

## Miscellaneous Technical

### Range: 2300–23FF

#### The Unicode Standard, Version 3.2

This file contains an excerpt from the character code tables and list of character names for *The Unicode Standard, Version 3.2*.

Characters in this chart that are new for The Unicode Standard, Version 3.2 are shown in conjunction with any existing characters. For ease of reference, the new characters have been highlighted in the chart grid and in the names list.

This file will not be updated with errata, or when additional characters are assigned to the Unicode Standard. See <http://www.unicode.org/charts> for access to a complete list of the latest character charts.

#### Disclaimer

These charts are provided as the on-line reference to the character contents of the Unicode Standard, Version 3.2 but do not provide all the information needed to fully support individual scripts using the Unicode Standard. For a complete understanding of the use of the characters contained in this excerpt file, please consult the appropriate sections of The Unicode Standard, Version 3.0 (ISBN 0-201-61633-5), as well as Unicode Standard Annexes #28 and #27, the other Unicode Technical Reports and the Unicode Character Database, which are available on-line.

See <http://www.unicode.org/Public/UNIDATA/UnicodeCharacterDatabase.html> and <http://www.unicode.org/unicode/reports>

A thorough understanding of the information contained in these additional sources is required for a successful implementation.

#### Fonts

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See <http://www.unicode.org/unicode/uni2book/u2fonts.html> for a list.

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


























































































































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See <http://www.unicode.org/pending/pending.html> and <http://www.unicode.org/unicode/alloc/Pipeline.html>.

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	230	231	232	233	234	235	236	237
0	 2300	 2310	 2320	 2330	 2340	 2350	 2360	 2370
1	 2301	 2311	 2321	 2331	 2341	 2351	 2361	 2371
2	 2302	 2312	 2322	 2332	 2342	 2352	 2362	 2372
3	 2303	 2313	 2323	 2333	 2343	 2353	 2363	 2373
4	 2304	 2314	 2324	 2334	 2344	 2354	 2364	 2374
5	 2305	 2315	 2325	 2335	 2345	 2355	 2365	 2375
6	 2306	 2316	 2326	 2336	 2346	 2356	 2366	 2376
7	 2307	 2317	 2327	 2337	 2347	 2357	 2367	 2377
8	 2308	 2318	 2328	 2338	 2348	 2358	 2368	 2378
9	 2309	 2319	 2329	 2339	 2349	 2359	 2369	 2379
A	 230A	 231A	 232A	 233A	 234A	 235A	 236A	 237A
B	 230B	 231B	 232B	 233B	 234B	 235B	 236B	 237B
C	 230C	 231C	 232C	 233C	 234C	 235C	 236C	 237C
D	 230D	 231D	 232D	 233D	 234D	 235D	 236D	 237D
E	 230E	 231E	 232E	 233E	 234E	 235E	 236E	 237E
F	 230F	 231F	 232F	 233F	 234F	 235F	 236F	 237F

	238	239	23A	23B	23C	23D	23E	23F
0	2380	2390	23A0	23B0	23C0			
1	2381	2391	23A1	23B1	23C1			
2	2382	2392	23A2	23B2	23C2			
3	2383	2393	23A3	23B3	23C3			
4	2384	2394	23A4	23B4	23C4			
5	2385	2395	23A5	23B5	23C5			
6	2386	2396	23A6	23B6	23C6			
7	2387	2397	23A7	23B7	23C7			
8	2388	2398	23A8	23B8	23C8			
9	2389	2399	23A9	23B9	23C9			
A	238A	239A	23AA	23BA	23CA			
B	238B	239B	23AB	23BB	23CB			
C	238C	239C	23AC	23BC	23CC			
D	238D	239D	23AD	23BD	23CD			
E	238E	239E	23AE	23BE	23CE			
F	238F	239F	23AF	23BF				

**Miscellaneous technical**

2300	∅	DIAMETER SIGN → 2205 ∅ empty set	231B	⌚	HOURGLASS
2301	↘	ELECTRIC ARROW • from ISO 2047 • symbol for End of Transmission	231C	⌞	TOP LEFT CORNER • set of four “quine” corners, for quincuncial arrangement
2302	⏏	HOUSE	231D	⌟	TOP RIGHT CORNER
2303	^	UP ARROWHEAD → 005E ^ circumflex accent → 02C4 ^ modifier letter up arrowhead → 2038 ^ caret → 2227 ^ logical and	231E	⌞	BOTTOM LEFT CORNER
2304	∨	DOWN ARROWHEAD → 02C5 ∨ modifier letter down arrowhead → 2228 ∨ logical or → 2335 ∨ countersink	231F	⌞	BOTTOM RIGHT CORNER
2305	⌞	PROJECTIVE → 22BC ⌞ nand	2320	∫	TOP HALF INTEGRAL
2306	⌞	PERSPECTIVE	2321	∫	BOTTOM HALF INTEGRAL
2307	⌘	WAVY LINE → 3030 ~ wavy dash	2322	⌞	FROWN → 2040 ⌞ character tie
2308	⌞	LEFT CEILING = APL upstile → 300C ⌞ left corner bracket	2323	☺	SMILE → 203F ☺ undertie
2309	⌞	RIGHT CEILING → 20E7 ⌞ combining annuity symbol	2324	⌞	UP ARROWHEAD BETWEEN TWO HORIZONTAL BARS = ENTER KEY
230A	⌞	LEFT FLOOR = APL downstile	2325	⌞	OPTION KEY
230B	⌞	RIGHT FLOOR → 300D ⌞ right corner bracket	2326	⌞	ERASE TO THE RIGHT = DELETE TO THE RIGHT KEY
230C	⌞	BOTTOM RIGHT CROP • set of four “crop” corners, arranged facing outward	2327	⌞	X IN A RECTANGLE BOX = CLEAR KEY
230D	⌞	BOTTOM LEFT CROP	2328	⌞	KEYBOARD
230E	⌞	TOP RIGHT CROP	2329	⌞	LEFT-POINTING ANGLE BRACKET • discouraged for mathematical use because of canonical equivalence to CJK punctuation → 003C < less-than sign → 2039 < single left-pointing angle quotation mark → 27E8 < mathematical left angle bracket ≡ 3008 < left angle bracket
230F	⌞	TOP LEFT CROP	232A	⌞	RIGHT-POINTING ANGLE BRACKET • discouraged for mathematical use because of canonical equivalence to CJK punctuation → 003E > greater-than sign → 203A > single right-pointing angle quotation mark → 27E9 > mathematical right angle bracket ≡ 3009 > right angle bracket
2310	⌞	REVERSED NOT SIGN = beginning of line → 00AC ⌞ not sign	232B	⌞	ERASE TO THE LEFT = DELETE TO THE LEFT KEY
2311	▣	SQUARE LOZENGE = Kissen (pillow) • used as a command delimiter in some very old computers	232C	⌞	BENZENE RING
2312	⌞	ARC → 25E0 ⌞ upper half circle	232D	⌞	CYLINDRICITY
2313	⌞	SEGMENT	232E	⌞	ALL AROUND-PROFILE
2314	⌞	SECTOR	232F	⌞	SYMMETRY
2315	⌞	TELEPHONE RECORDER	2330	⌞	TOTAL RUNOUT
2316	⌞	POSITION INDICATOR	2331	⌞	DIMENSION ORIGIN
2317	⌞	VIEWDATA SQUARE → 22D5 # equal and parallel to	2332	⌞	CONICAL TAPER
2318	⌞	PLACE OF INTEREST SIGN = COMMAND KEY	2333	⌞	SLOPE
2319	⌞	TURNED NOT SIGN = line marker	2334	⌞	COUNTERBORE → 2423 ⌞ open box
231A	⌞	WATCH	2335	∨	COUNTERSINK → 2304 ∨ down arrowhead
			<b>APL</b>		
			2336	⌞	APL FUNCTIONAL SYMBOL I-BEAM

2337	▯	APL FUNCTIONAL SYMBOL SQUISH QUAD → 2395 ▯ apl functional symbol quad → 25AF ▯ white vertical rectangle	234F	+	APL FUNCTIONAL SYMBOL UPWARDS VANE
2338	▨	APL FUNCTIONAL SYMBOL QUAD EQUAL	2350	▯	APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW
2339	▩	APL FUNCTIONAL SYMBOL QUAD DIVIDE	2351	⌣	APL FUNCTIONAL SYMBOL UP TACK OVERBAR = down tack overbar → 22A4 ⌣ down tack → 3012 ⌣ postal mark
233A	◊	APL FUNCTIONAL SYMBOL QUAD DIAMOND	2352	∇	APL FUNCTIONAL SYMBOL DEL STILE
233B	⊞	APL FUNCTIONAL SYMBOL QUAD JOT	2353	⊞	APL FUNCTIONAL SYMBOL QUAD UP CARET
233C	⊚	APL FUNCTIONAL SYMBOL QUAD CIRCLE	2354	⊞	APL FUNCTIONAL SYMBOL QUAD DEL
233D	⊘	APL FUNCTIONAL SYMBOL CIRCLE STILE	2355	⌣	APL FUNCTIONAL SYMBOL UP TACK JOT = down tack jot → 22A4 ⌣ down tack
233E	⊙	APL FUNCTIONAL SYMBOL CIRCLE JOT → 229A ⊙ circled ring operator	2356	+	APL FUNCTIONAL SYMBOL DOWNWARDS VANE
233F	÷	APL FUNCTIONAL SYMBOL SLASH BAR	2357	▯	APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW
2340	↖	APL FUNCTIONAL SYMBOL BACKSLASH BAR	2358	⸘	APL FUNCTIONAL SYMBOL QUOTE UNDERBAR
2341	▮	APL FUNCTIONAL SYMBOL QUAD SLASH	2359	Δ	APL FUNCTIONAL SYMBOL DELTA UNDERBAR
2342	▮	APL FUNCTIONAL SYMBOL QUAD BACKSLASH	235A	◊	APL FUNCTIONAL SYMBOL DIAMOND UNDERBAR
2343	▮	APL FUNCTIONAL SYMBOL QUAD LESS-THAN	235B	⊞	APL FUNCTIONAL SYMBOL JOT UNDERBAR
2344	▮	APL FUNCTIONAL SYMBOL QUAD GREATER-THAN	235C	⊚	APL FUNCTIONAL SYMBOL CIRCLE UNDERBAR
2345	+	APL FUNCTIONAL SYMBOL LEFTWARDS VANE	235D	⊞	APL FUNCTIONAL SYMBOL UP SHOE JOT
2346	+	APL FUNCTIONAL SYMBOL RIGHTWARDS VANE	235E	▯	APL FUNCTIONAL SYMBOL QUOTE QUAD
2347	▯	APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW	235F	⊙	APL FUNCTIONAL SYMBOL CIRCLE STAR
2348	▯	APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW	2360	▯	APL FUNCTIONAL SYMBOL QUAD COLON
2349	⊘	APL FUNCTIONAL SYMBOL CIRCLE BACKSLASH	2361	⸘	APL FUNCTIONAL SYMBOL UP TACK DIAERESIS = down tack diaeresis → 22A4 ⌣ down tack
234A	⸘	APL FUNCTIONAL SYMBOL DOWN TACK UNDERBAR = up tack underbar • preferred naming for APL tack symbols now follows the London Convention in ISO/IEC 13751:2000 (APL Extended) → 22A5 ⸘ up tack	2362	∇	APL FUNCTIONAL SYMBOL DEL DIAERESIS
234B	Δ	APL FUNCTIONAL SYMBOL DELTA STILE	2363	*	APL FUNCTIONAL SYMBOL STAR DIAERESIS
234C	⊞	APL FUNCTIONAL SYMBOL QUAD DOWN CARET	2364	⊞	APL FUNCTIONAL SYMBOL JOT DIAERESIS = hoot
234D	Δ	APL FUNCTIONAL SYMBOL QUAD DELTA	2365	⊘	APL FUNCTIONAL SYMBOL CIRCLE DIAERESIS = holler
234E	⸘	APL FUNCTIONAL SYMBOL DOWN TACK JOT = up tack jot → 22A5 ⸘ up tack	2366	⊞	APL FUNCTIONAL SYMBOL DOWN SHOE STILE
			2367	⊞	APL FUNCTIONAL SYMBOL LEFT SHOE STILE

2368	˜	APL FUNCTIONAL SYMBOL TILDE DIAERESIS = smirk
2369	≧	APL FUNCTIONAL SYMBOL GREATER-THAN DIAERESIS
236A	̣	APL FUNCTIONAL SYMBOL COMMA BAR
236B	∇	APL FUNCTIONAL SYMBOL DEL TILDE
236C	θ	APL FUNCTIONAL SYMBOL ZILDE
236D	†	APL FUNCTIONAL SYMBOL STILE TILDE
236E	;	APL FUNCTIONAL SYMBOL SEMICOLON UNDERBAR
236F	≠	APL FUNCTIONAL SYMBOL QUAD NOT EQUAL
2370	?	APL FUNCTIONAL SYMBOL QUAD QUESTION
2371	∨	APL FUNCTIONAL SYMBOL DOWN CARET TILDE
2372	∧	APL FUNCTIONAL SYMBOL UP CARET TILDE
2373	ι	APL FUNCTIONAL SYMBOL IOTA
2374	ρ	APL FUNCTIONAL SYMBOL RHO
2375	ω	APL FUNCTIONAL SYMBOL OMEGA
2376	α	APL FUNCTIONAL SYMBOL ALPHA UNDERBAR
2377	ε	APL FUNCTIONAL SYMBOL EPSILON UNDERBAR
2378	ι	APL FUNCTIONAL SYMBOL IOTA UNDERBAR
2379	ω	APL FUNCTIONAL SYMBOL OMEGA UNDERBAR
237A	α	APL FUNCTIONAL SYMBOL ALPHA

### Graphics for control codes

237B	✓	NOT CHECK MARK • from ISO 2047 • symbol for Negative Acknowledge
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### Miscellaneous technical

237C	↘	RIGHT ANGLE WITH DOWNWARDS ZIGZAG ARROW
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### Graphics for control codes

237D	⌞	SHOULDERED OPEN BOX • from ISO 9995-7 • keyboard symbol for No Break Space
237E	🔔	BELL SYMBOL • from ISO 2047
237F	‡	VERTICAL LINE WITH MIDDLE DOT • from ISO 2047 • symbol for End of Medium

### Keyboard symbols from ISO 9995-7

2380	↵	INSERTION SYMBOL
2381	≡	CONTINUOUS UNDERLINE SYMBOL
2382	≡	DISCONTINUOUS UNDERLINE SYMBOL

2383	≡	EMPHASIS SYMBOL
2384	Ⓜ	COMPOSITION SYMBOL
2385	Ⓜ	WHITE SQUARE WITH CENTRE VERTICAL LINE
2386	↵	ENTER SYMBOL
2387	↵	ALTERNATIVE KEY SYMBOL
2388	⦿	HELM SYMBOL = control → 2638 ⦿ wheel of dharma
2389	Ⓜ	CIRCLED HORIZONTAL BAR WITH NOTCH
238A	Ⓜ	CIRCLED TRIANGLE DOWN
238B	Ⓜ	BROKEN CIRCLE WITH NORTHWEST ARROW
238C	↵	UNDO SYMBOL

### Electrotechnical symbols from IR 181

238D	Ⓜ	MONOSTABLE SYMBOL
238E	Ⓜ	HYSTERESIS SYMBOL
238F	Ⓜ	OPEN-CIRCUIT-OUTPUT H-TYPE SYMBOL
2390	Ⓜ	OPEN-CIRCUIT-OUTPUT L-TYPE SYMBOL
2391	Ⓜ	PASSIVE-PULL-DOWN-OUTPUT SYMBOL
2392	Ⓜ	PASSIVE-PULL-UP-OUTPUT SYMBOL
2393	≡	DIRECT CURRENT SYMBOL FORM TWO
2394	Ⓜ	SOFTWARE-FUNCTION SYMBOL

### APL

2395	□	APL FUNCTIONAL SYMBOL QUAD → 2337 □ apl functional symbol squish quad → 25AF □ white vertical rectangle
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### Keyboard symbols from ISO 9995-7

2396	↵	DECIMAL SEPARATOR KEY SYMBOL
2397	⏪	PREVIOUS PAGE
2398	⏩	NEXT PAGE
2399	🖨	PRINT SCREEN SYMBOL
239A	🗑	CLEAR SCREEN SYMBOL → 20E2 🗑 combining enclosing screen

### Bracket pieces

239B	{	LEFT PARENTHESIS UPPER HOOK
239C	{	LEFT PARENTHESIS EXTENSION
239D	{	LEFT PARENTHESIS LOWER HOOK
239E	}	RIGHT PARENTHESIS UPPER HOOK
239F	}	RIGHT PARENTHESIS EXTENSION
23A0	}	RIGHT PARENTHESIS LOWER HOOK
23A1	[	LEFT SQUARE BRACKET UPPER CORNER
23A2	[	LEFT SQUARE BRACKET EXTENSION
23A3	[	LEFT SQUARE BRACKET LOWER CORNER
23A4	]	RIGHT SQUARE BRACKET UPPER CORNER

23A5		RIGHT SQUARE BRACKET EXTENSION
23A6	]	RIGHT SQUARE BRACKET LOWER CORNER
23A7	{	LEFT CURLY BRACKET UPPER HOOK
23A8	}	LEFT CURLY BRACKET MIDDLE PIECE
23A9		LEFT CURLY BRACKET LOWER HOOK
23AA		CURLY BRACKET EXTENSION
23AB	]	RIGHT CURLY BRACKET UPPER HOOK
23AC	}	RIGHT CURLY BRACKET MIDDLE PIECE
23AD	]	RIGHT CURLY BRACKET LOWER HOOK

### Special character extensions

23AE		INTEGRAL EXTENSION → 2320 <i>r</i> top half integral → 2321 <i>J</i> bottom half integral
23AF	-	HORIZONTAL LINE EXTENSION • used for extension of arrows

### Bracket pieces

23B0		UPPER LEFT OR LOWER RIGHT CURLY BRACKET SECTION = left moustache
23B1		UPPER RIGHT OR LOWER LEFT CURLY BRACKET SECTION = right moustache

### Summation sign parts

23B2	∑	SUMMATION TOP
23B3	∑	SUMMATION BOTTOM

### Vertical brackets

23B4	⌈	TOP SQUARE BRACKET
23B5	⌋	BOTTOM SQUARE BRACKET
23B6	⌋	BOTTOM SQUARE BRACKET OVER TOP SQUARE BRACKET

### Terminal graphic characters

23B7	⌋	RADICAL SYMBOL BOTTOM
23B8		LEFT VERTICAL BOX LINE
23B9		RIGHT VERTICAL BOX LINE

### Scan lines for terminal graphics

*The scan line numbers here refer to old, low-resolution technology for terminals, with only 9 scan lines per fixed-size character glyph. Even-numbered scan lines are unified with box-drawing graphics.*

23BA	-	HORIZONTAL SCAN LINE-1
23BB	-	HORIZONTAL SCAN LINE-3
23BC	-	HORIZONTAL SCAN LINE-7
23BD	-	HORIZONTAL SCAN LINE-9

### Dentistry notation symbols

23BE	⌈	DENTISTRY SYMBOL LIGHT VERTICAL AND TOP RIGHT
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23BF	⌋	DENTISTRY SYMBOL LIGHT VERTICAL AND BOTTOM RIGHT
23C0	⊕	DENTISTRY SYMBOL LIGHT VERTICAL WITH CIRCLE
23C1	⊕	DENTISTRY SYMBOL LIGHT DOWN AND HORIZONTAL WITH CIRCLE
23C2	⊕	DENTISTRY SYMBOL LIGHT UP AND HORIZONTAL WITH CIRCLE
23C3	⊕	DENTISTRY SYMBOL LIGHT VERTICAL WITH TRIANGLE
23C4	⊕	DENTISTRY SYMBOL LIGHT DOWN AND HORIZONTAL WITH TRIANGLE
23C5	⊕	DENTISTRY SYMBOL LIGHT UP AND HORIZONTAL WITH TRIANGLE
23C6	+	DENTISTRY SYMBOL LIGHT VERTICAL AND WAVE
23C7	+	DENTISTRY SYMBOL LIGHT DOWN AND HORIZONTAL WITH WAVE
23C8	+	DENTISTRY SYMBOL LIGHT UP AND HORIZONTAL WITH WAVE
23C9	⌋	DENTISTRY SYMBOL LIGHT DOWN AND HORIZONTAL
23CA	⌋	DENTISTRY SYMBOL LIGHT UP AND HORIZONTAL
23CB	⌋	DENTISTRY SYMBOL LIGHT VERTICAL AND TOP LEFT
23CC	⌋	DENTISTRY SYMBOL LIGHT VERTICAL AND BOTTOM LEFT

### Miscellaneous technical symbol

23CD	⊠	SQUARE FOOT
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### Keyboard symbol

23CE	↵	RETURN SYMBOL • may be shown with either hollow or filled glyph → 21B5 ↵ downwards arrow with corner leftwards
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