Pennstander fonts (*experimental*)
User's Guide for LaTeX (v0.4)

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1 What is Pennstander ?

Pennstander is a set of OpenType text and math fonts developed by Julius Ross, see github.com/juliusross1 for more information.

Original font is from Tyler Finck, see this website for more information:

https://etceteratype.co/pages/grandstander.

This package is based on v0.4 version of fonts.

The text and the math fonts are licensed under the SIL Open Font License, Version 1.1.

They require LuaTeX or XeTeX as engine and the unicode-math package[1], if math fonts are required or just the fontspec package[2] otherwise.

A *variable*[3] version of the font, with optical sizing, is available.

[1] Please read the documentation unicode-math.pdf.
[2] Please read the documentation fontspec.pdf.
[3] Please read the article https://github.com/juliusross1/Pennstander/tree/main/docs.

2 Usage

2.1 Loading text fonts and math fonts

Several weights are available, for text and/or math version:

thin / ExtraLight / Light / Regular / Medium / **SemiBold** / **Bold** / **ExtraBold** / **Black**

- $\sum\limits_{n=1}^{+\infty} \frac{1}{n^2} = \frac{\pi^2}{6}$
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Files `Pennstander(math)-<weight>.fontspec` are provided to ensure that *Italic*, **Bold**, ***BoldItalic*** and *(fake)Slanted* variants are properly loaded.

2.2 Optical sizing

`otf` and `ttf` versions of Pennstander are provided:

- one `PennStanderVF.ttf` file, which provides *optical sizing* (`opsz`);
- several `Pennstander-<weight>-<shape>.otf` files.

With `opsz` loading, so with optical sizing features, it's possible that, with a size changing (`large`, `small`, `tiny`,...), the rendering may not be optimal, in which case a `setmainfont` may be necessary.

Therefore, loading `otf` fonts has been chosen as the default behavior.

2.3 Basic Call

A basic call for Pennstander text and math fonts could be:

```
\usepackage{pennstander-otf}
```

It loads:

- `Pennstander-Regular` as main font (without `opsz` version);
- `PennstanderMath-Regular` as math font.

It defines `\eff` for *florin math* f.

For `optical sizing` features, load Pennstander with `opsz` option:

```
\usepackage[opsz]{pennstander-otf}
```

2.4 First samples

Theorem 1 (Residue Theorem). Let f be analytic in the region G except for the isolated singularities $a_1, a_2, \ldots, a_m$. If γ is a closed rectifiable curve in G which does not pass through any of the points a_k and if $\gamma \approx 0$ in G then

$$\frac{1}{2\pi i}\int_\gamma f = \sum_{k=1}^{m} n(\gamma; a_k)\mathrm{Res}(f; a_k).$$

Theorem 2 (Maximum Modulus). *Let G be a bounded open set in $\mathbb{C}$ and suppose that f is a continuous function on G^- which is analytic in G. Then*

$$\max\{|f(z)| : z \in G^-\} = \max\{|f(z)| : z \in \partial G\}.$$

$$q = 4L\sin\left(\frac{\theta}{2}\right)\sqrt{\pi\epsilon_0 mg\tan\left(\frac{\theta}{2}\right)}$$

2.5 Options

Options can be given within the package:

- `Weight=...`

  `Thin/ExtraLight/Light/Regular/Medium/SemiBold/Bold/ExtraBold/Black`;
- or individual `WeightT=...,WeightM=...`
- the boolean `opsz` for loading pennstander with variable VF `.ttf` version;
- the boolean `no-text` for not loading pennstander as main font;
- the boolean `no-math` for not loading pennstander as math font;
- the boolean `no-macros` for not loading internal macros;
- the boolean `onlyconfig` for just loading `.fontspec` files (def. `false`);

  with activated, `no-text=true`, `no-math=true` and `no-macros=true`
- the boolean `altfour` for alternate version of 4;
- the boolean `frenchseven` for alternate version of 7 (with bar);
- `math-style=...` for unicode-math option;
- `bold-style=...` for unicode-math option;
- `StylisticSet=...` or `StylisticSetT=...,StylisticSetM=...`;
- `RawFeature=...` or `RawFeatureT=...,RawFeatureM=...`;
- `Scale=...` or `ScaleT=...,ScaleM=...`.

  `Scale=<value>`: global scaling factor applied to both text and math fonts

  `ScaleT=<value>`: scaling factor for text font only (numeric value)

  `ScaleM=<value>`: scaling factor for math font only (numeric value or `MatchLowercase...`)

2.6 Manual loading

It's also possible to load text and/or math fonts with `\setmainfont` and/or `\setmathfont`, thanks to `fontspec` files for example.

```
%with otf version
\usepackage{fontspec}
\usepackage{unicode-math}
\setmainfont{Pennstander-<weight>}[options]
\setmathfont{PennstanderMath-<weight>}[options]

%with ttf/opsz version
\usepackage[onlyconfig]{pennstander-otf}
\setmainfont{Pennstander-<weight>-opsz}[options]
\setmathfont{PennstanderMath-<weight>}[options]
```

2.7 Internal macros

By default, the packages load internal macros for *fontfamily*.

All macros are defined with `[Scale=MatchLowercase]`.

```
%fontfamily
\newfontfamily\pennstanderthin
\newfontfamily\pennstanderextralight
\newfontfamily\pennstanderlight
\newfontfamily\pennstander
\newfontfamily\pennstandermedium
\newfontfamily\pennstandersemibold
\newfontfamily\pennstanderbold
\newfontfamily\pennstanderextrabold
\newfontfamily\pennstanderblack

%mathfont
\setmathfontface\pennstandermaththin
\setmathfontface\pennstandermathextralight
\setmathfontface\pennstandermathlight
\setmathfontface\pennstandermath
\setmathfontface\pennstandermathmedium
\setmathfontface\pennstandermathsemibold
\setmathfontface\pennstandermathbold
\setmathfontface\pennstandermathextrabold
```

3 Openfeatures

3.1 For text font

Extra openfeatures for text font available are (it is possible that not all options are compatible with fontspec):

- `aalt`: Access All Alternatives
- `ccmp`: Glyph Composition/Decomposition
- `locl`: Localized Forms
- `sups`: Superscript
- `numr`: Numerators
- `dnom`: Denominators
- `frac`: Fractions
- `ordn`: Ordinals
- `pnum`: Proportional Figures
- `tnum`: Tabular Figures
- `case`: Case-Sensitive Forms
- `dlig`: Discretionary Ligatures
- `liga`: Standard Ligatures
- `zero`: Slashed Zero
- `cpsp`: Capital Spacing
- `ss01`: Alternate a,g,I
- `ss02`: Alternate A,M,N,Q,V,W,Z,v,z
- `ss03`: Alternate 4
- `ss04`: Alternate l,t
- `ss06`: Alternate ampersand
- `ss07`: Alternate 7

3.2 For math font

Extra openfeatures for math font available are (it is possible that not all options are compatible with fontspec):

- `aalt`: Access All Alternatives
- `dtls`: Dotless Forms
- `zero`: Slashed Zero
- `frac`: Fractions
- `ss01`: Alternate a,g,I,Iota
- `ss02`: Alternate A,M,N,Q,V,W,Z,v,z,Alpha,Mu,Rho,Zeta
- `ss03`: Alternate 4
- `ss04`: Alternate l,t
- `ss05`: Simplified Fraktur A,K,L,X,Y,Z,x,y
- `ss07`: Alternate 7
- `ssty`: Math Script Style Alternatives
- `cv01`: Alternate a,g,I
- `cv10`: Alternate numerals
- `cv20`: Alternate Fences
- `cv21`: Alternate Fences
- `cv30`: Alternate Integrals (without serif)
- `cv31`: Alternate Integrals (serif)
- `cv32`: Alternate Integrals (all)
- `zero`: Alternate zero

3.3 Unicode Private Use Area

Glyphs assigned to Unicode Private Use Area:

- Double-struck uppercase Greek letters: U+E1002–U+E1008
- Fraction Rule: U+E000
- Radical Rule: U+E001

4 List of glyphs

4.1 Text version

Table 1: Pennstander-Regular

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Basic Latin																
U+0000–000F		–	–	–	–	–	–	–	–	–	–	–	–		–	–
U+0020–002F		!	”	#	$	%	&	’	(	)	*	+	,	-	.	/
U+0030–003F	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
U+0040–004F	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
U+0050–005F	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
U+0060–006F	‘	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
U+0070–007F	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	–
Latin-1 Supplement																
U+00A0–00AF		¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	-	®	¯
U+00B0–00BF	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
U+00C0–00CF	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
U+00D0–00DF	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
U+00E0–00EF	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
U+00F0–00FF	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ
Latin Extended-A																
U+0100–010F	Ā	ā	Ă	ă	Ą	ą	Ć	ć	Ĉ	ĉ	Ċ	ċ	Č	č	Ď	ď
U+0110–011F	Đ	đ	Ē	ē	Ĕ	ĕ	Ė	ė	Ę	ę	Ě	ě	Ĝ	ĝ	Ğ	ğ
U+0120–012F	Ġ	ġ	Ģ	ģ	Ĥ	ĥ	Ħ	ħ	–	ĩ	Ī	ī	Ĭ	ĭ	Į	į
U+0130–013F	İ	ı	–	–	Ĵ	ĵ	Ķ	ķ	ĸ	Ĺ	ĺ	Ļ	ļ	Ľ	ľ	Ŀ
U+0140–014F	ŀ	Ł	ł	Ń	ń	Ņ	ņ	Ň	ň	–	Ŋ	ŋ	Ō	ō	Ŏ	ŏ
U+0150–015F	Ő	ő	Œ	œ	Ŕ	ŕ	Ŗ	ŗ	Ř	ř	Ś	ś	Ŝ	ŝ	Ş	ş
U+0160–016F	Š	š	Ţ	ţ	Ť	ť	Ŧ	ŧ	Ũ	ũ	Ū	ū	Ŭ	ŭ	Ů	ů
U+0170–017F	Ű	ű	Ų	ų	Ŵ	ŵ	Ŷ	ŷ	Ÿ	Ź	ź	Ż	ż	Ž	ž	–
Latin Extended-B																
U+0180–018F	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	ə
U+0190–019F	–	–	ƒ	–	–	–	–	–	–	–	–	–	–	–	–	–
U+01A0–01AF	Ơ	ơ	–	–	–	–	–	–	–	–	–	–	–	–	–	Ư
U+01B0–01BF	ư	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
U+01C0–01CF	–	–	–	–	DŽ	Dž	dž	LJ	Lj	lj	NJ	Nj	nj	Ǎ	ǎ	Ǐ
U+01D0–01DF	ǐ	Ǒ	ǒ	Ǔ	ǔ	Ǖ	ǖ	Ǘ	ǘ	Ǚ	ǚ	Ǜ	ǜ	–	–	–
U+01E0–01EF	–	–	–	–	–	–	Ǧ	ǧ	–	–	Ǫ	ǫ	–	–	–	–

Table 1: Pennstander-Regular *cont.*

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U+01F0–01FF	–	–	–	–	–	–	–	–	–	–	Ǻ	ǻ	Ǽ	ǽ	Ǿ	ǿ
U+0200–020F	Ȁ	ȁ	Ȃ	ȃ	Ȅ	ȅ	Ȇ	ȇ	Ȉ	ȉ	Ȋ	ȋ	Ȍ	ȍ	Ȏ	ȏ
U+0210–021F	Ȑ	ȑ	Ȓ	ȓ	Ȕ	ȕ	Ȗ	ȗ	Ș	ș	Ț	ț	–	–	–	–
U+0220–022F	–	–	–	–	–	–	–	–	–	–	Ȫ	ȫ	Ȭ	ȭ	–	–
U+0230–023F	Ȱ	ȱ	Ȳ	ȳ	–	–	–	ȷ	–	–	–	–	–	–	–	–

IPA Extensions

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U+0250–025F	–	–	–	–	–	–	–	–	–	ə	–	–	–	–	–	–

Spacing Modifier Letters

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U+02B0–02BF	–	–	–	–	–	–	–	–	–	–	–	–	ʾ	–	–	–
U+02C0–02CF	–	–	–	–	–	–	ˆ	ˇ	–	˗	–	–	–	–	–	–
U+02D0–02DF	–	–	–	–	–	–	–	–	˘	˙	˚	˛	˜	˝	–	–

Combining Diacritical Marks

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U+0300–030F	◌̀	◌́	◌̂	◌̃	◌̄	◌̅	◌̆	◌̇	◌̈	◌̉	◌̊	◌̋	◌̌	◌̍	◌̎	◌̏
U+0310–031F	–	◌̐	◌̑	–	–	–	–	–	–	–	–	◌̙	–	–	–	–
U+0320–032F	–	–	–	◌̣	◌̤	–	◌̧	◌̨	◌̩	–	–	–	–	–	◌̮	–
U+0330–033F	–	◌̱	–	–	–	◌̶	◌̷	◌̸	◌̹	–	–	–	–	–	–	–

Phonetic Extensions

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U+1D50–1D5F	–	–	–	–	–	–	–	–	–	–	–	ᵛ	–	–	–	–

Latin Extended Additional

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U+1E00–1E0F	–	–	–	–	–	–	–	–	Ḉ	ḉ	–	–	Ḍ	ḍ	Ḏ	ḏ
U+1E10–1E1F	–	–	–	–	Ḕ	ḕ	Ḗ	ḗ	–	–	–	–	Ḟ	ḟ	–	–
U+1E20–1E2F	Ḡ	ḡ	–	–	Ḥ	ḥ	–	–	–	–	Ḫ	ḫ	–	–	Ḯ	ḯ
U+1E30–1E3F	–	–	–	–	–	–	Ḷ	ḷ	–	–	Ḻ	ḻ	–	–	–	–
U+1E40–1E4F	–	–	Ṁ	ṁ	Ṅ	ṅ	Ṇ	ṇ	Ṉ	ṉ	–	–	Ṓ	ṓ	Ṏ	ṏ
U+1E50–1E5F	Ṑ	ṑ	Ṓ	ṓ	–	–	–	–	–	–	Ṛ	ṛ	–	–	Ṟ	ṟ
U+1E60–1E6F	Ṡ	ṡ	Ṣ	ṣ	Ṥ	ṥ	Ṧ	ṧ	Ṩ	ṩ	–	–	Ṭ	ṭ	Ṯ	ṯ
U+1E70–1E7F	–	–	–	–	–	–	–	–	Ṹ	ṹ	Ṻ	ṻ	–	–	–	–
U+1E80–1E8F	Ẁ	ẁ	Ẃ	ẃ	Ẅ	ẅ	–	–	–	–	–	–	–	–	Ẏ	ẏ
U+1E90–1E9F	–	–	Ẓ	ẓ	–	–	–	ẗ	–	–	–	–	–	–	ß	–
U+1EA0–1EAF	Ạ	ạ	Ả	ả	Ấ	ấ	Ầ	ầ	Ẩ	ẩ	Ẫ	ẫ	Ậ	ậ	Ắ	ắ
U+1EB0–1EBF	Ằ	ằ	Ẳ	ẳ	Ẵ	ẵ	Ặ	ặ	Ẹ	ẹ	Ẻ	ẻ	Ẽ	ẽ	Ế	ế
U+1EC0–1ECF	Ề	ề	Ể	ể	Ễ	ễ	Ệ	ệ	Ỉ	ỉ	Ị	ị	Ọ	ọ	Ỏ	ỏ
U+1ED0–1EDF	Ố	ố	Ồ	ồ	Ổ	ổ	Ỗ	ỗ	Ộ	ộ	Ớ	ớ	Ờ	ờ	Ở	ở
U+1EE0–1EEF	Ỡ	ỡ	Ợ	ợ	Ụ	ụ	Ủ	ủ	Ứ	ứ	Ừ	ừ	Ử	ử	Ữ	ữ

Table 1: Pennstander-Regular *cont.*

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U+1EF0–1EFF	Ự	ự	Ỳ	ỳ	Ỵ	ỵ	Ỷ	ỷ	Ỹ	ỹ	–	–	–	–	–	–
General Punctuation																
U+2000–200F				–	–	–	–	–	–			–	–	–	–	–
U+2010–201F	–	–	–	—	—	–	–	–	‘	’	,	‛	“	”	„	‟
U+2020–202F	†	‡	·	–	–	–	…	–	–	–	–	–	–	–	–	
U+2030–203F	‰	–	–	–	–	–	–	–	–	‹	›	–	–	–	–	–
U+2040–204F	–	–	–	–	⁄	–	–	–	–	–	–	–	–	–	–	–
Superscripts and Subscripts																
U+2070–207F	⁰	–	–	–	⁴	⁵	⁶	⁷	⁸	⁹	–	–	–	–	–	–
Currency Symbols																
U+20A0–20AF	–	₠	–	₣	£	–	₦	₱	–	₩	–	₫	€	₭	–	–
U+20B0–20BF	–	₱	₲	–	–	₵	–	–	–	₹	₺	–	₥	₽	–	–
Letterlike Symbols																
U+2110–211F	–	–	–	–	–	–	№	–	–	–	–	–	–	–	–	–
U+2120–212F	–	–	™	–	–	–	–	–	–	–	–	–	–	–	–	–
Number Forms																
U+2150–215F	–	–	–	–	–	–	–	–	–	–	–	⅛	⅜	⅝	⅞	–
Mathematical Operators																
U+2200–220F	–	–	–	–	–	∅	–	–	–	–	–	–	–	–	□	–
U+2210–221F	–	–	−	–	–	∕	–	–	–	∙	–	–	–	–	–	–
U+2240–224F	–	–	–	–	–	–	–	–	≈	–	–	–	–	–	–	–
U+2260–226F	≠	–	–	–	≤	≥	–	–	–	–	–	–	–	–	–	–
Geometric Shapes																
U+25C0–25CF	–	–	–	–	–	–	–	–	–	–	◊	–	–	–	–	–
Miscellaneous Shapes																
U+2600–260F	–	–	–	–	–	★	–	–	–	–	–	–	–	–	–	–
U+2660–266F	♠	♡	♢	♣	♤	♥	♦	♧	–	♩	♪	♫	♬	–	–	–
Alphabetic Presentation Forms																
U+FB00–FB0F	–	ﬁ	ﬂ	–	–	–	–	–	–	–	–	–	–	–	–	–

Total number of glyphs shown from Pennstander-Regular: 675

4.2 Math version

Table 2: PennstanderMath-Regular

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Basic Latin																
U+0000–000F	–	–	–	–	–	–	–	–	–	–	–	–	–		–	–
U+0020–002F		!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
U+0030–003F	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
U+0040–004F	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
U+0050–005F	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
U+0060–006F	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
U+0070–007F	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	–
Latin-1 Supplement																
U+00A0–00AF		¡	–	–	–	¥	¦	§	¨	©	ª	«	¬	-	®	¯
U+00B0–00BF	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	–	¾	¿
U+00D0–00DF	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–
U+00F0–00FF	ð	–	–	–	–	–	–	÷	–	–	–	–	–	–	–	–
Latin Extended-A																
U+0130–013F	–	ı	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Latin Extended-B																
U+0180–018F	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	ə
U+0190–019F	–	–	ƒ	–	–	–	–	–	–	–	–	–	–	–	–	–
U+01B0–01BF	–	–	–	–	–	ȝ	–	–	–	–	–	–	–	–	–	–
U+0230–023F	–	–	–	–	–	–	–	ȷ	–	–	–	–	–	–	–	–
IPA Extensions																
U+0250–025F	–	–	–	–	–	–	–	–	–	ə	–	–	–	–	–	–
Spacing Modifier Letters																
U+02B0–02BF	–	–	–	–	–	–	–	–	–	–	–	–	’	–	–	–
U+02C0–02CF	–	–	–	–	–	–	ˆ	ˇ	–	˗	–	–	–	–	–	–
U+02D0–02DF	–	–	–	–	–	–	–	–	˘	˙	˚	˛	˜	˝	–	–
Combining Diacritical Marks																
U+0300–030F	̀	́	̂	̃	̄	̅	̆	̇	̈	̉	̊	̋	̌		̲	̳	̾
U+0310–031F	̑	̒	̓	̔	–	–	–	–	–	–	–	–	̹	–	–	–	–
U+0320–032F	–	–	–	̣	̤	–	̧	̨	̩	–	–	–	–	–	–	–	–
U+0330–033F	–	̳	̲	–	–	–	–	̷	̸	–	–	–	–	–	–	–	–

Table 2: PennstanderMath-Regular *cont.*

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U+0340–034F	–	–	–	–	–	–	–	–	–	–	–	–	–	↔	–	–
Greek and Coptic																
U+0390–039F	–	Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο
U+03A0–03AF	Π	Ρ	–	Σ	Τ	Υ	Φ	Χ	Ψ	Ω	–	–	–	–	–	–
U+03B0–03BF	–	α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο
U+03C0–03CF	π	ρ	ς	σ	τ	υ	φ	χ	ψ	ω	–	–	–	–	–	–
U+03D0–03DF	–	ϑ	–	–	–	ϕ	ϖ	–	–	–	–	–	–	–	–	–
U+03F0–03FF	ϰ	ϱ	–	–	ϴ	ϵ	϶	–	–	–	–	–	–	–	–	–
Phonetic Extensions																
U+1D50–1D5F	–	–	–	–	–	–	–	–	–	–	–	ᵛ	–	–	–	–
Phonetic Extensions Supplement																
U+1DA0–1DAF	–	–	–	–	ɨ	–	–	–	–	–	–	–	–	–	–	–
General Punctuation																
U+2000–200F				–	–	–	–	–	–			–	–	–	–	–
U+2010–201F	–	–	–	‐	―	‖	‗	‘	’	‚	–	“	”	„	–	
U+2020–202F	†	‡	•	–	–	‥	…	–	–	–	–	–	–	–		
U+2030–203F	‰	–	′	″	‴	‵	‶	‷	–	‹	›	–	‼	–	‾	–
U+2040–204F	–	–	–	‐	⁄	–	–	⁇	–	–	–	–	–	–	–	–
U+2050–205F	–	–	–	–	–	–	–	⁗	–	–	–	–	–	–	–	–
Superscripts and Subscripts																
U+2070–207F	⁰	–	–	–	⁴	⁵	⁶	⁷	⁸	⁹	–	–	–	–	–	–
Currency Symbols																
U+20A0–20AF	–	–	–	–	–	–	–	–	–	–	–	–	€	–	–	–
Combining Diacritical Marks for Symbols																
U+20D0–20DF	↼	⇀	–	–	–	–	↞	↠	–	–	–	⋯	⁘	–	–	–
U+20E0–20EF	–	↔	–	–	–	–	–	–	⋯	–	–	–	⇁	↽	↞	↠
U+20F0–20FF	*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Letterlike Symbols																
U+2100–210F	–	–	ℂ	–	–	–	–	–	–	–	–	ℋ	ℌ	ℍ	*h*	ℏ
U+2110–211F	ℐ	ℑ	ℒ	ℓ	–	ℕ	№	–	℘	ℙ	ℚ	ℛ	ℜ	ℝ	–	–
U+2120–212F	–	–	™	–	ℤ	–	–	℧	ℨ	–	–	Å	ℬ	ℭ	–	–
U+2130–213F	ℰ	ℱ	℩	ℳ	–	ℵ	ℶ	ℷ	ℸ	–	–	–	⅀	–	ℾ	ℿ
U+2140–214F	⅀	–	⅂	⅃	–	ⅅ	–	–	ⅈ	ⅉ	–	⅋	–	–	–	–

Table 2: PennstanderMath-Regular *cont.*

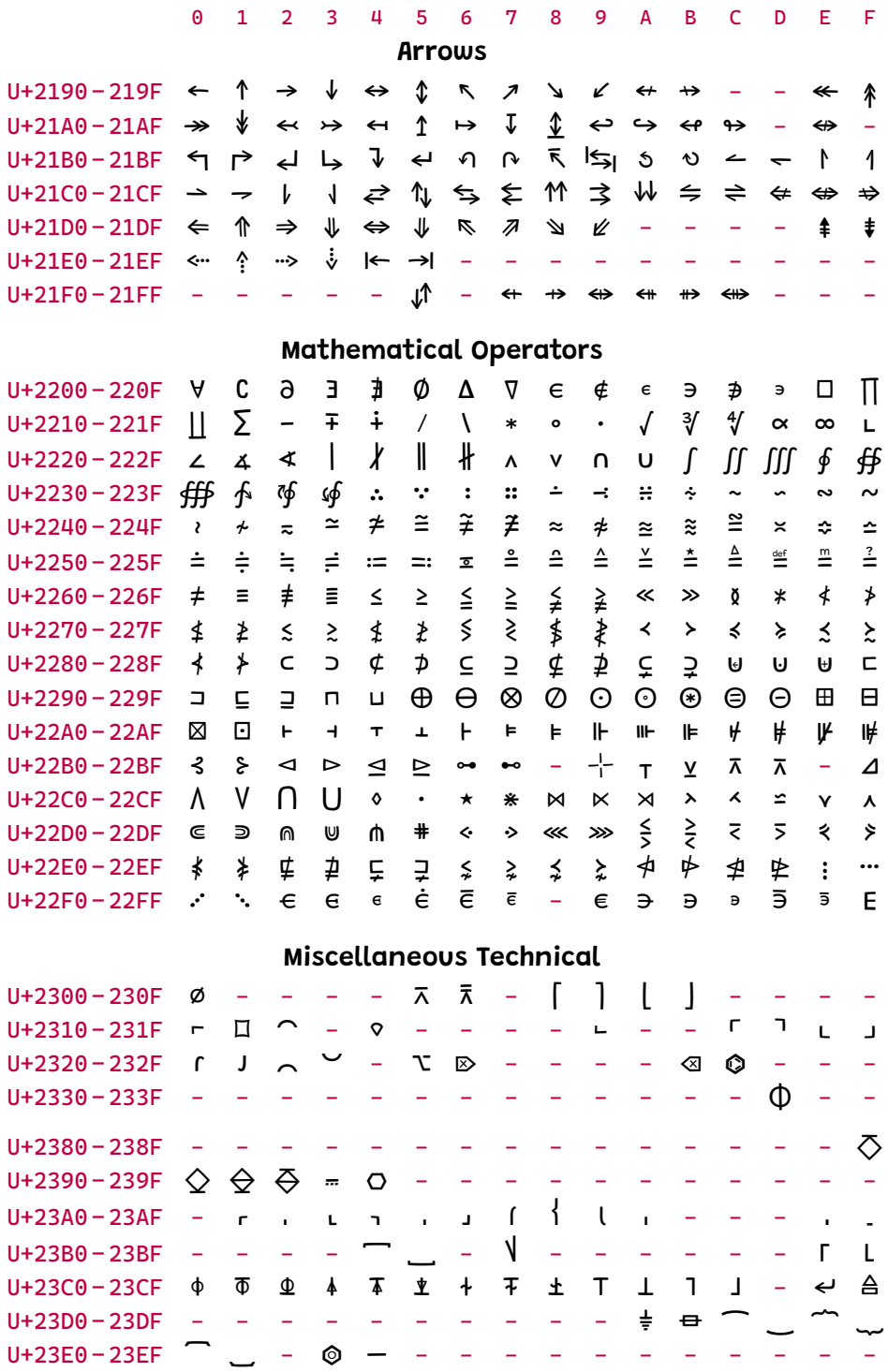

Table 2: PennstanderMath-Regular *cont.*

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Control Pictures																
U+2420–242F	–	–	␢	␣	–	–	–	–	–	–	–	–	–	–	–	–
Block Elements																
U+2580–258F	▀	–	–	–	▄	–	–	–	■	–	–	–	▮	–	–	–
U+2590–259F	▮	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Geometric Shapes																
U+25A0–25AF	■	□	▢	▣	–	–	–	▧	–	–	▪	▫	▬	▭	▮	▯
U+25B0–25BF	▰	▱	▲	△	▴	▵	▶	▷	▸	▹	▶	▷	▼	▽	▾	▿
U+25C0–25CF	◀	◁	◂	◃	◀	◁	◆	◇	◈	◉	◊	○	–	–	◎	●
U+25D0–25DF	◐	◑	◒	◓	◔	◕	◖	◗	–	–	–	–	◜	◝	◞	◟
U+25E0–25EF	◠	◡	◢	◣	◤	◥	◦	◧	◨	◩	◪	◫	◬	◭	◮	◯
U+25F0–25FF	–	–	–	–	–	–	–	–	◸	◹	◺	–	■	□	■	◿
Miscellaneous Shapes																
U+2600–260F	–	–	–	–	–	★	–	–	–	⊙	–	–	–	–	–	–
U+2610–261F	–	–	–	–	–	–	–	–	–	☙	–	–	–	–	–	–
U+2630–263F	–	–	–	–	–	–	–	–	–	–	–	☻	☼	☽	☾	☿
U+2640–264F	♀	♁	♂	–	♄	–	–	♇	–	–	–	–	–	–	–	–
U+2660–266F	♠	♡	♢	♣	♤	♥	♦	♧	–	♩	♪	♫	♬	♭	♮	♯
U+2670–267F	–	–	–	–	–	–	–	–	–	–	–	–	–	–	♾	–
U+2680–268F	⚀	⚁	⚂	⚃	⚄	⚅	⚆	⚇	–	–	–	–	–	–	–	–
U+2690–269F	⚐	⚑	–	–	–	–	–	–	–	–	–	–	–	–	–	–
U+26A0–26AF	⚠	–	⚢	⚣	⚤	⚥	⚦	⚧	⚨	⚩	⚪	–	○	–	–	–
U+26B0–26BF	–	–	⚲	–	–	–	–	–	–	–	–	–	–	–	–	–
Dingbats																
U+2710–271F	–	–	–	✓	–	–	–	–	–	–	–	–	–	–	–	–
U+2760–276F	–	¶	❠	❡	❤	❥	❦	❧	–	–	–	–	–	–	–	–
U+2790–279F	–	–	–	–	–	–	–	–	–	–	–	→	–	–	–	–
Miscellaneous Mathematical Symbols-A																
U+27C0–27CF	–	–	⊥	⟃	⟄	–	–	⟇	⟈	⟉	–	⟋	–	⟍	–	–
U+27D0–27DF	⟐	⟑	⟒	⟓	⟔	⟕	⟖	⟗	⟘	⟙	⟚	⟛	⟜	⟝	⟞	⟟
U+27E0–27EF	⟠	–	⟡	⟢	⟣	⟤	⟦	⟧	⟨	⟩	⟪	⟫	–	–	⟮	⟯
Supplemental Arrows-A																
U+27F0–27FF	–	–	⟲	⟳	⟴	⟵	⟶	⟷	⟸	⟹	⟺	⟻	⟼	⟽	⟾	–

Table 2: PennstanderMath-Regular *cont.*

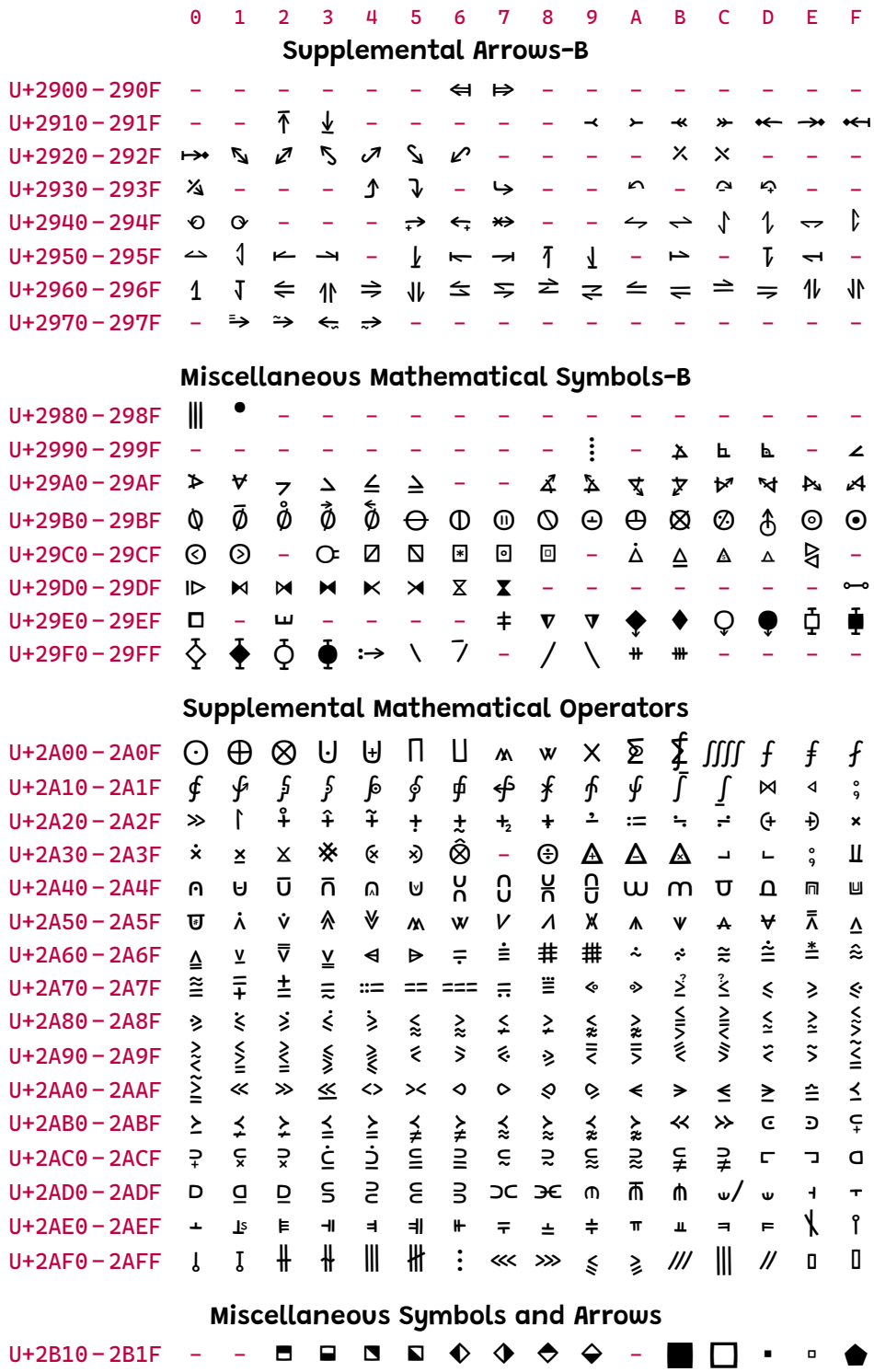

Table 2: PennstanderMath-Regular *cont.*

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U+2B20–2B2F	⬠	⬡	⬢	⬣	⬤	◆	◇	◆	◇	◆	◆	◊	⬬	⬭	⬮	0
U+2B50–2B5F	☆	★	☆	⬟	⬠	–	–	–	–	–	–	–	–	–	–	–
Private Use Area																
U+E000–E00F	_	_	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Total number of glyphs shown from PennstanderMath-Regular: 1379

5 Alphabets

5.1 Text version

– Normal/**Bold**/*Italic*/***BoldItalic***/*Slanted*/***BoldSlanted***:

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

Slanted version uses italic version.

5.2 Math version

– Normal/**Bold**/*Italic*/***BoldItalic***:

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

– mathcal/mathfrak/mathbb:

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ

ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

5.3 Samples

The source files for these samples are available in the GitHub repository and can be compiled with ConTeXt LMTX using `context filename.tex`.

Samples document can be loaded by:

- `texdoc pennstander-otf-samples-text.pdf`
- `texdoc pennstander-otf-samples-math.pdf`