Pixels Per Inch (PPI) in DTF Printing

How-To Guide: Impact on Print Quality and Best Practices

Models covered by this document

Model	CobraFlex SKU	Description
All CobraFlex DTF printers	CF-ALL-PRINTERS	Artwork resolution guidance for 13", 24" and 63" CobraFlex DTF printers, film and ink

Document	How-To Guide
Revision	2026-11
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Based on	Pixels Per Inch (PPI) in DTF Printing — CobraFlex Printers how-to guide

Pixels per inch (PPI) — the resolution of your digital artwork — is one of the biggest factors in DTF print quality. Getting it right keeps edges crisp, colors accurate, and designs looking professional on the finished garment. This guide covers recommended PPI settings and how PPI relates to printer DPI.

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Please include your company name, the machine serial number, a description of the problem, and photos or a short video. For printers, also attach a current nozzle check print.

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Why PPI Matters

- **Clarity and detail:** higher PPI preserves fine design elements and small text; low-PPI art looks soft, blurry, or pixelated when printed.
- **Edge definition:** enough PPI keeps outlines clean and smooth; too little produces jagged, stair-stepped edges that can also be more prone to peeling.
- **Color and gradients:** higher PPI blends color transitions smoothly; low resolution can cause visible banding and duller, "blocky" color.

Recommended PPI by Print Size

Print type	Recommended resolution
Small logos and fine detail (3–4")	300 PPI or higher — small or intricate elements need maximum resolution
Standard T-shirt print (10–12" wide)	300 PPI — the industry standard for high-quality apparel graphics
Gang sheets and oversized prints	300 PPI per design where possible; avoid going below about 200 PPI
Very large format (banners, all-over prints)	150–200 PPI is acceptable as a size and file-size trade-off, only for simple designs viewed from a distance

> **General rule:** 300 PPI at final print size is the industry standard, with 200 PPI as a practical minimum when 300 is not possible. Smaller, close-up prints need higher PPI; larger prints viewed from farther away can tolerate somewhat less.

PPI vs. Printer DPI

PPI (pixels per inch) describes the resolution of your digital file. DPI (dots per inch) describes how finely the printer itself lays down ink. The two are related but not interchangeable:

- DTF printers commonly offer modes around 600, 1200, or 1440 DPI. Higher DPI allows finer detail and smoother gradients, at the cost of print speed and ink use.
- A high printer DPI cannot invent detail that is not in the source file. Printing a low-PPI image at high DPI just reproduces the blur more precisely — a "high-resolution print of a low-resolution image."
- Artwork at about 300 PPI gives a 600–1440 DPI printer enough detail to work with. Going much higher (for example, 600 PPI) rarely improves the visible result but does increase file size and RIP processing time.

Common Problems

Problem	What happens
PPI too low	Visible pixelation, blur, and jagged edges; fine text or thin lines may print poorly or disappear. Gradients can band into stripes, and solid colors look blocky or flat. Simply changing a file's DPI setting in software (for example, from 72 to 300) without adding real pixels does not fix a low-resolution image — the printer will still output a blurry result. The only real fix is higher-resolution source art or vector graphics.
PPI excessively high	Does not hurt print quality directly, but creates very large files that slow RIP processing and printer throughput. Beyond roughly 300–400 PPI, extra resolution is rarely visible on the finished garment.

Bottom Line

Aim for about **300 PPI at final print size** for most DTF jobs. This gives clean edges, accurate color, and consistent quality without unnecessarily large files or slow processing. When in doubt, choose higher resolution — it is much easier to scale a large image down than to fix one that is too low-resolution.

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