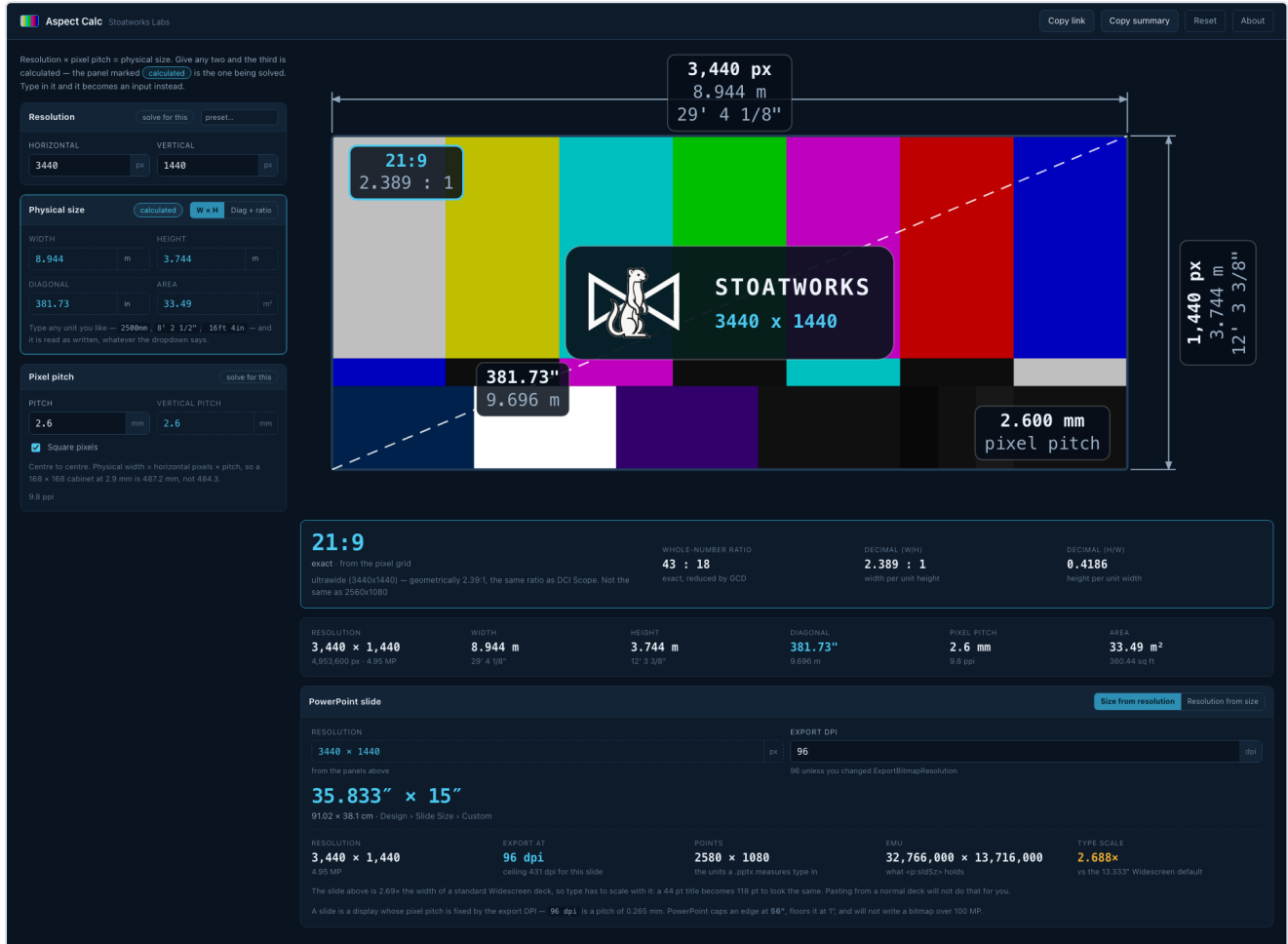


Aspect Calc user guide

Aspect Calc is an **aspect ratio, pixel pitch and display geometry calculator for people who put pictures on walls**. Browser only — no account, no backend, nothing you type leaves the tab.



Resolution × pixel pitch = physical size. Give any two and the third is calculated — the panel marked **calculated** is the one being solved. Type in it and it becomes an input instead.

Resolution solve for this preset...

HORIZONTAL: 3440 px VERTICAL: 1440 px

Physical size calculated **W × H** Diag + ratio

WIDTH: 8.944 m HEIGHT: 3.744 m

DIAGONAL: 381.73 in AREA: 33.49 m²

Type any unit you like — 250mm, 8' 2 1/2", 16ft 4in — and it is read as written, whatever the dropdown says.

Pixel pitch solve for this

PITCH: 2.6 mm VERTICAL PITCH: 2.6 mm

☒ Square pixels

Centre to centre. Physical width = horizontal pixels × pitch, so a 168 × 108 cabinet at 2.9 mm is 487.2 mm, not 484.3. 9.8 ppi

3,440 px
8.944 m
29' 4 1/8"

21:9
2.389 : 1

381.73"
9.696 m

2.600 mm
pixel pitch

1,440 px
3.744 m
12' 3 3/8"

21:9
exact: from the pixel grid
ultrawide (3440x1440) — geometrically 2.38:1, the same ratio as DCI Scope. Not the same as 2560x1080.

WHOLE-NUMBER RATIO: 43 : 18
exact, reduced by GCD

DECIMAL (W/H): 2.389 : 1
width per unit height

DECIMAL (H/W): 0.4186
height per unit width

RESOLUTION	WIDTH	HEIGHT	DIAGONAL	PIXEL PITCH	AREA
3,440 × 1,440	8.944 m	3.744 m	381.73"	2.6 mm	33.49 m²
4,953,600 px · 4.95 MP	29' 4 5/8"	12' 3 3/8"	9.696 m	9.8 ppi	360.64 sq ft

PowerPoint slide **Size from resolution** Resolution from size

RESOLUTION: 3440 × 1440
from the panels above

EXPORT DPI: 96
96 unless you changed ExportBitmapResolution

35.833" × 15"
9102 × 38.1 cm · Design · Slide Size · Custom

RESOLUTION	EXPORT AT	POINTS	EMU	TYPE SCALE
3,440 × 1,440	96 dpi	2580 × 1080	32,766,000 × 13,716,000	2.688x
4.85 MP	ceiling 431 dpi for this slide	the units a .pptx measures type in	what <ps.st05> holds	vs the 13.333" Widescreen default

The slide above is 2.69× the width of a standard Widescreen deck, so type has to scale with it: a 44 pt title becomes 118 pt to look the same. Pasting from a normal deck will not do that for you.

A slide is a display whose pixel pitch is fixed by the export DPI — 96 dpi is a pitch of 0.265 mm. PowerPoint caps an edge at 56", floors it at 1" and will not write a bitmap over 100 MP.

3440 × 1440 at a 2.6 mm pitch: an 8.944 m wall, the ratio named 21:9 with its exact 43:18 beside it, the display drawn to scale with every dimension on it, and the PowerPoint slide size (35.833" × 15") that exports to that resolution.

The whole model is one relation:

$$\text{resolution (px)} \times \text{pixel pitch (mm)} = \text{physical size (mm)}$$

Give it any two and it calculates the third. Diagonal and aspect ratio are two more ways of writing the physical size, so you can also hand it a 55" diagonal and "16:9" and get the width and height back.

Before you rely on this: the arithmetic is pinned by 100 tests, including the ratio-naming rules — which are the only part with judgement in them.

Nothing here has been checked by measuring a real screen, because there is nothing to measure: it is arithmetic over the numbers you type, and it is only as right as they are.

This codebase was created with AI assistance, directed and reviewed by a human author.

What it does

- **Aspect ratio from anything** — a resolution in pixels, a physical size in mm/cm/m, inches or feet-and-inches, or a diagonal and a ratio.
- **Pixel pitch in any direction** — pitch from resolution and size, size from resolution and pitch, or resolution from size and pitch. **Non-square pixels are reported, not averaged away.**
- **Both decimal forms**, `1.778 : 1` and `0.5625`.
- **Diagonal and area**, always, in both measuring systems at once.
- **PowerPoint slide sizes**, both directions.
- **The display drawn to scale**, with colour bars and every dimension on it.

It names the ratio properly

3440×1440 reduces exactly to **43:18**, and nobody has ever ordered a 43:18 monitor — it is called **21:9**. 1366×768 reduces to 683:384, which is not a ratio so much as an accusation; the useful answer is **16:9, 0.05% off**.

Both the trade name and the arithmetic are always shown, and a match that is not exact says so and says by how much. That last part matters: a ratio quoted as exact when it is 0.05% off is how a picture ends up one pixel short across a wall.

Three things from the trade

Pitch is centre-to-centre and every pixel owns a full cell, so physical width is `horizontal pixels × pitch`, **not** `(pixels - 1) × pitch`.

A 168 × 168 px cabinet at 2.9 mm is **487.2 mm** square, not 484.3. Getting this wrong loses one pitch across the whole wall — **invisible in a spreadsheet and very visible when the last cabinet does not fit the frame**.

The two 21:9s are not the same ratio. 2560×1080 is 64:27 (2.370:1); 3440×1440 is 43:18 (2.389:1). They are **0.8% apart** and both are sold as "21:9". The calculator names them both 21:9 and then tells you which one you have.

The colour bars are a picture, not a signal. The pattern is stretched to whatever aspect you are looking at — which is what a real generator does — and the RGB values are the standard 75% bar values but **are not colour-managed. Do not grade against it.**

PowerPoint

Both directions: the slide size for a target resolution, or the resolution a given slide size exports to.

It handles the format's own limits — the **56-inch slide cap**, the 1-inch floor and the 100 MP export ceiling — and gives you points and EMU alongside inches and centimetres, because those are the units the file format actually stores.

If a number looks wrong

A ratio is named 16:9 but the numbers do not reduce to it. That is deliberate — the trade name and the exact reduction are both shown, with the error between them.

A wall comes out one pitch too small. You are using `(pixels - 1) × pitch`. See above.

The pitch differs horizontally and vertically. The pixels are not square, and the tool reports that rather than averaging it away. That is a real property of some LED products.

PowerPoint refuses the slide size. It is past the 56-inch cap. The calculator says so rather than producing a number the format cannot hold.

Aspect Calc · guide updated 2026-09-15 · stoa-works.com/software/aspect-calc/

Latest version of this guide: stoa-works.com/software/aspect-calc/guide/ · Source and issues:

<https://github.com/stoa-works-labs/aspect-calc>