

BBOLDX—an extension of BBOLD

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In the 1990's, Alan Jeffrey developed an extensive Blackboard Bold font with weight a good match to Computer Modern, with upper and lower case Latin and Greek letters as well as punctuation and a number of symbols. The font was the property of Y&Y, and, after their dissolution, the copyright was gifted to TUG in 2007, with the freest license imaginable. This package extends the original by adding a couple of glyphs and, more important, adding two new weights. Where the original stem widths were 40 units, the additions have stem widths of 56 units and 90 units respectively. For a comparison, here are the three, labelled Thin, Regular and Bold respectively.

Thin: $\Sigma\beta\mathbb{H}\mathbf{k}1234567890$

Regular: $\Sigma\beta\mathbb{H}\mathbf{k}1234567890$

Bold: $\Sigma\beta\mathbb{H}\mathbf{k}1234567890$

FONT TABLE FOR BBOLDX-REGULAR:

	ó	í	î	ï	û	ü	ö	ÿ	
ó0x	Ɔ ₀	Δ ₁	Θ ₂	Λ ₃	Ξ ₄	Π ₅	Σ ₆	Υ ₇	"0x
ó1x	Φ ₈	Ψ ₉	Ω ₁₀	α ₁₁	β ₁₂	δ ₁₃	δ ₁₄	ε ₁₅	
ó2x	ζ ₁₆	η ₁₇	θ ₁₈	ι ₁₉	κ ₂₀	λ ₂₁	μ ₂₂	ν ₂₃	"1x
ó3x	ξ ₂₄	π ₂₅	ρ ₂₆	σ ₂₇	τ ₂₈	υ ₂₉	φ ₃₀	χ ₃₁	
ó4x	ψ ₃₂	! ₃₃	" ₃₄	# ₃₅	\$ ₃₆	% ₃₇	& ₃₈	' ₃₉	"2x
ó5x	(₄₀) ₄₁	* ₄₂	+ ₄₃	9 ₄₄	- ₄₅	• ₄₆	/ ₄₇	
ó6x	0 ₄₈	1 ₄₉	2 ₅₀	3 ₅₁	4 ₅₂	5 ₅₃	6 ₅₄	7 ₅₅	"3x
ó7x	8 ₅₆	9 ₅₇	: ₅₈	; ₅₉	< ₆₀	• ₆₁	> ₆₂	? ₆₃	
í0x	Ɔ ₆₄	Δ ₆₅	Θ ₆₆	Λ ₆₇	Ξ ₆₈	Π ₆₉	Σ ₇₀	Υ ₇₁	"4x
í1x	Φ ₇₂	Ψ ₇₃	Ω ₇₄	α ₇₅	β ₇₆	δ ₇₇	δ ₇₈	ε ₇₉	
í2x	ζ ₈₀	η ₈₁	θ ₈₂	ι ₈₃	κ ₈₄	λ ₈₅	μ ₈₆	ν ₈₇	"5x
í3x	ξ ₈₈	π ₈₉	ρ ₉₀	σ ₉₁	τ ₉₂	υ ₉₃	φ ₉₄	χ ₉₅	
í4x	ψ ₉₆	! ₉₇	" ₉₈	# ₉₉	\$ ₁₀₀	% ₁₀₁	& ₁₀₂	' ₁₀₃	"6x
í5x	(₁₀₄) ₁₀₅	* ₁₀₆	+ ₁₀₇	9 ₁₀₈	- ₁₀₉	• ₁₁₀	/ ₁₁₁	
í6x	0 ₁₁₂	1 ₁₁₃	2 ₁₁₄	3 ₁₁₅	4 ₁₁₆	5 ₁₁₇	6 ₁₁₈	7 ₁₁₉	"7x
í7x	8 ₁₂₀	9 ₁₂₁	: ₁₂₂	; ₁₂₃	< ₁₂₄	• ₁₂₅	> ₁₂₆	? ₁₂₇	
î0x	Ɔ ₁₂₈	Δ ₁₂₉	130	131	132	133	134	135	"8x
î1x	136	137	138	139	140	141	142	143	
	"8	"9	"A	"B	"C	"D	"E	"F	

There are two ways these may be used.

1: LOAD THE `bboldx` PACKAGE.

To do this, place one of the lines

```
\usepackage{bboldx} % for Regular and Bold weights
\usepackage[light]{bboldx} % for Thin and Regular weights
```

in your document preamble following any other lines that may load math alphabets. This package creates two basic commands, `\bbxfamily` and `\bbbxfamily` to identify the fonts that should be considered regular and bold, and uses them to define macros `\textbb` and `\textbbb` by which you may access any character, though not necessarily by convenient means as the fonts do not completely follow any standard encoding. Nonetheless, it does understand Roman letters and digits, as well as some punctuation and symbols—(A)b[1],.,!<>-. Other characters may be accessed by consulting the above table for the position of the character. For example, lowercase psi is in slot 32 decimal="20 (HEX), so `\textbb{\char32}` or `\textbb{\char"20}` yields Ψ . As a convenience, the package defines (as math symbols only) the following macros for use with the Greek letters as well as `dotlessi` and `dotlessj`.

```
\imathbb, \jmathbb
\Gammabb ... \Omegabb
\alphabb ... \omegabb
```

The package also [re]defines the macros `\mathbb` and `\mathbbb` to point the same glyphs as `\textbb` and `\textbbb`, but for use in math mode.

There is also a `scaled` (or `scale`) option you may use to adjust the relative size of the `bboldx` glyphs. For example,

```
\usepackage[scale=.98]{bboldx}
```

will lead to a 2% reduction of the size of the rendered `bboldx` characters.

2: THROUGH THE `mathalpha` PACKAGE

Place one of the lines

```
\usepackage[bb=bboldx]{mathalpha}
\usepackage[bb=bboldx-light]{mathalpha}
```

in your document preamble following any other lines that may load math alphabets. These have the same effect as loading the `bboldx` package described above. For example,

```
\usepackage[bb=bboldx-light,bbscaled=.97]{mathalpha}
```

has the same effect as

```
\usepackage[light,scale=.97]{bboldx}
```

(`Mathalpha` does of course allow you to set many other math alphabet options.)