To compare how your printer, your paper and your light respond

Printable step wedge

A strip of 21 grays, from clear to black, to print on transparency film and expose alongside your prints. It shows which range of grays your combination can tell apart and helps you set your exposure time.

This step wedge is for comparing: it isn't a calibrated scale. Its grays are gray percentages in the file, from 0 to 100%, not measured densities: the printer decides how much ink goes into each one. How much light each step blocks depends on your printer, your inks and your film[1,2]: two printers give two different wedges from the same file. Use it to compare tests made with the same materials, not to measure.

How to use it

1 Print page 2 on transparency film

With the same printer, ink and film as your negatives, with no curve, at 100% and without "Fit to page." Measure the check rulers.

2 Expose it like a negative

With the printed side against the paper[2] and under glass, on a strip of the same paper and batch as your prints, and with your usual time.

> ∞ **Safety:** Turn the lamp on with the print already in place, don't look at it, and wear UV-blocking safety glasses (ANSI Z87.1).

3 Wash and let dry

Wash until the yellow is gone from the whites; Ware allows about 20 minutes for the classic formula[3].

4 Read it dry

The shadows regain their blue as they dry, over about 24 hours according to Ware and Jacquard[4,5]. Look for two steps: the last one that gives the deepest blue, the same as step 1, and the first one that comes out fully white.

5 Take the reading to your negative

Enter those two numbers in the Digital Negative Maker (cyanocodex.com/en/tools/digital-negative-maker/): the negative will use only the range of grays your combination can tell apart.

What it measures

Density tells you how much light an area of the negative blocks: each additional 0.30 lets through roughly half as much light[6]. On a printed wedge you don't know those densities, but you see the result: up to which step the blue reaches, and from which one it comes out white.

That range is the one your negative should use. To spread the tones well, a digital negative needs a curve made from a step wedge printed, exposed and measured for each combination of process, paper and printer[7]. The classic formula also has a short range: according to Ware, it only reproduces negatives with a density range of 1 to 1.2 well[3].

The National Science and Media Museum also recommends a step wedge for working out the exposure time[8].

The 21 steps, as they print on page 2:



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

My readings

Date	Printer and film	Light and time	Last full blue	First white

Sources

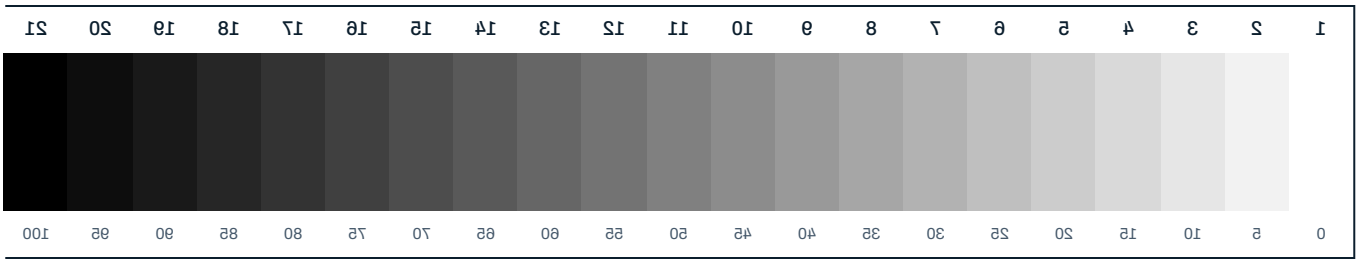
1 Moseley, P. (2013, August 28–September 1). Manipulation of inkjet negative/positive transparencies to manage the image reflectance density, tonal gradation and contrast of photogravure, platinum, carbon transfer and other photographic contact printing processes [Conference paper].
2 Reeder, R. and Anderson, C. Z. (2013). How to make digital negatives [Excerpt].
3 Ware, M. (n.d.). The traditional cyanotype process.
4 Ware, M. (2009). New Cyanotype: Siderotype workshop notes.
5 Jacquard Products. (2021). Cyanotype detailed instructions.
6 International Union of Pure and Applied Chemistry. (2025). Absorbance, A; Decadic absorbance.
7 Reeder, R. and Anderson, C. Z. (2020). Digital negatives with QuadToneRIP: Demystifying QTR for photographers and printmakers.
8 National Science and Media Museum. (2011, February 18). Introduction to the cyanotype process.

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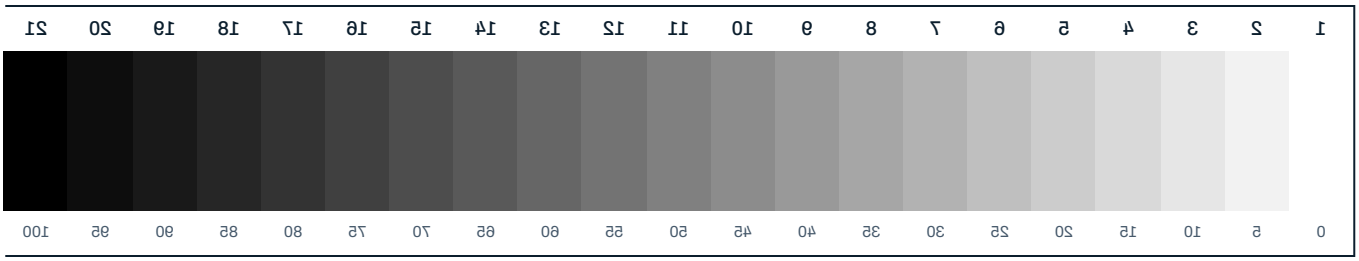
Print this page on transparency film at 100%, without “Fit to page”

21-step wedge, from clear to black

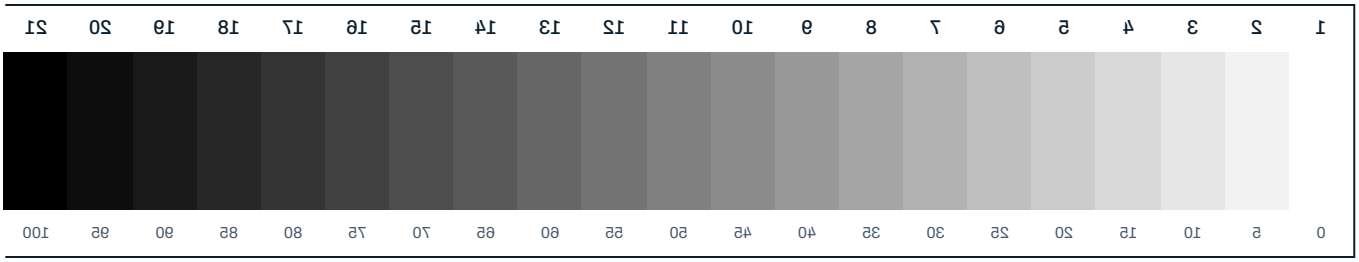
Three identical wedges to cut out and use in different tests. They’re already mirrored: with the printed side against the paper, the numbers come out the right way around on the print. Under each step, its gray percentage in the file (not a density). Print them with no curve and without resizing.



Wedge 1 · 7.03 × 1.3 in (17.85 × 3.3 cm), with the numbers



Wedge 2 · 7.03 × 1.3 in (17.85 × 3.3 cm), with the numbers



Wedge 3 · 7.03 × 1.3 in (17.85 × 3.3 cm), with the numbers



If the rulers don’t measure 50 mm and 2 inches on the film, the printer has changed the size: print it again.

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