

OpenType with CFF outlines

Every face on this page came from an .otf file, and the document is PDF/A-3u - which requires every one of them to be embedded. Until this worked, a house face in that format could not be used at all.

Two roads through the same package

The difference is in the descendant font and in which FontFile entry the program lands in. Everything before that - reading the cmap, measuring, encoding, the ToUnicode map - is the same code for both.

	TrueType outlines	CFF outlines
Font program	/FontFile2	/FontFile3, /Subtype /OpenType
Descendant	/CIDFontType2	/CIDFontType0
CID to glyph	a CIDToGIDMap stream	the font's own, no map needed
Subsetting	yes, through loca and glyf	no - the face goes in whole
Subset prefix	yes, six letters	no - nothing was subsetted

What the whole face costs

Read off the files themselves - what is on disk, before anything is embedded. The CFF form goes into the document whole, so its column is also what it costs there; the TrueType form is subsetting, so a heading of a few words costs a fraction of the figure below. That is the argument for the TrueType form where a face sets one line and nothing else.

Face	the .otf file	the .ttf file
NimbusSans-Regular	82264 bytes	181776 bytes
NimbusRoman-Regular	98200 bytes	203180 bytes

The same face, from either format

Nimbus Sans is in this tree as .otf and as .ttf. The widths come from hmtx either way, but through two different files with different units per em - so agreement is worth measuring rather than assuming.

Rechnung	CFF: 16.0796 mm	TrueType: 16.0834 mm	difference: 0.0038 mm
Hamburgefonstiv	CFF: 26.6629 mm	TrueType: 26.6668 mm	difference: 0.0038 mm
AVATAR 12,34 EUR	CFF: 32.3497 mm	TrueType: 32.3512 mm	difference: 0.0014 mm

The remainder is rounding, and it grows with the line: one file carries 1000 units per em and the other 2048, so every glyph rounds by up to half a unit.

The faces

Nimbus Roman, from NimbusRoman-Regular.otf

Nimbus Sans, from NimbusSans-Regular.otf

Nimbus Sans Bold, from NimbusSans-Bold.otf