Miscellaneous Technical
Range: 2300–23FF

The Unicode Standard, Version 5.2
This file contains an excerpt from the character code tables and list of character names for
The Unicode Standard, Version 5.2.

Characters in this chart that are new for The Unicode Standard, Version 5.2 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/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-5.2/ for charts showing only the characters added in Unicode 5.2.
See http://www.unicode.org/Public/5.2.0/charts/ for a complete archived file of character code charts for Unicode 5.2.

Disclaimer
These charts are provided as the online reference to the character contents of the Unicode Standard, Version 5.2 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 file, please consult the appropriate sections of The Unicode
Standard, Version 5.2, online at http://www.unicode.org/versions/Unicode5.2.0/, 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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characters currently being considered for addition to the Unicode Standard can be found on the Unicode web site.


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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
  ➔ 22BC ⌍ top left half bracket
2306  ⌎ PERSPECTIVE
2307  ⌏ WAVY LINE
  ➔ 3030 ⌏ 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
  ➔ 2E25 ⌈ top left half bracket
  ➔ 300C ⌈ left corner bracket
2309  ⌋ RIGHT CEILING
  ➔ 2E24 ⌋ bottom left half bracket
  ➔ 300D ⌋ right corner bracket
2310  ⌊ LEFT FLOOR
  ➔ APL downstile
  ➔ 2E22 ⌊ top left half bracket
2311  ⌋ RIGHT FLOOR
  ➔ 3009 ⌋ bottom right half bracket
  ➔ 300B ⌋ bottom right half bracket

Crops

2312  ⌊ BOTTOM RIGHT CROP
  • set of four “crop” corners, arranged facing outward
2313  ⌊ BOTTOM LEFT CROP
2314  ⌊ TOP RIGHT CROP
2315  ⌊ TOP LEFT CROP

Miscellaneous technical

2316  ⌊ POSITION INDICATOR
2317  ⌋ VIEWDATA SQUARE
  ➔ 22DS ⌋ equal and parallel to
2318  ⌋ PLACE OF INTEREST SIGN
  ➔ 231A ⌋ watch
  ➔ 231B ⌋ hourglass

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 ⌍ 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
  ➔ 003E ⌍ less-than sign
  ➔ 2039 ⌍ single left-pointing angle quotation mark
  ➔ 27E8 ⌍ mathematical left angle bracket
  ➔ 300B ⌍ left angle bracket

232A  ⌍ RIGHT-POINTING ANGLE BRACKET
  ➔ 003E ⌍ greater-than sign
  ➔ 203A ⌍ single right-pointing angle quotation mark
  ➔ 27E9 ⌍ mathematical right angle bracket
  ➔ 3009 ⌍ right angle 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
2334 ▼ COUNTERBORE
2335 ▽ COUNTERSINK
2336 ⌽ CYLINDRICITY
2337 ▲ CYLINDRICITY
2338 ▼ CYLINDRICITY
2339 ▽ CYLINDRICITY
233A ◄ CYLINDRICITY
233B ◆ CYLINDRICITY
233C ◅ CYLINDRICITY
233D ◆ CYLINDRICITY
233E ◅ CYLINDRICITY
233F ◆ CYLINDRICITY
2340 ▲ CYLINDRICITY
2341 ▼ CYLINDRICITY
2342 ▽ CYLINDRICITY
2343 ◄ CYLINDRICITY
2344 ◆ CYLINDRICITY
2345 ◅ CYLINDRICITY
2346 ◆ CYLINDRICITY
2347 ◅ CYLINDRICITY
2348 ◆ CYLINDRICITY
2349 ◅ CYLINDRICITY
2350 ◆ CYLINDRICITY
2351 ◅ CYLINDRICITY
2352 ◆ CYLINDRICITY
2353 ◅ CYLINDRICITY
2354 ◆ CYLINDRICITY
2355 ◅ CYLINDRICITY
2356 ◆ CYLINDRICITY
2357 ◅ CYLINDRICITY
2358 ◆ CYLINDRICITY
2359 ◅ CYLINDRICITY
235A ◆ CYLINDRICITY
235B ◅ CYLINDRICITY
235C ◆ CYLINDRICITY
235D ◅ CYLINDRICITY
235E ◆ CYLINDRICITY
235F ◅ CYLINDRICITY
2360 ◆ CYLINDRICITY
2361 ◅ CYLINDRICITY
2362 ◆ CYLINDRICITY
2363 ◅ CYLINDRICITY
2364 ◆ CYLINDRICITY
2365 ◅ CYLINDRICITY
2366 ◆ CYLINDRICITY
2367 ◅ CYLINDRICITY
2368 ◆ CYLINDRICITY
2369 ◅ CYLINDRICITY
236A ◆ CYLINDRICITY
236B ◅ CYLINDRICITY
236C ◆ CYLINDRICITY
236D ◅ CYLINDRICITY
236E ◆ CYLINDRICITY
236F ◅ CYLINDRICITY
2370 ◆ CYLINDRICITY
2371 ◅ CYLINDRICITY
2372 ◆ CYLINDRICITY
2373 ◅ CYLINDRICITY
2374 ◆ CYLINDRICITY
2375 ◅ CYLINDRICITY
2376 ◆ CYLINDRICITY

APL

233F ⌽ APL FUNCTIONAL SYMBOL SQUARE BOX
2340 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2341 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2342 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2343 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2344 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2345 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2346 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2347 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2348 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2349 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2350 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2351 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2352 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2353 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2354 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2355 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2356 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2357 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2358 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2359 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
235A ⌽ APL FUNCTIONAL SYMBOL DIAMOND
235B ⌽ APL FUNCTIONAL SYMBOL DIAMOND
235C ⌽ APL FUNCTIONAL SYMBOL DIAMOND
235D ⌽ APL FUNCTIONAL SYMBOL DIAMOND
235E ⌽ APL FUNCTIONAL SYMBOL DIAMOND
235F ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2360 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2361 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2362 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2363 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2364 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2365 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2366 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2367 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2368 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2369 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
236A ⌽ APL FUNCTIONAL SYMBOL DIAMOND
236B ⌽ APL FUNCTIONAL SYMBOL DIAMOND
236C ⌽ APL FUNCTIONAL SYMBOL DIAMOND
236D ⌽ APL FUNCTIONAL SYMBOL DIAMOND
236E ⌽ APL FUNCTIONAL SYMBOL DIAMOND
236F ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2370 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2371 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2372 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2373 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2374 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2375 ⌽ APL FUNCTIONAL SYMBOL DIAMOND
2376 ⌽ APL FUNCTIONAL SYMBOL DIAMOND

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Miscellaneous Technical

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 ⊺ HELM SYMBOL
= 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 ⠰ apf functional symbol squish quad
→ 25AF ⠰ white vertical rectangle

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 ⌼ top half integral
→ 2321 ⌽ bottom half integral
23AF ⌽ HORIZONTAL LINE INTEGRAL
• used for extension of arrows
→ 23DO ⌽ 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 emulation.
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
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.

Dentistry notation symbols
23BE ☐ DENTISTRY SYMBOL LIGHT VERTICAL AND TOP RIGHT
   → 2308 ☐ left ceiling
23BF ☐ DENTISTRY SYMBOL LIGHT VERTICAL AND BOTTOM RIGHT
   → 230A ☐ left floor
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
   → 22A4 ☐ down tack
   → 252C ☐ box drawings light down and horizontal
23CA ☐ DENTISTRY SYMBOL LIGHT UP AND HORIZONTAL
   → 22A5 ☐ up tack
   → 2534 ☐ box drawings light up and horizontal
23CB ☐ DENTISTRY SYMBOL LIGHT VERTICAL AND TOP LEFT
   → 2309 ☐ right ceiling
23CC ☐ DENTISTRY SYMBOL LIGHT VERTICAL AND BOTTOM LEFT
   → 230B ☐ right floor

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
   → 1D242 ☐ combining greek musical triseme
23D8 ☐ METRICAL TETRASEME
   → 1D243 ☐ combining greek musical tetraste
e23D9 ☐ METRICAL PENTASEME
   → 1D244 ☐ combining greek musical 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
   → FE35 ☐ presentation form for vertical left parenthesis
23DD ☐ BOTTOM PARENTHESIS
   → FE36 ☐ presentation form for vertical right parenthesis
23DE ☐ TOP CURLY BRACKET
   → FE37 ☐ presentation form for vertical left curly bracket
23DF ☐ BOTTOM CURLY BRACKET
   → FE38 ☐ presentation form for vertical right curly bracket
23E0 ☐ TOP TORTOISE SHELL BRACKET
   → FE39 ☐ presentation form for vertical left tortoise shell bracket
23E1 ☐ BOTTOM TORTOISE SHELL BRACKET
   → FE3A ☐ presentation form for vertical right tortoise shell bracket

Miscellaneous technical
23E2 ☐ WHITE TRAPEZIUM

Chemistry symbol
23E3 ☐ BENZENE RING WITH CIRCLE

Miscellaneous technical
23E4 ☐ STRAIGHTNESS
23E5 ☐ FLATNESS
23E6 ☐ AC CURRENT
23E7 ☐ ELECTRICAL INTERSECTION
23E8 ☐ DECIMAL EXPONENT SYMBOL
   • Algol-60 token for scientific notation literals