**, **Add light**, **Focus**, **Performer** and **Measure**.
- 5 **Design** or **Live**: show the design levels, or the output of the cue list.
- 6 **Lights**, **Blackout**, **View**, **Fit** and **More**.
- 7 **Add a fixture**: the fixtures you can hang, grouped by family.
- 8 The plot: the stage seen from above, with every light, its number and its pool.
- 9 Side panel with two tabs: **Lights** (chapter 8) and **Details** of the selected light (chapter 7).

Every change is kept in this browser straight away, and XUNPAKHILI keeps five automatic backups as you work. For a copy you can carry or send, use **Save project file** (chapter 4). **Undo** and **Redo** (Ctrl+Z and Ctrl+Y) step back and forward through your changes. The theme button switches

between a dark screen, which is kinder in a dark auditorium, and a light one for daytime and printing. Click the XUNPAKHILI name at the top left to open the About window (chapter 15). When the browser can install XUNPAKHILI, an **Install** button appears at the start of the top bar.

■ On a phone

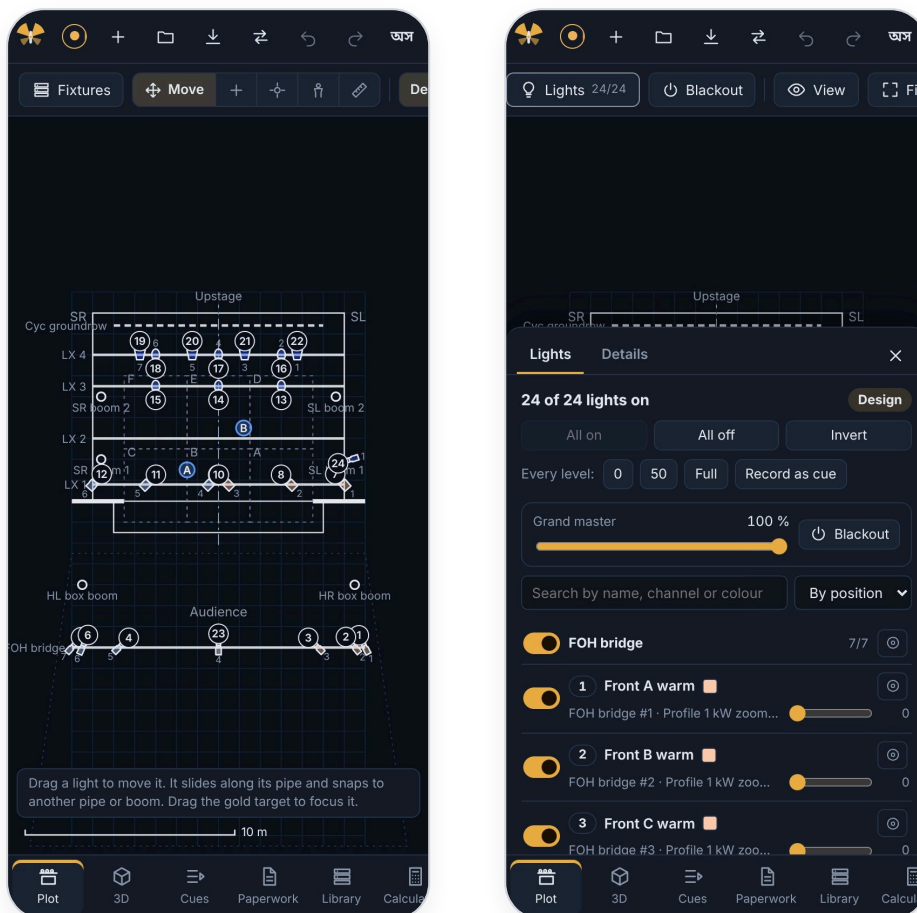


Figure 3.2 On a phone: the plot, and the lights list opened from the **Lights** button.

On a phone the main menu moves to the bottom of the screen and the side panel opens as a sheet over the plot. Close it with the cross at its top right. The fixture palette opens from the **Fixtures** button at the start of the plot toolbar.

The top bar is shorter: the project title is hidden, and **Last file copy** becomes a coloured dot beside the XUNPAKHILI mark. Tap the dot to see your backups in the About window. On iPhone, iPad and Android phones, USB-DMX output and saving back into the same file are not available.

CHAPTER 4

04

Projects and files

One project holds one lighting design: the venue, the rig, the cues and the paperwork.

■ Starting a new project

- 1 Press **New project** (+) in the top bar. If the open project has changes that are not saved to a file, XUNPAKHILI asks first; the open project is kept as an automatic backup.
- 2 The **Venue** view opens. Fill in the production details, choose a stage template and adjust its sizes (chapter 5).
- 3 Go to **Plot** and start hanging lights (chapter 6).

■ Saving and opening files

XUNPAKHILI saves the project in this browser as you work, with five automatic backups (chapter 15). To keep a copy you can carry, send or archive, press **Save project file** (Ctrl+S). In Chrome and Edge on a computer, the first save asks where to put the file; later saves write back into that .xunp file, and Ctrl+Shift+S saves a new one. Other browsers download a file named after the production, ending in .xunp. The status then reads **Saved**.

To continue from a file, on this or any other device, press **Open project file** (Ctrl+O) and choose the .xunp file. A project file holds the venue, every instrument with its focus, colour and patch, the performers, groups and cues, and a copy of every fixture type it uses, so it opens complete on a device whose library does not have those fixtures.

■ Working with the other AANK apps

XUNPAKHILI is one of seven AANK apps that work together: XUDHAKANTHA (the mother app) and six studios, SILPA KUTIR, XUNPAKHILI, BURHA LUIT, AAROHAN, SRINIBARAN and KUMSUNG. The arrows button in the top bar holds **Send to another AANK app...**, which sends the venue, the cue list with its scenes, the rig and a lighting report (outside aank.org, through **Save .aank file**), and **Open work from another AANK app...**, which brings in their stage, scenes and notes. The “What’s new in this release” pages at the end of this manual explain both.

IMPORTANT The autosaved copy and the backups live in this browser only. Clearing the browser’s data, or working in a private window, removes them. Save the project file at the end of every session; when the last file copy is a week old, XUNPAKHILI reminds you.

CHAPTER 5

05

The venue

The venue gives the stage its size and shape, the places where lights can hang and the power supply.

Project

Production title: Sample: Proscenium area light

Company:

Venue: Sample proscenium stage

Lighting designer:

Director:

Assistant designer:

Date: 10/10/2026

Revision: 1

Notes:

Venue template

Start from a stage type, then adjust the sizes and positions below.

Proscenium
Picture-frame stage, audience in front

Thrust
Stage runs into the audience on three sides

Arena
Audience all round

Black box
Studio space with a pipe grid

Open air
Outdoor stage with towers and truss

Namghar / Bhaona
Long acting area, audience on both sides

Mobile theatre
Large touring stage with trusses and towers

Stage

Stage width (m): 12

Stage depth (m): 9

Stage height (m): 0.9

Apron depth (m): 1.5

Apron width (m): 10

Proscenium opening (m): 9

Proscenium height (m): 6

Back wall height (m): 9

Grid height (m): 8

Audience depth (m): 15

Audience layout: In front

Figure 5.1 The **Venue** view: project details, venue template and stage sizes.

Project details

Production title, company, venue, lighting designer, director, assistant designer, date, revision and notes. These details print at the head of every report.

Choosing a stage

Template	What it gives you
Proscenium	Picture-frame stage, audience in front. FOH bridge, box booms, four onstage pipes, side booms and a cyc.
Thrust	Stage runs into the audience on three sides.
Arena	Audience all round.

Template	What it gives you
Black box	Studio space with a pipe grid.
Open air	Outdoor stage with towers and truss.
Namghar / Bhaona	Long acting area, audience on both sides, with the Entrance end and the Altar end marked.
Mobile theatre	Large touring stage with trusses and towers.

Click a template to apply it. If lights are already hung, XUNPAKHILI asks first: the lights stay where they are but lose their hanging positions, and the change can be undone. Then adjust the stage sizes: width, depth, height of the deck, apron, proscenium opening and height, back wall, grid height, audience depth and audience layout.

Hanging positions

The screenshot shows the XUNPAKHILI software interface. The main window is titled 'Sample: Proscenium area light' and 'Autosaved here, not downloaded'. On the left is a sidebar with icons for Plot, 3D, Cues, Paperwork, Library, Calculators, Venue (selected), and About. The main area is titled 'Hanging positions' and includes a description: 'X runs across the stage (positive is stage left), Y runs upstage from the setting line, and heights are above the stage floor.' Below this is a table with columns: Name, Kind, X1, Y1, X2, Y2, Height, Top height, Rating (kg), and Instruments. The table lists various hanging positions like FOH bridge, HL box boom, HR box boom, LX 1-4, SR boom 1-2, SL boom 1-2, and Cyc groundrow. At the bottom, there is a 'Settings' section with fields for Units (Metres), Mains supply (230 V / 50 Hz), Power factor (0.95), Circuit rating (A) (16), and Level for new instruments (%) (100).

Name	Kind	X1	Y1	X2	Y2	Height	Top height	Rating (kg)	Instruments
FOH bridge	Pipe	-7	-7	7	-7	6.5	-	300	7
HL box boom	Boom	-6.5	-4	-	-	1	5	100	0
HR box boom	Boom	6.5	-4	-	-	1	5	100	0
LX 1	Pipe	-6	0.8	6	0.8	7	-	300	6
LX 2	Pipe	-6	3	6	3	7	-	300	0
LX 3	Pipe	-6	5.5	6	5.5	7	-	300	3
LX 4	Pipe	-6	7	6	7	7	-	300	7
SR boom 1	Boom	-5.6	2	-	-	0.3	3	100	0
SL boom 1	Boom	5.6	2	-	-	0.3	3	100	1
SR boom 2	Boom	-5.6	5	-	-	0.3	3	100	0
SL boom 2	Boom	5.6	5	-	-	0.3	3	100	0
Cyc groundrow	Floor	-5	8.4	5	8.4	0.2	-	100	0

Settings

Units: Metres | Mains supply: 230 V / 50 Hz | Power factor: 0.95 | Circuit rating (A): 16

Level for new instruments (%): 100

Figure 5.2 Hanging positions: one row for each pipe, boom, truss or floor position.

Every place where lights can hang is a hanging position: a **Pipe**, a **Boom** (a vertical stand), a **Truss** or a **Floor** position. Add one with the buttons above the table and give it a name, its two ends and its height. X runs across the stage (positive is stage left), Y runs upstage from the setting line, and heights are above the stage floor.

Deleting a position does not delete its lights: they stay on the plot as free instruments. Below the table, **Settings** hold the mains supply (voltage, phases, power factor and circuit rating), the units (metres or feet) and the level given to newly added lights.

CHAPTER 6

06

The light plot

Hang lights on the stage, move them, number them and read the plot the way a lighting designer draws it.

Reading the plot

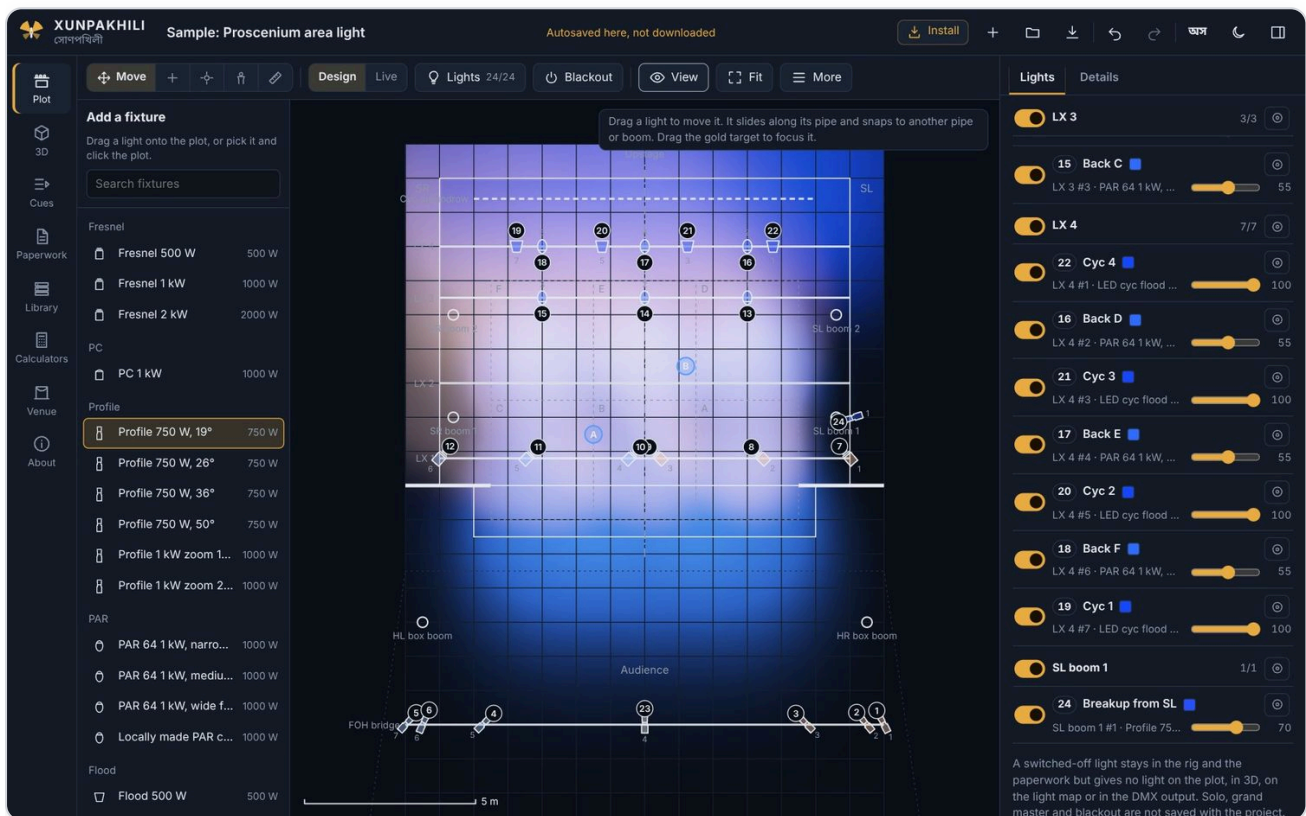


Figure 6.1 A designed look on the plot: warm front light, back light at 55 %, blue cyc and a breakup from the side.

The plot shows the stage from above, with the audience at the bottom. Each light is drawn with the symbol of its family and its channel number in a circle. The lettered circles are the acting areas, and A and B are performers. A light that is switched off is drawn faint, and the grey numbers beside each light are unit numbers along its position.

Drag empty space to pan, and scroll or pinch to zoom. **Fit** (key 0) brings the whole stage back into view.

■ Adding a light

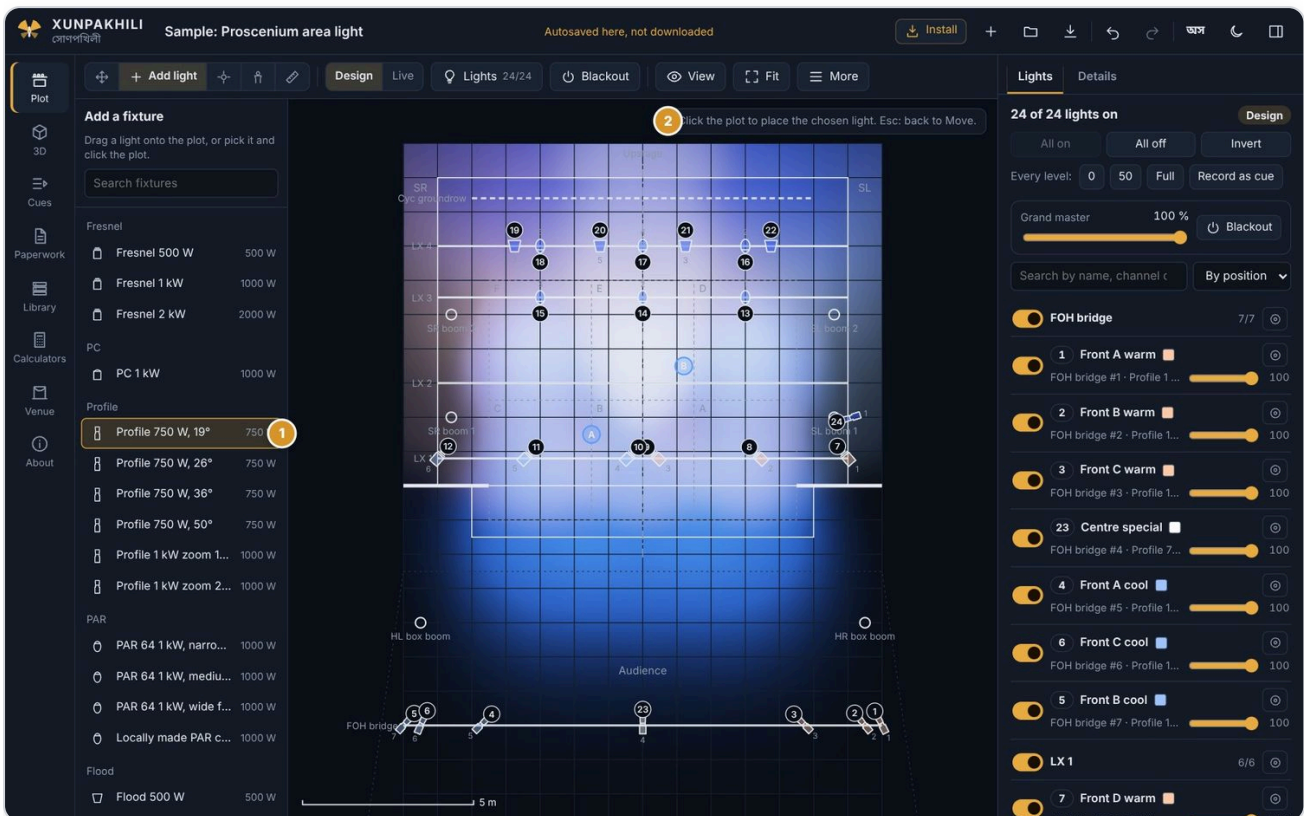


Figure 6.2 Adding a light: choose it in the palette, then click the plot.

- 1 The chosen fixture is marked in the palette.
- 2 The hint tells you what the current tool does. Esc goes back to **Move**.
- 1 Find the fixture in the **Fixture palette** on the left. Type in the search box to narrow the list.
- 2 Drag it onto the plot, or click it and then click the plot. The light snaps to the nearest pipe, boom or truss.
- 3 It arrives with the next free channel and DMX address, focused straight ahead. Add as many as you need; press Esc when you are done.

■ Moving lights

With **Move** (key V), drag a light to move it. It slides along its own pipe and jumps to another pipe or boom when you bring it close. Its focus point moves with it, so the light keeps lighting the same kind of place. Hold Alt while dragging to place it freely, without snapping. In the **View** menu, **Snap to a 0.25 m grid** keeps free moves tidy.

Select several lights with Shift-click, or drag a box around them on empty space, and move them together. Arrow keys nudge the selection by 0.1 m (0.5 m with Shift). Ctrl+D duplicates the selection with new channels and addresses, and Delete removes it.

The View and More menus

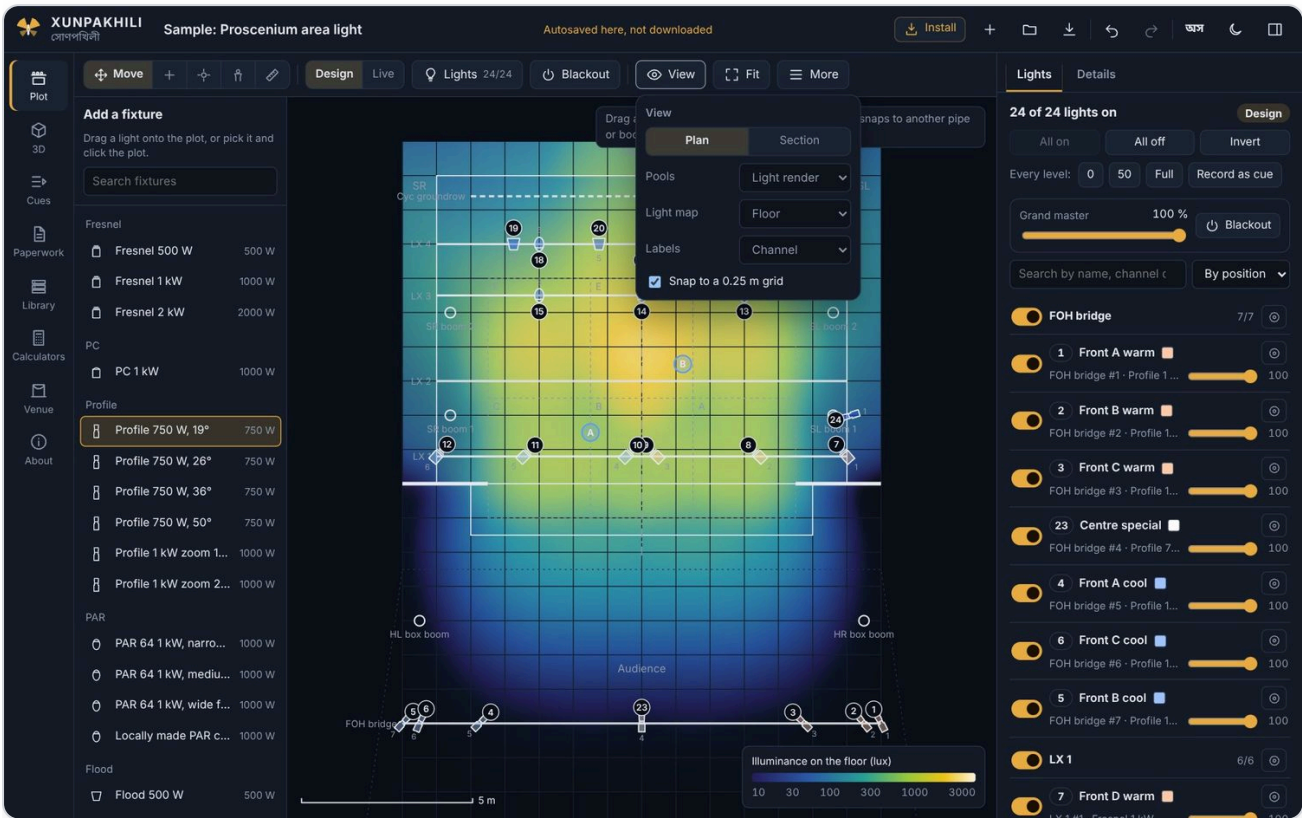


Figure 6.3 The **View** menu, with the light map of the floor switched on.

Setting	What it does
Plan / Section	The stage from above, or a side section through the centre line that shows heights and beam angles.
Pools	Off , Outlines of each beam and field, or Light render : the pools of light in their colours.
Light map	Illuminance in lux on the Floor or on Faces (1.5 m) facing the audience, with a colour scale.
Labels	What each light shows: Channel , Unit , Purpose or None .
Snap to a 0.25 m grid	Free moves land on a 0.25 m grid.

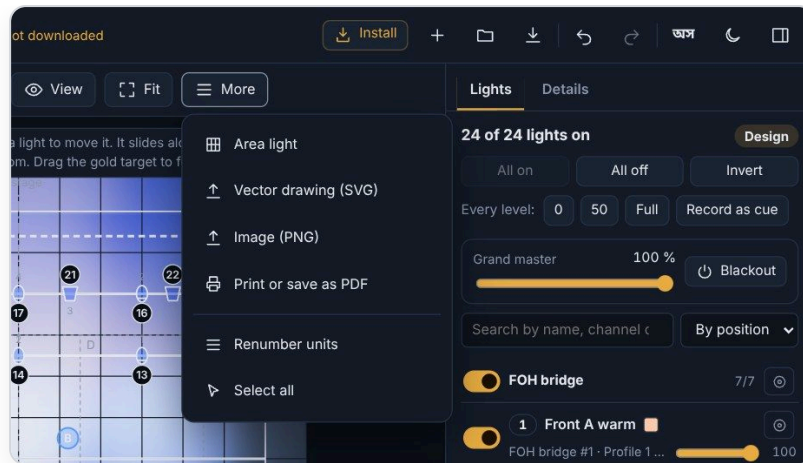


Figure 6.4 The **More** menu.

More holds **Area light** (chapter 9), the exports **Vector drawing (SVG)** and **Image (PNG)**, **Print or save as PDF**, **Renumber units** along each position, and **Select all**. The printed plot carries the title block and an instrument key.

■ Performers and measuring

With **Performer** (key P), click to place a performer and drag to move one. Performers appear in 3D as standing figures and are a quick target for focusing. With **Measure** (key M), click two points to read the distance between them.

CHAPTER 7

07

Focus and reading the light

Point each light where it is needed and read, at once, how far it throws, how wide it spreads and how bright it is.

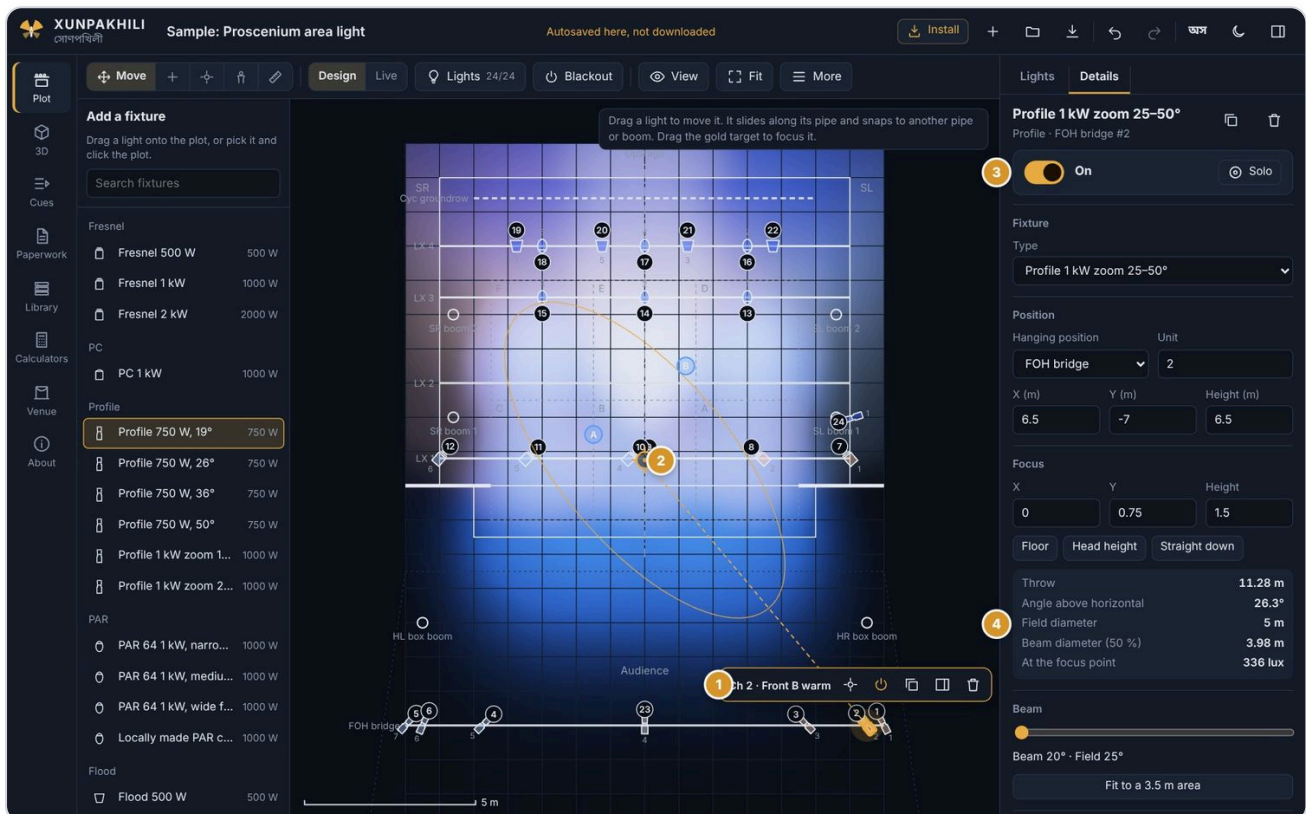


Figure 7.1 A selected light, its focus target and its details.

- 1 Selection bar: channel and name, then focus, on or off, duplicate, details and delete.
- 2 The gold focus target. Drag it to the spot the light should hit.
- 3 Switch this light on or off, or solo it.
- 4 Readouts: throw, angle, field and beam size, and the light at the focus point.

Focusing

Click a light to select it. A gold target appears where it is pointing and its pool is outlined. Drag the target to a new spot: the pool, the readouts and the 3D view follow as you drag, and the target snaps to performers and acting-area centres. With **Focus** (key F) you can also drag from any light to the spot it should light, or select several lights and click one spot to point them all there.

In **Details**, the **Focus** section gives the focus point in numbers, with three quick heights: **Floor**, **Head height** for faces, and **Straight down**. The **Beam** slider zooms a zoom profile between its narrowest and widest angle, and **Fit to a 3.5 m area** picks the angle that covers a typical acting area from where the light hangs.

■ What the readouts mean

Readout	Meaning
Throw	Straight-line distance from the lens to the focus point.
Angle above horizontal	How steeply the light comes down. Around 45° is the classic angle for faces; lower angles reach further upstage but cast long shadows; steeper angles model strongly and deepen the eye sockets.
Field diameter	Width of the whole pool, to the edge where the light falls to about a tenth of the centre.
Beam diameter (50 %)	Width of the bright core, where the light is at least half of the centre.
At the focus point	Illuminance in lux at the focus point, at the current level, with colour filter loss included.

NOTE

The numbers come from a beam model fitted to each fixture's beam angle, field angle and output. Light falls off with the square of the distance and with the slant of the surface. Treat results as close estimates and confirm the important ones with a light meter.

■ Colour, gobo and control

Further down in **Details**: **Design level** and **Colour filter** (or the LED colour for colour-mixing fixtures), a **Gobo** for profiles, then **Channel**, **Address**, **Universe** and **DMX mode**, the **Circuit**, the **Purpose** that names the light in reports, **Accessories** such as barndoors or an iris, and **Notes**.

With several lights selected, **Details** changes to tools for the whole group: give them **Same channel**, number them from a channel (**Number from**), **Patch in order**, set one **Focus height for all**, or spread copies along their position.

CHAPTER 8

08

Switching lights on and off

The **Lights** list controls every light on its own, by group or all at once.

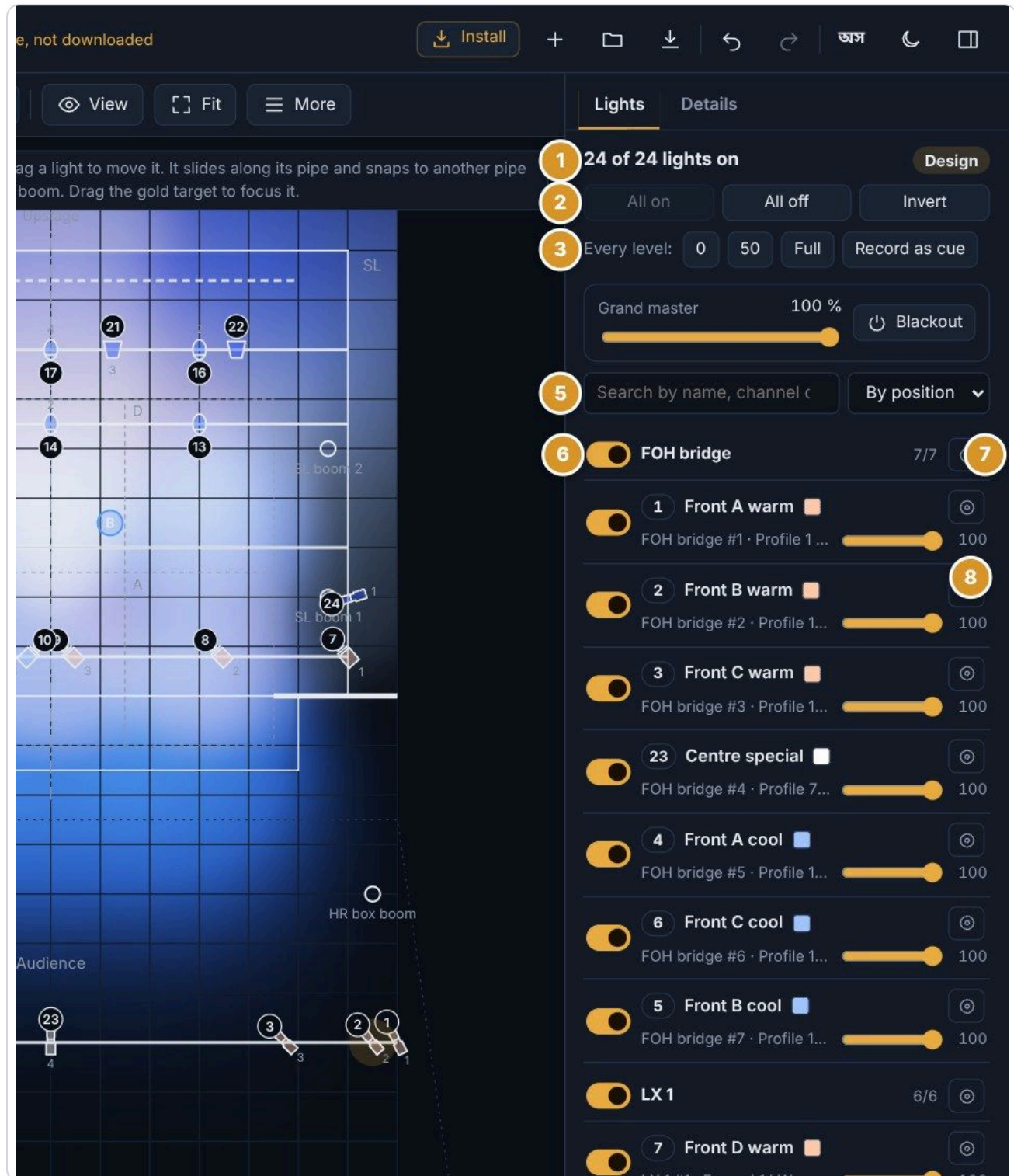


Figure 8.1 The **Lights** tab of the side panel.

- 1 How many lights are on, and whether you see **Design** or **Live** levels.
- 2 **All on**, **All off** and **Invert**.
- 3 **Every level**: 0, 50 or **Full**; **Record as cue** keeps the result as a new cue.
- 4 **Grand master** and **Blackout**.
- 5 Search by name, channel or colour, and group the list **By position**, **By channel**, **By type** or **By colour**.
- 6 Switch a whole group on or off.
- 7 **Solo**: show only this group, or only one light.
- 8 The level. Click the number to switch between 0 and full, or drag the slider.

Open the list with the **Lights** button in the toolbar or the L key. Every light has its own switch and its own level. Switching a light off keeps its level, so switching it on again brings it back exactly as it was.

Control	Use it to
Switch (O key for the selection)	Take a light out of the picture without losing its level or focus.
Solo (S key for the selection)	See one light or one group alone while you focus or check it. Show all ends it.
Grand master	Scale every light at once, for example to check a look at a lower overall level.
Blackout (Shift+B)	Put every light out at once. Press again to bring them back.

A switched-off light stays in the rig and the paperwork but gives no light on the plot, in 3D, on the light map or in the DMX output. Solo, grand master and blackout are not saved with the project.

■ Lights that move together

Lights that share a channel always move together. If the list finds shared channels it shows a warning with the button **Give each light its own channel**, which gives each of those lights the next free channel. Use shared channels on purpose only, for example for a pair of lights that always work as one.

TIP

Design levels are the ones you set on the plot and in this list. **Live** shows what the cue list and the programmer are sending (chapter 12). The badge at the top of the list tells you which one you are looking at.

CHAPTER 9

09

Area light in one step

Cover the acting area evenly with a ready-made wash: divided into areas, hung, focused, zoomed and given channels.

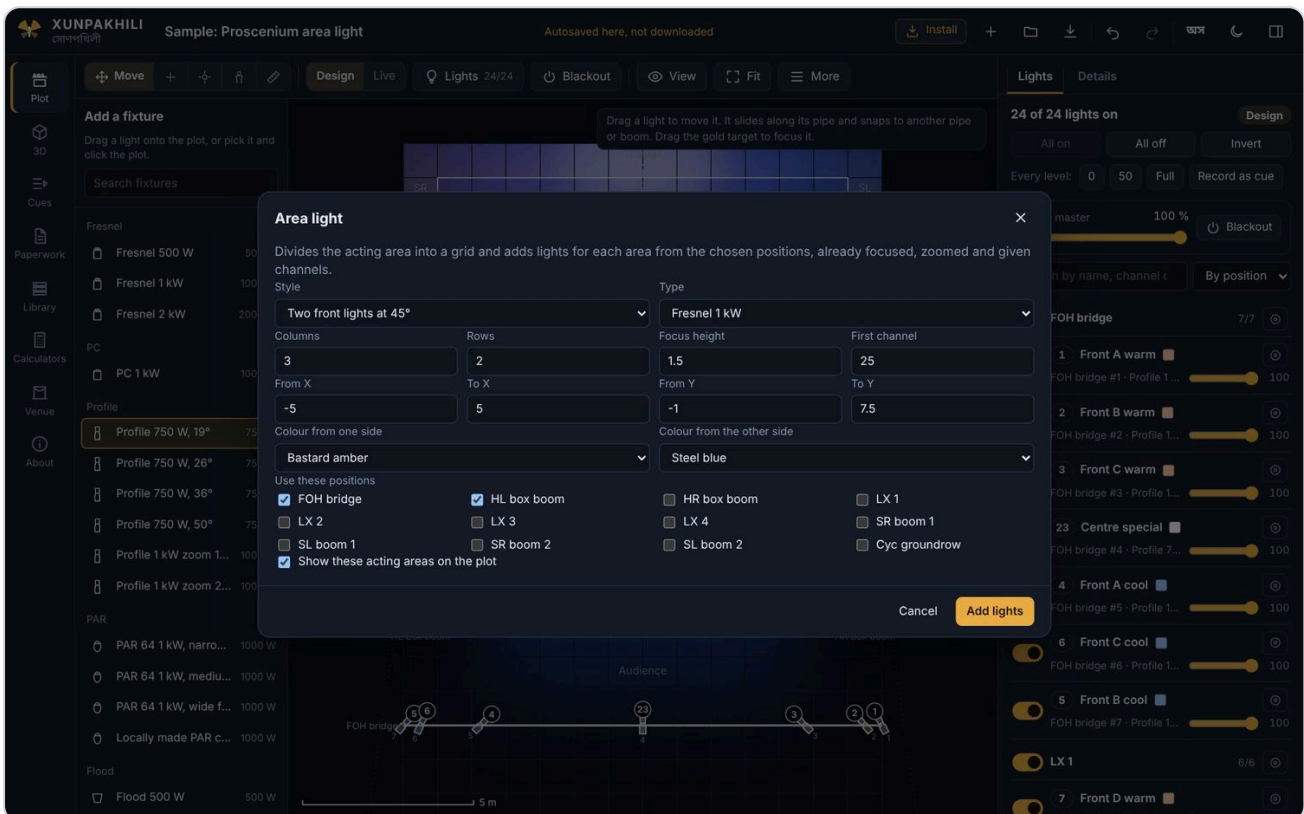


Figure 9.1 The **Area light** window.

Divides the acting area into a grid and adds lights for each area from the chosen positions, already focused, zoomed and given channels.

- 1 Open **More** and choose **Area light**.
- 2 Choose the **Style**: **Two front lights at 45°**, **One front light**, **Back light** or **Top light**, and the fixture to use.
- 3 Set the acting area (**From X**, **To X**, **From Y**, **To Y**), the number of **Rows** and **Columns**, and the **Focus height**: 1.5 m lights faces.
- 4 Choose colour filters for the two sides of a pair, the **First channel**, and the hanging positions to use.
- 5 Press **Add lights**. The lights appear on the plot, focused and zoomed, and a message tells you how many were added.

TIP

Two lights at 45° from the front, one warm and one cool, is the classic way to light faces: the actor can be lit warmer or cooler by mixing the two. Add back light to separate the actor from the background.

CHAPTER 10

10

The 3D view

See the stage as the audience will, with colour, gobos and haze, before a single light is hung.

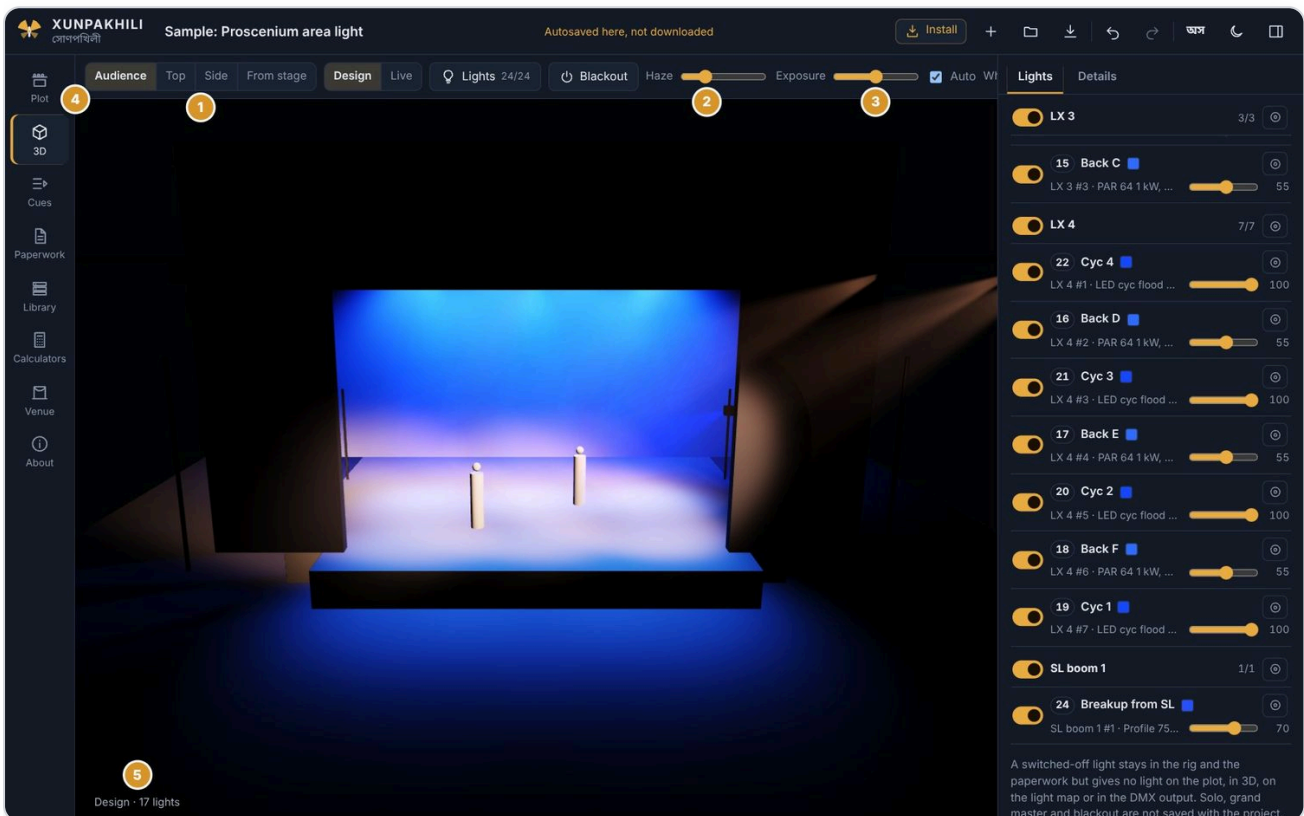


Figure 10.1 The look from the plot chapter, in 3D.

- 1 **Camera**: **Audience**, **Top**, **Side** or **From stage**.
- 2 **Haze**: makes the beams visible in the air.
- 3 **Exposure** and **Auto**.
- 4 The stage. Drag to orbit, scroll or pinch to zoom.
- 5 Status: **Design** or **Live**, and how many lights are lit.

The 3D view uses the same rig, focus, levels and colours as the plot, so every change shows in both. Each light is drawn as a cone of light that falls softly to its field edge, and gobos are projected through it.

Auto sets the brightness from the lit part of the stage, as the eye adapts in a dark theatre. The **White balance** setting balances the picture for warm tungsten or cooler LED light, and **Work light** adds plain light to see the set when no stage lights are on.

Save image downloads the picture.

NOTE

The 3D view does not draw shadows. If a device has no WebGL, the 3D view cannot be shown; the plot, the light map and every report still work.

CHAPTER 11

11

The fixture library

Every lighting fixture you can hang, with its photometric data, and the tools to add your own.

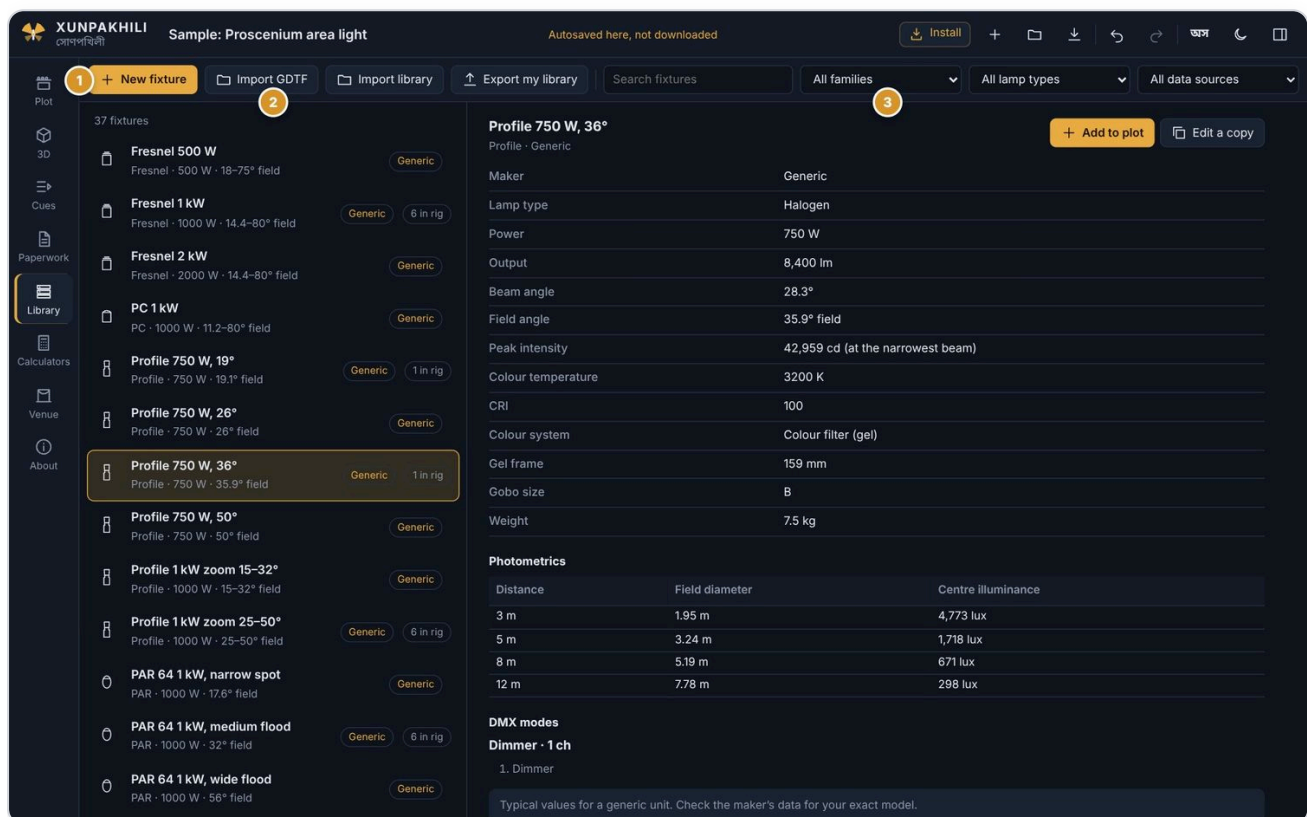


Figure 11.1 The **Library** view.

- 1 **New fixture**, **Import GDTF**, **Import library**, **Export my library**, search and filters.
- 2 The list of fixtures. A badge shows the ones used in this rig.
- 3 The chosen fixture: data, a photometric table and DMX modes.

The built-in library holds generic fixtures from every common family: Fresnels, PCs, profiles and zoom profiles, PARs, floods, cyc lights, LED washes and moving lights. Their values are typical, so you can start planning straight away. The **Photometrics** table gives the beam and field size and the illuminance at several distances.

Your own equipment

- **Import GDTF**: open a GDTF file from the maker or from the GDTF Share library. Name, beam, output, weight, power and DMX modes are read from the file.

- **Edit a copy**: start from a generic fixture and change what differs, for example a locally made PAR.
- **New fixture**: enter measured values yourself.
- **Add to plot**: pick the fixture and click the plot to hang it.

The screenshot shows the 'New fixture' dialog box in the XUNPAKHILI software. The dialog is titled 'New fixture' and has a close button (X) in the top right corner. It contains various input fields for creating a new fixture. The 'Name' field is pre-filled with 'e.g. Fresnel 1 kW'. The 'Model' field is empty. The 'Family' dropdown is set to 'Fresnel', and the 'Lamp type' dropdown is set to 'Halogen'. The 'Colour system' dropdown is set to 'Colour filter (gel)'. The 'Power (W)' field is 1000, 'Output (lm)' is 7000, 'Colour temperature (K)' is 3200, and 'CRI' is 100. The 'Narrowest beam angle (°)' is 10, 'Widest beam angle (°)' is 50, and 'Field to beam ratio' is 1.6. The 'Weight (kg)' is 6, 'Gel frame' is empty, 'Gobo size' is empty, 'Pan range (°)' is 0, and 'Tilt range (°)' is 0. The 'DMX modes' section has a text area with 'Dimmer: dim'. At the bottom, there are 'Cancel' and 'Save fixture' buttons. The background shows a library of fixtures with a sidebar on the left containing icons for Plot, Cues, Paperwork, Library, Calculators, Venue, and About.

Figure 11.2 The fixture builder.

In the fixture builder, give at least a name and one DMX mode. One mode per line: a name, a colon, then channel attributes separated by commas. Attributes: The **Field to beam ratio** sets how far the field spreads beyond the beam: About 1.25 for profiles, 1.6 for PARs, 1.8 for Fresnels.

Your fixtures are kept in this browser's library. **Export my library** saves them to a file for another device or for the rest of the team, and **Import library** brings such a file in. A project always carries its own copy of the fixtures it uses.

NOTE

Generic fixtures carry typical values; confirm them with the maker's data.

CHAPTER 12

Cues, playback and DMX

12

Record the looks of the show as cues, run them with GO and send the result to the lights.

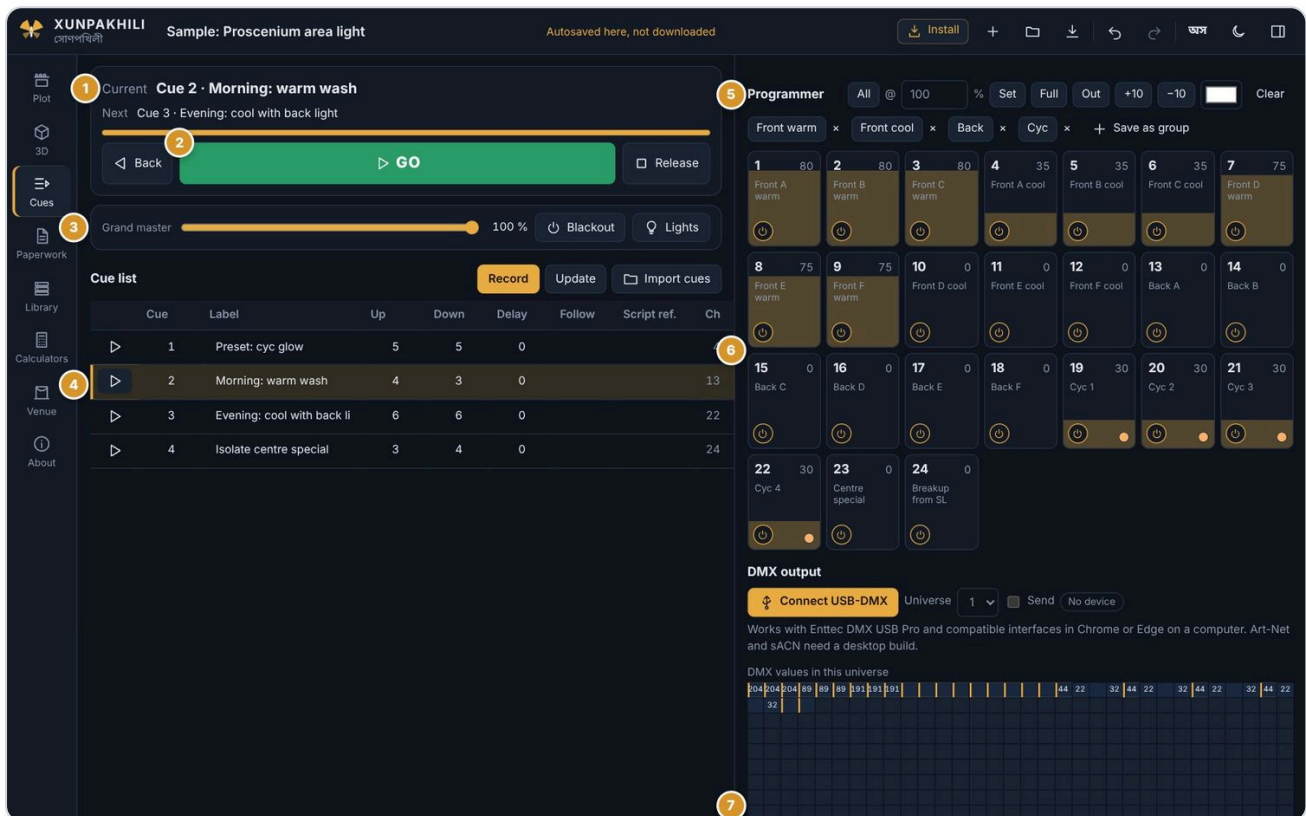


Figure 12.1 The **Cues** view during a fade into cue 2.

- | | |
|---|---|
| <p>1 Current and Next cue, with the progress of the fade.</p> <p>2 GO (Space), Back (B) and Release.</p> <p>3 Grand master, Blackout and Lights.</p> <p>4 Cue list with Record, Update and Import cues.</p> | <p>5 Programmer: select channels and set levels.</p> <p>6 One tile per channel, with its level and an on or off button.</p> <p>7 DMX values in this universe.</p> |
|---|---|

How tracking cues work

A cue stores only the channels that change in it. Every other channel keeps the level it had in the cue before: levels track forward until a later cue changes them. This is how most theatre consoles work, and it keeps cue lists short and easy to edit. The **Ch** column shows how many channels each cue changes.

■ Recording a cue

- 1 Click channel tiles to select them (Shift or Ctrl adds more), or click a group chip such as Front warm.
- 2 Type a level after @ and press **Set**, or use **Full**, **Out**, +10 or -10. For LED fixtures, choose a colour.
- 3 Press **Record**. Store the current look as a new cue after the current one. Programmer levels show in gold until they are recorded.
- 4 Give the cue a label, times and a script reference directly in the table: **Up** and **Down** fade times in seconds, **Delay**, and **Follow** to start the next cue by itself.

Update adds the programmer changes to the current cue. **Save as group** keeps the selected channels as a group chip. **Import cues** reads a cue list from a CSV file: CSV columns: number, label, up, down, delay, follow, script reference, notes. Another way to make a cue is **Record as cue** in the **Lights** list.

■ Running the show

GO (Space) plays the next cue with its times; **Back** (B) returns to the previous one. The play button at the start of a row jumps to that cue. **Release**: Fade everything out over 2 s and clear the programmer. The power button on each tile switches that channel off in the output without changing the cues.

TIP

Switch the plot or the 3D view to **Live** to watch the cue list on stage while you run it.

■ DMX output

- 1 Connect an Enttec DMX USB Pro, or a compatible interface, to the computer and to the dimmers or fixtures.
- 2 Press **Connect USB-DMX** and choose the device in the browser's window.
- 3 Choose the **Universe** and tick **Send**. The status changes from **Connected, not sending** to **Sending**.

Works with Enttec DMX USB Pro and compatible interfaces in Chrome or Edge on a computer. Art-Net and sACN need a desktop build. The grid below shows the value of every address in the universe, so you can check the patch even with no interface connected.

IMPORTANT

Test the output with the lights on a safe level before a performance, and keep the lighting console or dimmer manual control within reach as a backup.

CHAPTER 13

Paperwork

13

Every document the crew needs, made from the rig as it stands, ready to print, save as PDF or export.

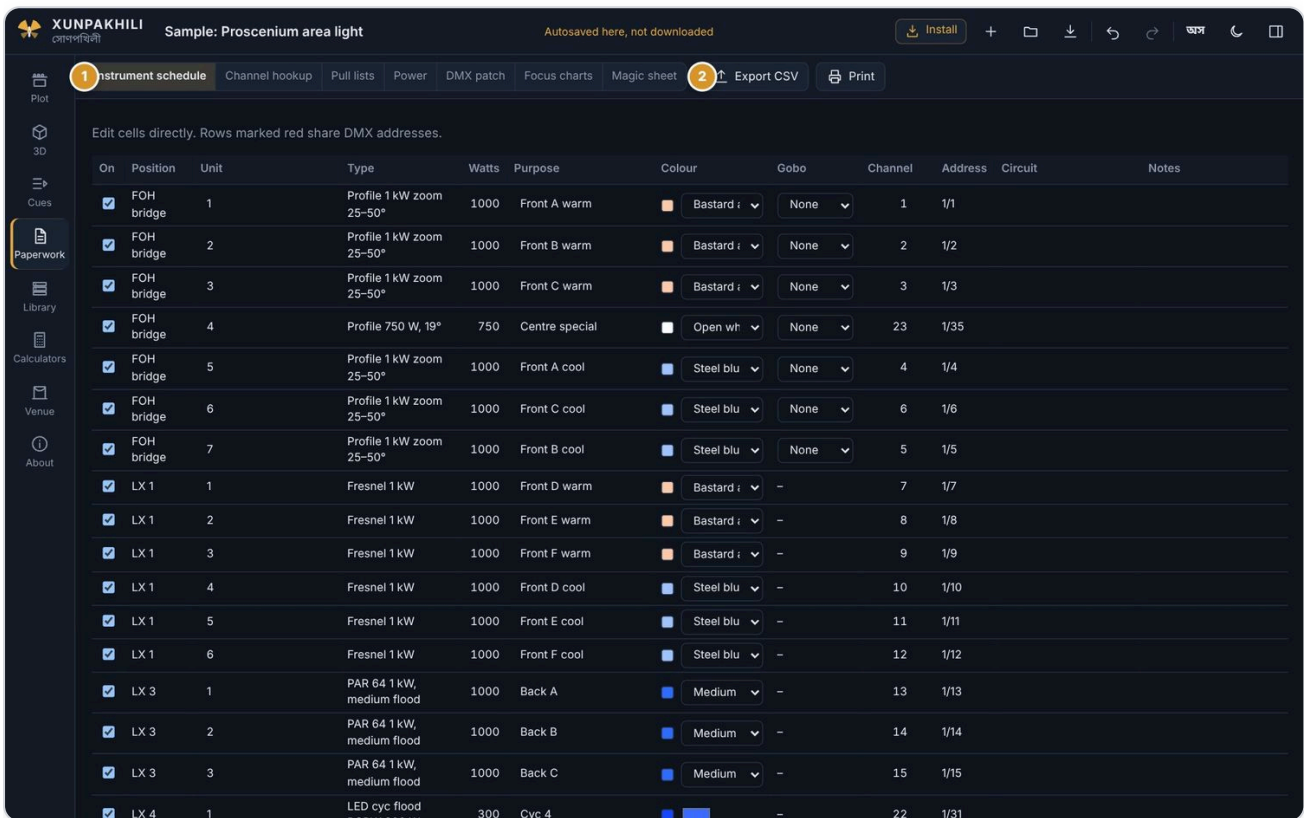


Figure 13.1 The **Instrument schedule**.

- 1 The seven documents. 2 **Export CSV** and **Print**.

Document	What it holds
Instrument schedule	Every instrument by position and unit: type, purpose, channel, address, colour, gobo, circuit, watts and whether it is on. Edit cells directly. Rows marked red share DMX addresses.
Channel hookup	The same information ordered by channel, as the operator thinks of it.
Pull lists	How many units of each type, and the Colour filter pull list and Gobo pull list . Counts are per instrument. Add spares for breakage and fading.
Power	Load per circuit and per phase. Balance phases spreads the circuits over the three phases.

Document	What it holds
DMX patch	DMX addresses by universe, with conflicts marked. Auto patch gives every instrument a free address.
Focus charts	One card per instrument for the focus call. Distances are from the centre line and the setting line.
Magic sheet	Channels placed where they light the stage. Print it for the production desk.

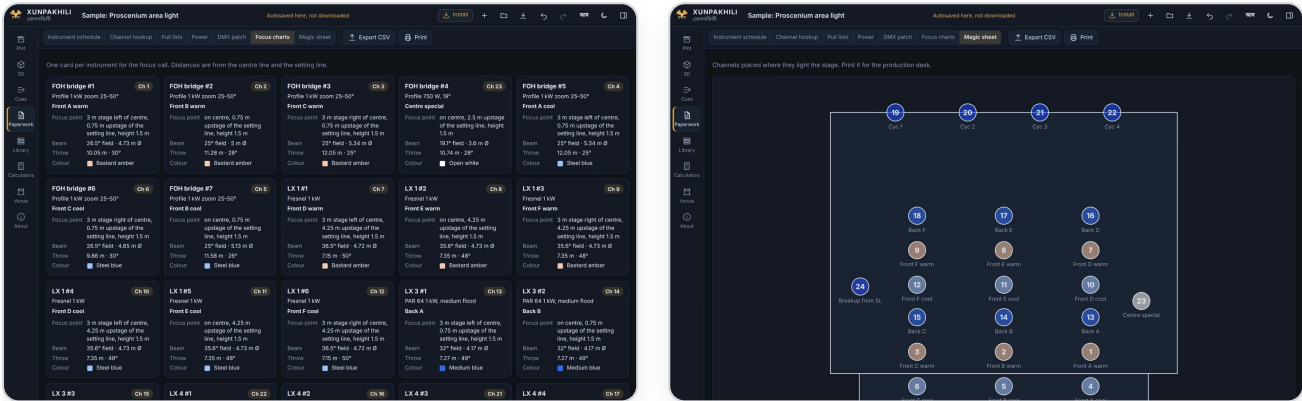


Figure 13.2 Focus charts and the Magic sheet.

Print opens the browser’s print window for the open document. Choose a printer, or “Save as PDF” to make a file to send. **Export CSV** saves the table for a spreadsheet.

CHAPTER 14

14

Calculators

Quick answers to the questions that come up while planning and during the get-in.

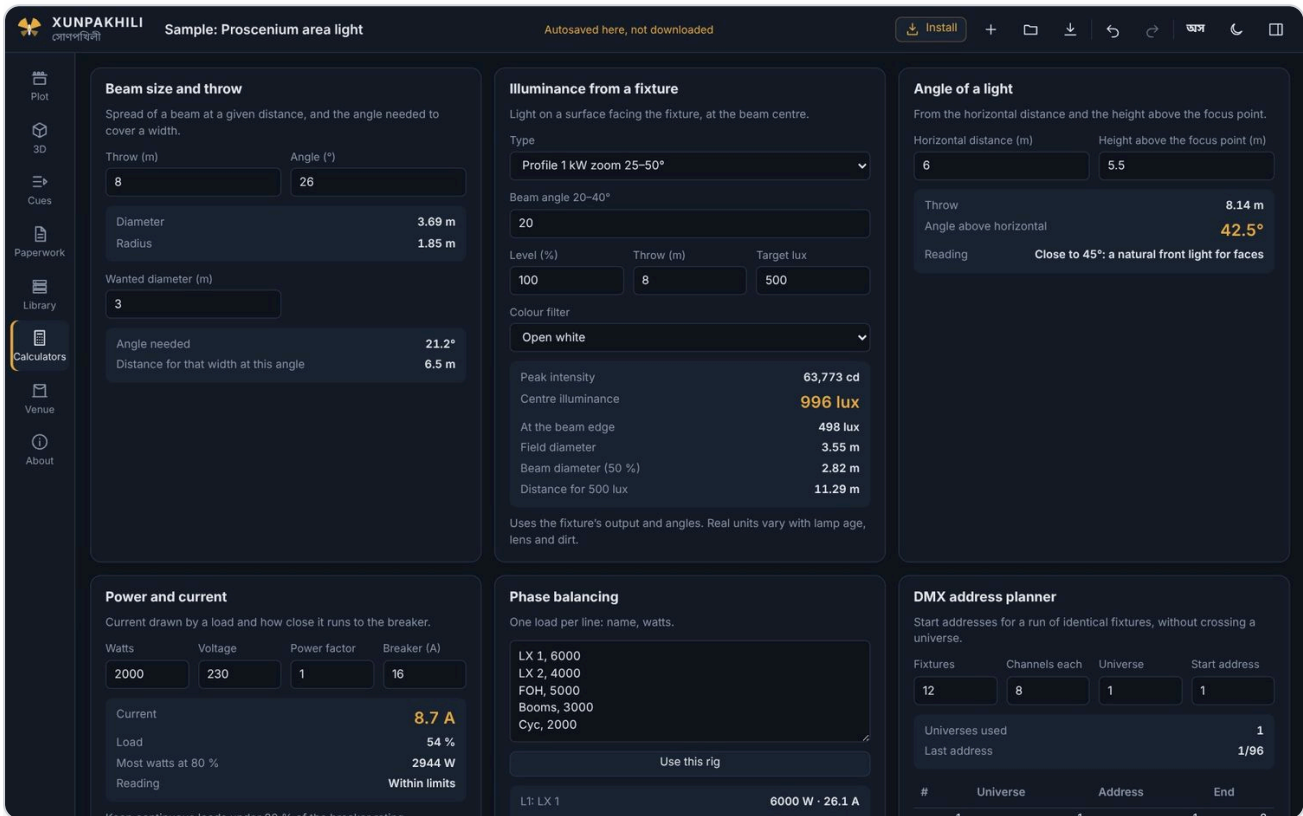


Figure 14.1 The **Calculators** view.

Calculator	What it answers
Beam size and throw	Spread of a beam at a given distance, and the angle needed to cover a width.
Illuminance from a fixture	Light on a surface facing the fixture, at the beam centre.
Inverse square law	How illuminance changes when the throw changes.
Angle of a light	From the horizontal distance and the height above the focus point.
Colour temperature correction	Mired shift between two sources and the nearest correction filter.
Power and current	Current drawn by a load and how close it runs to the breaker. Keep continuous loads under 80 % of the breaker rating.
Phase balancing	One load per line: name, watts.

Calculator	What it answers
Load on a hanging position	Total weight on a pipe, truss or boom against its rating. This is a simple total. Check point loads and the rigging plan with the venue technician.
DMX address planner	Start addresses for a run of identical fixtures, without crossing a universe.

TIP

The inverse square law in practice: double the distance and the illuminance falls to a quarter. Move a light from 5 m to 10 m and 400 lux becomes about 100 lux.

CHAPTER 15

15

Help, About and your data

The Help view, the About window, feedback, keyboard shortcuts and where your data is kept.

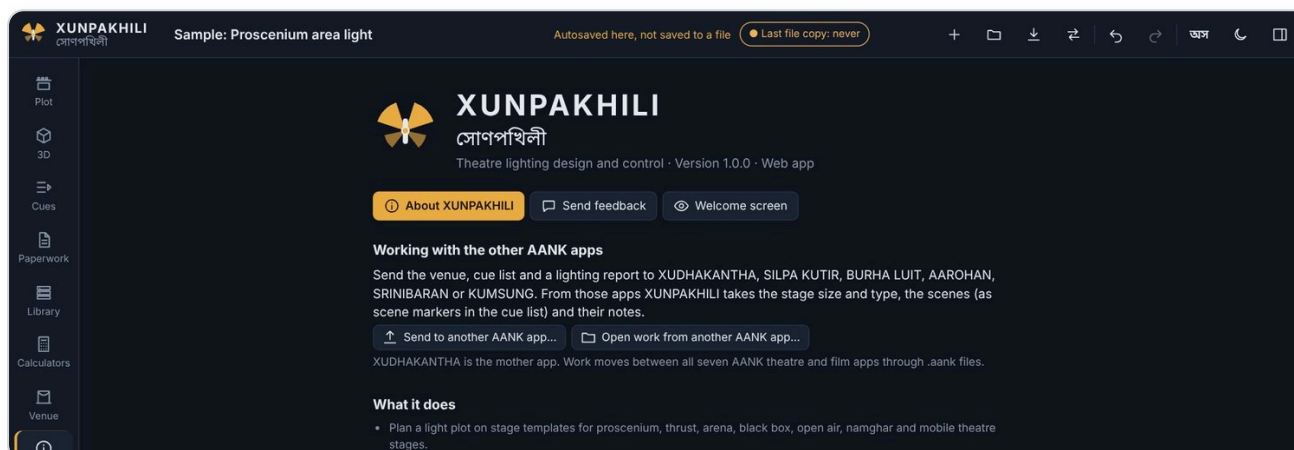


Figure 15.1 The **Help** view.

Help, the last item in the main menu, is XUNPAKHILI's own guide. Its first buttons open the About window (**About XUNPAKHILI**), the feedback form (**Send feedback**) and the welcome screen (**Welcome screen**). Below them are the buttons for the other AANK apps (chapter 4), a summary of what XUNPAKHILI does, the **Manuals** (this manual and the Installation Guide, in English and Assamese), **Saving your work**, notes on the fixture data and the app's limits, the keyboard shortcuts and the privacy note. When XUNPAKHILI can be installed on the device, **Install XUNPAKHILI on this device** appears beside the first buttons.

■ The About window

Click the XUNPAKHILI name at the top left, or **About XUNPAKHILI** in **Help**, to open the About window. It shows the version, the dedication to Rupkonwar Jyoti Prasad Agarwala with a short note on his life and work, and the family of AANK apps. **Saving and backups** tells you whether autosave is working and when you last saved a file copy, and lists the last five automatic backups: press **Restore** to bring one back. The window also holds the credits, the **Licences**, **Show the welcome screen** and **Feedback**.

■ Feedback

Feedback at the foot of the main menu opens a short form for a problem, a mistake in the content, a question or a new idea. Nothing is sent until you press **Send by email**; your mail app then opens a message to mrinal.goswami2026@gmail.com. Your production is never attached.

■ Privacy

XUNPAKHILI keeps everything on your own device. It sends no data to any server, sets no cookies and contains no analytics or tracking. It connects to nothing outside the browser except a USB-DMX interface you choose to connect.

■ Keyboard shortcuts

Keys	Action
V A F P M	Select, Add, Focus, Performer, Measure
0	Fit the plot to the window
L	Open the lights list
O / S	Switch the selection on or off / Solo the selection
Shift+B	Blackout on or off
Delete	Delete the selection
Ctrl+D	Duplicate the selection
Ctrl+A	Select all instruments
Arrow keys	Move the selection by 0.1 m (Shift: 0.5 m)
Esc	Clear the selection
Ctrl+Z / Ctrl+Y	Undo and redo
Ctrl+S / Ctrl+Shift+S	Save the project file / Save as a new file
Ctrl+O	Open project file
Space / B	GO (cue list) / Back one cue (cue list)
Alt+1 to Alt+8	Switch views

NOTE

On a Mac, use Cmd in place of Ctrl.

Questions and answers

Q I switched every light off and the stage is still lit in 3D.

Check whether the view shows **Live** levels: then the cue list is still playing. Press **Release** in **Cues**, or use **Blackout**. If **Work light** is ticked in 3D, untick it.

Q Two lights always change together.

They share a channel. Open **Lights** and press **Give each light its own channel**, or give one of them a new channel in **Details**.

Q The stage looks too dark or too bright in 3D.

Keep **Auto** ticked; it adjusts like the eye does in a dark theatre. Use the **Exposure** slider to make the picture brighter or darker than that. For real numbers, read the **Light map** on the plot.

Q A light will not stay where I drop it.

It is snapping to the nearest pipe or boom. Hold Alt while dragging to place it freely.

Q **Connect USB-DMX** does nothing.

USB-DMX output needs Chrome or Edge on a computer; in other browsers the button cannot be pressed. On iPhone, iPad and Android phones the **Cues** view says instead that USB-DMX output is not available there. On a computer, check the cable and that no other program is using the interface.

Q Can I use Art-Net or sACN?

Art-Net and sACN output need a desktop build; this file sends DMX through USB only.

Q My project is gone after I cleared the browser.

The autosaved copy and the backups were in the browser's data. Open your last saved .xunp file with **Open project file**, and save the project file at the end of every session.

Q I want an earlier version of my work back.

Click the XUNPAKHILI name in the top bar, find **Saving and backups** in the About window and press **Restore** beside the backup you want. The current work is first kept as a backup.

Q How accurate are the lux values?

They are close estimates from the fixture data. Generic fixtures carry typical values; for exact numbers import the maker's GDTF file and check with a light meter on the day.

CHAPTER 17

17

Glossary of key terms

Lighting terms used in XUNPAKHILI and in this manual, in English and Assamese.

Term	Assamese	Meaning
Address	ঠিকনা	The DMX slot where a fixture listens, from 1 to 512 in a universe.
Beam angle	ৰশ্মি-কোণ	The angle within which the light is at least half of its centre value.
Blackout	ব্লেকআউট	Every light out at once.
Boom	বুম	A vertical pipe on a base, usually in the wings, for side light.
Channel	চেনেল	The control number an operator uses for a light or a group of lights.
Colour filter	ৰঙীন ফিল্টাৰ	A coloured gel in front of the lens.
Cue	কিউ	A stored look, played with its own fade times.
Cyc (cyclorama)	চাইক্ল'ৰামা	The plain backcloth at the back of the stage, lit in colour.
Field angle	ক্ষেত্র-কোণ	The angle to the edge where the light falls to about a tenth of its centre value.
Focus point	ফ'কাছ বিন্দু	The spot a light is aimed at.
Fresnel	ফ্রেনেল	A spotlight with a stepped lens and a soft-edged beam.
Gobo	গ'ব'	A metal or glass pattern in a profile that shapes the light.
Grand master	গ্রেণ্ড মাস্টাৰ	One control that scales every light at once.
Hanging position	ওলোমোৱা স্থান	A pipe, boom, truss or floor place where lights are rigged.
Haze	কুঁৱলী	A fine mist that makes beams visible in the air.
Illuminance (lux)	পোহৰৰ মাত্ৰা (লাক্স)	Light falling on a surface: one lumen per square metre.

Term	Assamese	Meaning
Magic sheet	মেজিক শ্বীট	A one-page map of channels placed where they light the stage.
Patch	পেচ	Linking each channel to the DMX addresses of its lights.
Profile	প্র'ফাইল	A spotlight with shutters and a gobo slot, giving a hard-edged, shaped beam.
Programmer	প্র'গ্রামাৰ	Levels being set by hand, not yet recorded in a cue.
Setting line	ছেটিং বেখা	The line across the stage, usually just behind the proscenium, from which depth is measured.
Solo	একক	Showing one light or group alone.
Stage left / right	মঞ্চৰ বাওঁ / সোঁফাল	Left and right as seen by the actor facing the audience.
Throw	নিক্ষেপ-দূৰত্ব	Distance from the lens to the focus point.
Tracking	ট্ৰেকিং	Levels carry forward from cue to cue until a later cue changes them.
Universe	ইউনিভাৰ্ছ	One DMX line of 512 addresses.
Upstage / downstage	মঞ্চৰ পিছফাল / আগফাল	Away from the audience / towards the audience.
Wash	ব্রাশ	Even light over a large area from several lights.



XUNPAKHILI সোণপখিলী

A theatre lighting tool for designers, operators and students, in English and Assamese: the light plot on a real stage, focus and light levels, the look in 3D, a tracking cue list with DMX output, and the paperwork the crew needs. It works on a computer, tablet or phone, without the internet.

aank.org



Created by Dr. Mrinal Jyoti Goswami on behalf of AANK_A Creative Line, Assam, India.

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What's new in this release

XUNPAKHILI 1.0.0 · released on 25 October 2026 at the BBITF 2026 inaugural ceremony, Guwahati

In XUNPAKHILI

- A welcome screen replaces the old cover page (chapter 2). **About** in the main menu is now **Help** (chapter 15): the manuals, keyboard shortcuts and saving tips are there. The dedication, credits, licences and backups are in the **About** window: click the XUNPAKHILI name in the top bar.
- **Save project file** (Ctrl+S) replaces Download project file. In Chrome and Edge on a computer, after the first save it writes back into the same `.xunp` file; Ctrl+Shift+S saves a new file. Other browsers download the file as before.
- **Send to...** gives the other apps the venue (stage type and size), the cue list with times and scenes, the rig and a lighting report that can be printed. **Open from...** turns another app's stage into the nearest venue template, its scenes into **Scene:** markers in the cue list, and keeps its notes under **Notes from other AANK apps** in the Venue view.
- A cue whose label begins with **Scene:** (or দৃশ্য:) marks the start of a scene. Record the cues of that scene after it; the scene names travel with the cue list to the other apps.
- On iPhone, iPad and Android phones the Cues view says that USB-DMX output is not available there, instead of showing a button that cannot work.
- The Assamese interface now carries its own font (Noto Sans Bengali), so Assamese looks the same on every device.
- An Assamese demo production, কাৰেঙৰ লিগিৰী, can be downloaded from the start page.

In every AANK app

- New web address: <https://aank.org/apps/xunpakhili/>. Install it on a phone, tablet or computer; it then works offline and updates itself.
- A welcome screen and an About page with the dedication, credits, licences and your automatic backups.
- Send to... and Open from...: move your work to and from the other AANK apps. XUDHAKANTHA, the mother app, gathers it into one production.
- A feedback form (Help menu and About) to report a problem, a content error, a question or an idea.
- Safer saving: the browser is asked to keep the data permanently, the last five versions are kept as backups, and the Last file copy chip reminds you to save a file.
- Phones: a clear message when a viewer blocks the app, and Add to Home Screen help on iPhone and iPad.

Where this manual shows an older web address, use these: the app <https://aank.org/apps/xunpakhili/> and its page <https://aank.org/digital-tools/xunpakhili/>.