Miscellaneous Technical
Range: 2300–23FF

The Unicode Standard, Version 6.0
This file contains an excerpt from the character code tables and list of character names for
The Unicode Standard, Version 6.0.

Characters in this chart that are new for The Unicode Standard, Version 6.0 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/errata/ for an up-to-date list of errata.

See http://www.unicode.org/charts/ for access to a complete list of the latest character code charts.
See http://www.unicode.org/charts/PDF/Unicode-6.0/ for charts showing only the characters added in Unicode 6.0.
See http://www.unicode.org/Public/6.0.0/charts/ for a complete archived file of character code charts for Unicode 6.0.

Disclaimer
These charts are provided as the online reference to the character contents of the Unicode Standard, Version 6.0 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 file, please consult the appropriate sections of The Unicode Standard, Version 6.0, online at http://www.unicode.org/versions/Unicode6.0.0/, as well as Unicode Standard Annexes #9, #11, #14, #15, #24, #29, #31, #34, #38, #41, #42, and #44, the other Unicode Technical Reports and Standards, and the Unicode Character Database, which are available online.

See http://www.unicode.org/ucd/ and http://www.unicode.org/reports/

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

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<th>Characters</th>
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Miscellaneous technical

2300 ⊙ DIAMETER SIGN
→ 2205 ⊙ empty set
2301 ← ELECTRIC ARROW
• from ISO 2047
• symbol for End of Transmission
2302 ▶ HOUSE
2303 ▼ UP ARROWHEAD
→ 005E ▼ circumflex accent
→ 02C4 ▼ modifier letter up arrowhead
→ 2038 ▼ caret
→ 2227 ▼ logical and
2304 ▲ DOWN ARROWHEAD
→ 02C5 ▲ modifier letter down arrowhead
→ 2228 ▲ logical or
→ 2335 ▲ countersink
2305 ▲ PROJECTIVE
→ 228C ▲ nand
2306 ▲ PERSPECTIVE
2307 ├ WAVY LINE
→ 0330 └ wavy dash

Ceilings and floors

These characters are tall and narrow mathematical delimiters, in contrast to the quine corners or half brackets. They are also distinct from CJK corner brackets, which are wide quotation marks.

2308 ┌ LEFT CEILING
= APL upstile
→ 2E22 ┌ top left half bracket
→ 300C ┌ left corner bracket
2309 └ RIGHT CEILING
→ 20E7 └ combining annuity symbol
→ 2E23 └ top right half bracket
230A ┤ LEFT FLOOR
= APL downstile
→ 2E24 ┤ bottom left half bracket
230B ┤ RIGHT FLOOR
→ 300D ┤ right corner bracket
→ 2E25 ┤ bottom right half bracket

Crops

230C └ BOTTOM RIGHT CROP
• set of four "crop" corners, arranged facing outward
230D └ BOTTOM LEFT CROP
230E └ TOP RIGHT CROP
230F └ TOP LEFT CROP

Miscellaneous technical

2310 ← REVERSED NOT SIGN
= beginning of line
→ 00AC ← not sign
2311 □ SQUARE LOZENGE
= Kissen (pillow)
• used as a command delimiter in some very old computers
2312 △ ARC
= position of any line
→ 25E0 △ upper half circle
2313 □ SEGMENT
= position of a surface
2314 △ SECTOR
2315 △ TELEPHONE RECORDER

2316 † POSITION INDICATOR
= true position
2317 ⊿ VIEWDATA SQUARE
→ 22DS ⊿ equal and parallel to
2318 ⚹ PLACE OF INTEREST SIGN
= command key (1.0)
2319 ∸ TURNED NOT SIGN
= line marker

User interface symbols

231A ☐ WATCH
→ 23F0 ☐ alarm clock
→ 1F550 ☐ clock face one o'clock
231B ␣ HOURGLASS
= alchemical symbol for hour

Quine corners

These form a set of four quine corners, for quincuncial arrangement. They are also used in upper and lower pairs in mathematical, or more rarely in editorial usage as alternatives to half brackets.

231C ⌑ TOP LEFT CORNER
→ 2E00 ⌑ right angle substitution marker
→ 2E22 ⌑ top left half bracket
231D ⊐ TOP RIGHT CORNER
231E ⊐ BOTTOM LEFT CORNER
231F ⊐ BOTTOM RIGHT CORNER

Integral pieces

2320 ⌉ TOP HALF INTEGRAL
→ 23AE ⌉ integral extension
2321 ⌌ BOTTOM HALF INTEGRAL

Frown and smile

2322 ¬ FROWN
→ 2040 ¬ character tie
2323 ¬ SMILE
→ 203F ¬ undertie

Keyboard symbols

2324 ⌂ UP ARROWHEAD BETWEEN TWO HORIZONTAL BARS
= enter key
2325 ¬ OPTION KEY
2326 ⌃ ERASE TO THE RIGHT
= delete to the right key
2327 ⌃ X IN A RECTANGLE BOX
= clear key
2328 ◆ KEYBOARD

Deprecated angle brackets

These characters are deprecated and are strongly discouraged for mathematical use because of their canonical equivalence to CJK punctuation.

2329 ⟨ LEFT-POINTING ANGLE BRACKET
= 003C < less-than sign
→ 2039 ⟨ single left-pointing angle quotation mark
→ 27E8 ⟨ mathematical left angle bracket
≡ 3008 ⟨ left bracket
2322A ⟩ RIGHT-POINTING ANGLE BRACKET
= 003E > greater-than sign
→ 203A ⟩ single right-pointing angle quotation mark
→ 27E9 ⟩ mathematical right angle bracket
≡ 3009 ⟩ right bracket
Keyboard symbol

232B ☹ ERASE TO THE LEFT
   = delete to the left key

Chemistry symbol

232C ○ BENZENE RING

Drafting symbols

232D ⊀ CYLINDRICITY
232E ⊀ ALL AROUND-PROFILE
232F ⊀ SYMMETRY
2330 ⊀ TOTAL RUNOUT
2331 ⊀ DIMENSION ORIGIN
2332 ⊀ CONICAL TAPER
2333 ⊀ SLOPE
   → 25FA ▼ lower left triangle
2334 ⊀ COUNTERBORE
   → 2423 ▼ open box
2335 ⊀ COUNTERSINK
   → 2304 ▼ down arrowhead

APL

2336 ⊀ APL FUNCTIONAL SYMBOL I-BEAM
2337 ⊀ APL FUNCTIONAL SYMBOL SQUISH QUAD
   → 2395 ⊀ apl functional symbol quad
   → 25AF ⊀ white vertical rectangle
   → 2AFF ⊀ n-ary white vertical bar
2338 ⊀ APL FUNCTIONAL SYMBOL QUAD EQUAL
2339 ⊀ APL FUNCTIONAL SYMBOL QUAD QUAD
233A ⊀ APL FUNCTIONAL SYMBOL QUAD DIAMOND
   → 26CB ⊀ white diamond in square
233B ⊀ APL FUNCTIONAL SYMBOL QUAD JOT
   → 29C7 ⊀ squared small circle
233C ⊀ APL FUNCTIONAL SYMBOL QUAD CIRCLE
233D ⊀ APL FUNCTIONAL SYMBOL CIRCLE STILE
233E ⊀ APL FUNCTIONAL SYMBOL CIRCLE JOT
   → 229A ⊀ circled ring operator
   → 29BE ⊀ circled white bullet
233F ⊀ APL FUNCTIONAL SYMBOL SLASH BAR
   → 1019A ⊀ roman as sign
2340 ⊀ APL FUNCTIONAL SYMBOL BACKSLASH BAR
   → 29F7 ⊀ reverse solidus with horizontal stroke
2341 ⊀ APL FUNCTIONAL SYMBOL QUAD SLASH
   → 29C4 ⊀ squared rising diagonal slash
2342 ⊀ APL FUNCTIONAL SYMBOL QUAD BACKSLASH
   → 29C5 ⊀ squared falling diagonal slash
2343 ⊀ APL FUNCTIONAL SYMBOL QUAD LESS-THAN
2344 ⊀ APL FUNCTIONAL SYMBOL QUAD GREATER-THAN
2345 ⊀ APL FUNCTIONAL SYMBOL LEFTWARDS VANE
2346 ⊀ APL FUNCTIONAL SYMBOL RIGHTWARDS VANE
2347 ⊀ APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW
2348 ⊀ APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW
2349 ⊀ APL FUNCTIONAL SYMBOL CIRCLE BACKSLASH
   → 2980 ⊀ reversed empty set
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

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Miscellaneous Technical 23B9

2375 ⍏ APL FUNCTIONAL SYMBOL OMEGA
2376 ⍎ APL FUNCTIONAL SYMBOL ALPHA UNDERBAR
2377 ⍍ APL FUNCTIONAL SYMBOL EPSILON UNDERBAR
2378 ⍎ APL FUNCTIONAL SYMBOL IOTA UNDERBAR
2379 ⍏ APL FUNCTIONAL SYMBOL OMEGA UNDERBAR
237A ⍏ APL FUNCTIONAL SYMBOL ALPHA

Graphics for control codes
237B ⍟ NOT CHECK MARK
   • from ISO 2047
   • symbol for Negative Acknowledge

Miscellaneous technical
237C ⎧ RIGHT ANGLE WITH DOWNWARDS ZIGZAG ARROW

Graphics for control codes
237D ⎨ SHOULDERED OPEN BOX
   • from ISO 9995-7
   • keyboard symbol for No Break Space
   → 2423 ⎫ open box
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
   = center
2386 ⍯ ENTER SYMBOL
2387 ⍱ ALTERNATIVE KEY SYMBOL
2388 ⍲HELMSYMBOL
   = control
   → 2638 ⍜ wheel of dharma
2389 ⍳ CIRCLED HORIZONTAL BAR WITH NOTCH
   = pause
238A ⍴ CIRCLED TRIANGLE DOWN
   = interrupt, break
238B ⍵ BROKEN CIRCLE WITH NORTHWEST ARROW
   = escape
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

Keyboard symbols from ISO 9995-7
2396 ⎡ DECIMAL SEPARATOR KEY SYMBOL

PREVIOUS PAGE 2397 ⎢
   → 1F519 ⎣ back with leftwards arrow above

NEXT PAGE 2398 ⎣

PRINT SCREEN SYMBOL 2399 ⎢

CLEAR SCREEN SYMBOL 239A ⎡
   → 20E2 ⎣ combining enclosing screen

Bracket pieces
239B ⎢ LEFT PARENTHESES UPPER HOOK
239C ⎣ LEFT PARENTHESES EXTENSION
239D ⎢ LEFT PARENTHESES LOWER HOOK
239E ⎣ RIGHT PARENTHESES UPPER HOOK
239F ⎢ RIGHT PARENTHESES EXTENSION
23A0 ⎣ RIGHT PARENTHESES 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 ⎣ top half integral
   → 2321 ⎢ bottom half integral
23AF ⎣ HORIZONTAL LINE EXTENSION
   • used for extension of arrows
   → 23D0 ⎡ vertical line extension

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
   → 2211 ⎣ n-ary summation

Horizontal brackets

These characters are also used as delimiters of vertical text in non-CJK terminal emulations.
23B4 ⎣ TOP SQUARE BRACKET
   → FE47 ⎢ presentation form for vertical left square bracket
23B5 ⎣ BOTTOM SQUARE BRACKET
   → FE48 ⎢ presentation form for vertical right square bracket
23B6 ⎣ BOTTOM SQUARE BRACKET OVER TOP SQUARE BRACKET
   • only used for terminal emulation

Terminal graphic characters
23B7 ⎢ RADICAL SYMBOL BOTTOM
23B8 ⎣ LEFT VERTICAL BOX LINE
23B9 ⎣ RIGHT VERTICAL BOX LINE

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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
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 WAVE
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
23CD ⬇ SQUARE FOOT

Keyboard and UI symbols
23CE ⬇ RETURN SYMBOL
• may be shown with either hollow or filled glyph
• 21B5 ➢ downwards arrow with corner leftwards
23CF ➢ EJECT SYMBOL
• UI symbol to eject media

Special character extension
23D0 ➢ VERTICAL LINE EXTENSION
• used for extension of arrows
• 23AF ← horizontal line extension

Metrical symbols
23D1 ↬ METRICAL BREVE
23D2 ⬣ METRICAL LONG OVER SHORT
23D3 ⬫ METRICAL SHORT OVER LONG
23D4 ⬢ METRICAL LONG OVER TWO SHORTS
23D5 ⬠ METRICAL TWO SHORTS OVER LONG
23D6 ⬡ METRICAL TWO SHORTS JOINED
23D7 ⬞ METRICAL TRISEME
23D8 ⬟ METRICAL TETRASEME
23D9 ⬠ METRICAL PENTASEME

Electrotechnical symbols
23DA ➢ EARTH GROUND
23DB ➞ FUSE

Horizontal brackets
These are intended for bracketing terms of mathematical expressions where their glyph extends to accommodate the width of the bracketed expression.
23DC ➢ TOP PARENTHESIS
• 23DD ➜ BOTTOM PARENTHESIS
23DE ➣ TOP CURLY BRACKET
• 23DF ➞ BOTTOM CURLY BRACKET
23E0 ➢ TOP TORTOISE SHELL BRACKET
• 23E1 ➣ BOTTOM TORTOISE SHELL BRACKET

Miscellaneous technical
23E2 ▼ WHITE TRAPEZIUM

Chemistry symbol
23E3 ⬇ BENZENE RING WITH CIRCLE

Miscellaneous technical
23E4 ➣ STRAIGHTNESS
23E5 ꞌ FLATNESS
23E6 ⾦ AC CURRENT
23E7 ⬒ ELECTRICAL INTERSECTION
23E8 ➣ DECIMAL EXPONENT SYMBOL
• 1D242 Ꭓ combining greek musical triseme
• 1D243 Ʝ combining greek musical tetrasiseme
• 1D244 Ꭓ combining greek musical pentaseme

User interface symbols
23E9 ➞ BLACK RIGHT-POINTING DOUBLE TRIANGLE
= fast forward
23EA ➞ BLACK LEFT-POINTING DOUBLE TRIANGLE
= fast rewind
<table>
<thead>
<tr>
<th>Code</th>
<th>Symbol</th>
<th>Description</th>
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<tr>
<td>23EB</td>
<td>⬆️</td>
<td>BLACK UP-POINTING DOUBLE TRIANGLE</td>
</tr>
<tr>
<td>23EC</td>
<td>⬇️</td>
<td>BLACK DOWN-POINTING DOUBLE TRIANGLE</td>
</tr>
<tr>
<td>23ED</td>
<td>⬆️️</td>
<td>BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR</td>
</tr>
<tr>
<td>23EE</td>
<td>⬇️️</td>
<td>BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR</td>
</tr>
<tr>
<td>23EF</td>
<td>⬆️️️</td>
<td>BLACK RIGHT-POINTING TRIANGLE WITH DOUBLE VERTICAL BAR</td>
</tr>
<tr>
<td>23F0</td>
<td>⏱</td>
<td>ALARM CLOCK</td>
</tr>
<tr>
<td></td>
<td>← 231A ⌚️</td>
<td>watch</td>
</tr>
<tr>
<td></td>
<td>← 1F550 ⏰</td>
<td>clock face one o'clock</td>
</tr>
<tr>
<td>23F1</td>
<td>⏯</td>
<td>STOPWATCH</td>
</tr>
<tr>
<td>23F2</td>
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<td>TIMER CLOCK</td>
</tr>
<tr>
<td>23F3</td>
<td>⏳</td>
<td>HOURGLASS WITH FLOWING SAND</td>
</tr>
<tr>
<td></td>
<td>← 231B ⌠</td>
<td>hourglass</td>
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