

Greek LICR definitions with XeTeX/LuaTeX

Typesetting Greek texts requires a font containing Greek letters. With the XeTeX or LuaTeX engines, the user should ensure that the chosen font contains the required glyphs (the default Latin Modern fonts miss them). Examples for suitable fonts are the “Deja Vu” or the “Linux Libertine” OpenType fonts.

1 LICR input

The example from `usage.tex` in *babel-greek* input using the LICR macros:

Τί φήις; Ἰδὼν ἐνθῆδε παῖδ' ἐλευθέραν
τάς πλησίον Νύμφας στεφανοῦσαν, Σώστρατε,
ἔρων ἀπῆλθες εὐθύς;

1.1 Greek alphabet

Greek letters via LICR macros:

Α Β Γ Δ Ε Ζ Η Θ Ι Κ Λ Μ Ν Ξ Ο Π Ρ Σ Τ Υ Φ Χ Ψ Ω

α β γ δ ε ζ η θ ι κ λ μ ν ξ ο π ρ σ τ υ φ χ ψ ω

The small sigma is set with a different glyph if it ends a word:

σ `textsigma`

ς `textfinalsigma` or `textvarsigma`

In the Latin transcription, the letter ‘s’ stands for `\textautosigma` which automatically chooses the glyph according to the position. However, `autosigma` is not supported with XeTeX/LuaTeX.

1.2 Additional Greek symbols

Ϸ `textkoppa`

Ϻ `textqoppa` (archaic koppa)

ϻ `textQoppa` (archaic Koppa)

Ϸ `textstigma`

Ϻ `textStigma` (Sigma-Tau-Ligature in CB-fonts)¹

ϳ `textsampi`

ϴ `textSampi`

Ϸ `textdigamma`

Ϻ `textDigamma`

ϳ `textnumeralsigngreek` (Dexia keraia)

ϴ `textnumeralsignlowergreek` (Aristeri keraia)

¹the name “stigma” originally applied to a medieval sigma-tau ligature, whose shape was confusably similar to the cursive digamma

TeX’s concept of “standard” vs. “variant” symbols does not map to the distinction between “Greek Letter ...” vs. “Greek Symbol ...” in the Unicode standard:

math symbol	Unicode «letter»	var math symbol	Unicode «symbol»
ϵ	ε	ε	ε
κ	κ	<i>missing</i>	κ
π	π	ϖ	ω
ρ	ρ	ϱ	ϙ
θ	θ	ϑ	Ϙ
ϕ	φ	φ	ϕ

Greek diacritics can be input by named macro or symbol macro. Named macros are defined in xunicode-greek.sty for \LastDeclaredEncoding (here EU1).

Composite commands for combined diacritics are defined in “greek-fontenc.def”, also for the `\LastDeclaredEncoding`. There are composite definitions for all pre-composed characters, the fallback definition uses composite characters:

Problems:

Composite diacritics defined with *xunicode*'s `\DeclareEncodedCompositeAccents` drop one of the constituents.

I I X X I I X X I I X X
 I I X X I I X X I I X X
 I I X X I I X X I I X X

²When copy/pasting generated output from the “evince” PDF viewer, the COMBINING GREEK YPOGEGRAMMENI is merged with the base character. A capital letter + combining ypogegrammeni results in GREEK CAPITAL LETTER ... WITH [.. AND] PROSGEGRAMMENI). This indicates that for a suffix (in contrast to post-fix) *prosgegrammeni*, the combining *ypogegrammeni* could be used together with a capital base letter.

Both, the standard LaTeX and the “xunicode” composite mechanism require the first part of a composite definition to be a macro requiring one argument. I.e. selecting pre-defined characters with sub-iota requires prefix `\accypogegrammeni{}` and `\accprosgegrammeni` accent macros.

Greek symbols from the Greek and Coptic Unicode block are fully supported:

Characters from the Greek Extended Unicode block are only partially supported (multi-accented characters with sub-iota currently use a combining prosgegrammeni or ypoge-grammeni character).

[illegible]

