

Some text
4 mSv⁻¹
More text
4 mSv⁻¹
Still red here! 1, 2, 3 and 4
Still red here!

m² s
μm²

0.094 π mm mrad

0.094 $\frac{1}{3}$ mm mrad

0.094 π/mm mrad³

1 Numbers

1.1 General

12 345.678 90

1 ± 2i

0.3 × 10⁴⁵

1.654 × 2.34 × 3.430

π

2π

π/3

123

1234

12 345

0.123

0.1234

0.123 45

3.45 × 10⁻⁴

-10¹⁰

123 × 10⁴

123(3) × 10⁴

123(2)

123 ± 2i

123 + 234i

(123 + 234i) × 10³

$$(123(1) + 234(1)i) \times 10^3$$

$$3i$$

$$3i \times 10^4$$

Pretty nonsensical stuff? $1.\pi \times 10^3$

1234.1234

$$3\xi$$

$$3\xi$$

$$3\xi$$

$$3\xi$$

$$3\xi$$

$$1.23(1)$$

$$1.23(1)$$

$$1.23(\pi)$$

1.2 Parsing numbers

1.2.1 input-digits, input-decimal-markers, input-signs, input-exponent-markers

1.2.2 input-symbols, input-ignore

1.2.3 input-comparators

$$<10$$

$$\leq 0.12$$

1.2.4 input-open-uncertainty, input-close-uncertainty, input-uncertainty-signs

$$9.99(9)$$

$$9.99(9)$$

$$9.99(9)$$

$$123.0(45)$$

$$12.3(60)$$

1.2.5 input-complex-roots

$$9.99 + 88.8i$$

$$9.99 + 88.8i$$

1.2.6 input-protect-tokens

1.2.7 parse-numbers

$\sqrt{2}$

1.3 Post-processing numbers

1.3.1 round-mode, round-precision

1.234 56

14.23

0.123 45(9)

1.235

14.230

0.123 45(9)

1.23

14.2

0.123 45(9)

1.3.2 round-integer-to-decimal

1

1

1.0

1.00

1.3.3 round-minimum

0.01

0.00

0.01

<0.01

1.3.4 round-half

0.06

0.05

0.06

0.04

1.3.5 add-decimal-zero, add-integer-zero

123.0

456

0.789
123.
456
.789

1.3.6 minimum-integer-digits

123
123
123
123
0123

1.3.7 explicit-sign, retain-explicit-sign

345
+345
-345
345

1.3.8 retain-unity-mantissa, retain-zero-exponent

1×10^4
 10^4
444
 444×10^0

1.3.9 scientific-notation, fixed-exponent

0.001
0.0100
1200
 1×10^{-3}
 1.00×10^{-2}
 1.200×10^3
 1×10^{-3}
 10.0×10^{-3}
 1.200×10^3
 $0.000\ 01 \times 10^2$
 $0.000\ 100 \times 10^2$
 12.00×10^2

1.3.10 omit-uncertainty

0.01(2)
0.01

1.4 Printing numbers

1.4.1 group-digits, group-four-digits,group-seperator

12 345.678 90
12345.67890
12345.678 90
12 345.67890

 12345.67890
12345.678 90
12 345.67890

 1 234 567 890.123 456 789 0
1 234 567 890.123 456 789 0

 12 345
12,345
12 345

1.4.2 group-minimum-digits

1234
1 234
1234.5678
1 234.567 8

1.4.3 output-complex-root,output-decimal-marker,copy-complex-root,copy-decimal-marker

1.23
1,23
1 + 2i
1 + 2*i*
1 + 2j
1 + 2*j*
555,555

1.4.4 complex-root-position

67 - 0.9i
67 - i0.9
67 - 0.9i

1.4.5 exponent-base, exponent-product

1×10^2
 $1 \cdot 10^2$
 1×2^2

1.4.6 output-exponent-marker

1e2
1E2

1.4.7 separate-uncertainty, uncertainty-separator, output-open-uncertainty, output-close-uncertainty

1.234(5)
1.234(5)
 1.234 ± 0.005
 1.234 ± 0.005
1.234 [5]
8.2(13)
8.2(13)
 8.2 ± 1.3
 8.2 ± 1.3

$1.234(5) \times \pi$
 $(1.234 \pm 0.005) \times \pi$

1.20(1)
 1.20 ± 0.01

1.4.8 bracket-numbers, open-bracket, close-bracket

1×10^{10}
 $2i \times 10^{10}$
 $(1 + 2i) \times 10^{10}$
 $1 + 2i \times 10^{10}$

$$\{1 + 2i\} \times 10^{10}$$

1.4.9 negative-color

-15 673

-15 673

1.4.10 bracket-negative-numbers

-15 673

(15 673)

1.5 Multi-part Numbers

1.5.1 input-product,input-quotient

$$1 \times 2 \times 3$$

$$1 \times 10^4 \times 2(3) \times 3/4$$

$$4 \times 5 \times 6$$

$$1/(2 \times 10^4)$$

$$1 \times 10^2 / (3 \times 10^4)$$

1.5.2 output-product, output-quotient

$$4.87 \cdot 5.321 \cdot 6.905\ 45$$

$$1 \text{ div } 2$$

1.5.3 quotient-mode

$$1/(2 \times 10^4)$$

$$\frac{1}{2 \times 10^4}$$

1.5.4 fraction-function

$$\frac{1}{\frac{1}{\frac{2}{\frac{1}{4}}}}$$

1.6 Lists and ranges of numbers

1.6.1 list-final-separator,list-pair-separator,list-separator

0.1, 0.2 and 0.3
0.1; 0.2 and 0.3
0.1, 0.2, 0.3
0.1 and 0.2 and finally 0.3
0.1 and 0.2
0.1, and 0.2

1.7 range-phrase

5 to 100
5–100

1.8 Angles

1.8.1 number-angle-product

2.67°
2.67 °

1.8.2 arc-separator

6°7'6.5''
6° 7' 6.5''

1.8.3 add-arc-degree-zero,add-arc-minute-zero,add-arc-second-zero

–1°
–2'
–3''
–1°
–0°2'
–0°3''
–1°0'
–2'
–0'3''
–1°0''
–2'0''
–3''
45.697°

Table 1: SI base units

| Unit | Macro | Symbol |
|----------|------------------------|--------|
| ampere | <code>\ampere</code> | A |
| candela | <code>\candela</code> | cd |
| kelvin | <code>\kelvin</code> | K |
| kilogram | <code>\kilogram</code> | kg |
| metre | <code>\metre</code> | m |
| mole | <code>\mole</code> | mol |
| second | <code>\second</code> | s |

Table 2: Coherent derived units

| Unit | Macro | Symbol | Unit | Macro | Symbol |
|---------------|-----------------------------|--------|-----------|-------------------------|--------|
| becquerel | <code>\becquerel</code> | Bq | newton | <code>\newton</code> | N |
| degreeCelsius | <code>\degreeCelsius</code> | °C | ohm | <code>\ohm</code> | Ω |
| coulomb | <code>\coulomb</code> | C | pascal | <code>\pascal</code> | Pa |
| farad | <code>\farad</code> | F | radian | <code>\radian</code> | rad |
| gray | <code>\gray</code> | Gy | siemens | <code>\siemens</code> | S |
| hertz | <code>\hertz</code> | Hz | sievert | <code>\sievert</code> | Sv |
| henry | <code>\henry</code> | H | steradian | <code>\steradian</code> | sr |
| joule | <code>\joule</code> | J | tesla | <code>\tesla</code> | T |
| katal | <code>\katal</code> | kat | volt | <code>\volt</code> | V |
| lumen | <code>\lumen</code> | lm | watt | <code>\watt</code> | W |
| lux | <code>\lux</code> | lx | weber | <code>\weber</code> | Wb |

1.8.4 angle-symbol-over-decimal

45.697°
6°7'6.5''
45°697
6°7'6''5

2 Units

2.1 Using units

kg kg km kg
a
a
a
e
e
a
a

Table 3: Non-SI units

| Unit | Macro | Symbol |
|-----------|-------------------------|--------|
| day | <code>\day</code> | d |
| degree | <code>\degree</code> | ° |
| hectare | <code>\hectare</code> | ha |
| hour | <code>\hour</code> | h |
| litre | <code>\litre</code> | l |
| liter | <code>\liter</code> | L |
| arcminute | <code>\arcminute</code> | ' |
| minute | <code>\minute</code> | min |
| arcsecond | <code>\arcsecond</code> | " |
| tonne | <code>\tonne</code> | t |

Table 4: Experimental Non-SI units

| Unit | Macro | Symbol |
|------------------|--------------------------------|---------|
| astronomicalunit | <code>\astronomicalunit</code> | ua |
| atomicmassunit | <code>\atomicmassunit</code> | u |
| bohr | <code>\bohr</code> | a_0 |
| clight | <code>\clight</code> | c_0 |
| dalton | <code>\dalton</code> | Da |
| electronmass | <code>\electronmass</code> | m_e |
| electronvolt | <code>\electronvolt</code> | eV |
| elementarycharge | <code>\elementarycharge</code> | e |
| hartree | <code>\hartree</code> | E_h |
| planckbar | <code>\planckbar</code> | \hbar |

Table 5: Other non-SI units

| Unit | Macro | Symbol |
|--------------|----------------------------|--------|
| angstrom | <code>\angstrom</code> | Å |
| bar | <code>\bar</code> | bar |
| barn | <code>\barn</code> | b |
| bel | <code>\bel</code> | B |
| decibel | <code>\decibel</code> | dB |
| knot | <code>\knot</code> | kn |
| mmHg | <code>\mmHg</code> | mmHg |
| nauticalmile | <code>\nauticalmile</code> | M |
| neper | <code>\neper</code> | Np |

Table 6: Other non-SI units

| Unit | Macro | Symbol | Power | Unit | Macro | Symbol | Power |
|-------|--------|--------|-------------------|-------|--------|--------|------------------|
| yocto | \yocto | y | 10 ⁻²⁴ | deca | \deca | da | 10 ¹ |
| zepto | \zepto | z | 10 ⁻²¹ | hecto | \hecto | h | 10 ² |
| atto | \atto | a | 10 ⁻¹⁸ | kilo | \kilo | k | 10 ³ |
| femto | \femto | f | 10 ⁻¹⁵ | mega | \mega | M | 10 ⁶ |
| pico | \pico | p | 10 ⁻¹² | giga | \giga | G | 10 ⁹ |
| nano | \nano | n | 10 ⁻⁹ | tera | \tera | T | 10 ¹² |
| micro | \micro | μ | 10 ⁻⁶ | peta | \peta | P | 10 ¹⁵ |
| milli | \milli | m | 10 ⁻³ | exa | \exa | E | 10 ¹⁸ |
| centi | \centi | c | 10 ⁻² | zetta | \zetta | Z | 10 ²¹ |
| deci | \deci | d | 10 ⁻¹ | yotta | \yotta | Y | 10 ²⁴ |

km

kg m s⁻¹
~~kg m s⁻¹~~
~~kg m s⁻¹~~
~~kg m s⁻¹~~
~~kg m s⁻¹~~

~~kg m s⁻¹~~
~~kg m s⁻¹~~
~~kg m s⁻¹~~
~~kg m s⁻¹~~
~~kg m s⁻¹~~

2.1.1 forbid-literal-units, inter-unit-product

F² lm cd
F² · lm · cd

2.1.2 per-mode, per-symbol, bracket-unit-denominator

J mol⁻¹ K⁻¹
m s⁻²
 $\frac{J}{\text{mol K}}$
 $\frac{J \text{ mol}^{-1}}{K}$
 $\frac{m}{s^2}$
A mol⁻¹ s
A smol⁻¹

Table 7: Abbreviated units

| Unit | Macro | Symbol |
|------|-------------------|--------|
| fg | \fg | fg |
| pg | \pg | pg |
| ng | \ng | ng |
| ug | \ug | µg |
| mg | \mg | mg |
| g | \g | g |
| kg | \kg | kg |
| amu | \amu | u |
| pm | \pm | pm |
| nm | \nm | nm |
| um | \um | µm |
| mm | \mm | mm |
| cm | \cm | cm |
| dm | \dm | dm |
| m | \m | m |
| km | \km | km |
| as | \as | as |
| fs | \fs | fs |
| ps | \ps | ps |
| ns | \ns | ns |
| us | \us | µs |
| ms | \ms | ms |
| s | \s | s |
| fmol | \fmol | fmol |
| pmol | \pmol | pmol |
| nmol | \nmol | nmol |
| umol | \umol | µmol |
| mmol | \mmol | mmol |
| mol | \mol | mol |
| kmol | \kmol | kmol |
| pA | \pA | pA |
| nA | \nA | nA |
| uA | \uA | µA |
| mA | \mA | mA |
| A | \A | A |
| kA | \kA | kA |
| ul | \ul | µl |
| ml | \ml | ml |
| l | \l | l |
| hl | \hl | hl |
| uL | \uL | µL |
| mL | \mL | mL |
| L | \L | L |
| hL | \hL | hL |
| mHz | \mHz | mHz |
| Hz | \Hz ¹² | Hz |
| kHz | \kHz | kHz |
| MHz | \MHz | MHz |
| GHz | \GHz | GHz |
| THz | \THz | THz |
| mN | \mN | mN |
| N | \N | N |
| kN | \kN | kN |

Table 8: Binary prefixes

| Unit | Macro | Symbol | Power |
|------|-------|--------|-------|
| kibi | \kibi | | |
| mebi | \mebi | | |
| gibi | \gibi | | |
| tebi | \tebi | | |
| pebi | \pebi | | |
| exbi | \exbi | | |
| zebi | \zebi | | |
| yobi | \yobi | | |

J/(mol K)
 m/s^2
 J div (mol K)
 J/mol K
 J/mol/K
 J/(mol K)

$\frac{\text{J}}{\text{mol K}}$

J/(mol K)
 $\frac{\text{J}}{\text{mol K}}$

J/(mol K)

2.1.3 sticky-per

Pa Gy⁻¹ H
 Pa Gy⁻¹ H⁻¹

2.1.4 power-font

m s^{-2}
 m s^{-2}

2.1.5 literal-superscript-as-power

m s^2
 m s^2

2.1.6 qualifier-mode, qualifier-phrase

$\text{kg}_{\text{pol}}^2 \text{mol}_{\text{cat}}^{-1} \text{h}^{-1}$

$\text{kg}(\text{pol})^2 \text{mol}(\text{cat})^{-1} \text{h}^{-1}$

$\text{kg}_{\text{pol}}^2 \text{mol}_{\text{cat}}^{-1} \text{h}^{-1}$

$(\text{kg pol})^2 (\text{mol cat})^{-1} \text{h}^{-1}$

dBi

$(\text{kgofpol})^2 (\text{molofcat})^{-1} \text{h}^{-1}$

$(\text{kgbypol})^2 (\text{molbycat})^{-1} \text{h}^{-1}$

2.1.7 prefixes-as-symbols

$\text{ml mol}^{-1} \text{dA}$

$10^{-4} \text{l mol}^{-1} \text{A}$

$10^{-1} \text{kg}^2 \text{s}$

$\text{Mg}^2 \text{ds}$

$10^5 \text{kg}^2 \text{s}$

$\mu\text{g}^2 \text{ds}$

$10^{-19} \text{kg}^2 \text{s}$

$\text{Mg}^{-2} \text{ds}$

$10^{-7} \text{kg}^{-2} \text{s}$

$\mu\text{g}^{-2} \text{ds}$

$10^{17} \text{kg}^{-2} \text{s}$

2.1.8 parse-units

2.2 Numbers with units

2.2.1 allow-number-unit-breaks

2.2.2 number-unit-product

2.67 F

2.67 F

2.67F

2.2.3 multi-part-units

$(12.3 \pm 0.4) \text{kg}$

$(12.3 \pm 0.4) \text{kg}$

$12.3 \text{kg} \pm 0.4 \text{kg}$

$12.3 \pm 0.4 \text{kg}$

$$1.234 \pm 0.005 \times 10^{-4}$$
$$(1.234 \pm 0.005) \times 10^{-4} \text{ m}$$

2.2.4 product-units

$$2 \text{ m} \times 3 \text{ m} \times 4 \text{ m}$$
$$(2 \times 3 \times 4) \text{ m}$$
$$(2 \times 3 \times 4) \text{ m}^3$$
$$2 \times 3 \times 4 \text{ m}^3$$
$$2 \text{ m} \times 3 \text{ m} \times 4 \text{ m}$$
$$2 \times 3 \times 4 \text{ m}$$

2.2.5 list-units,range-units

$$2 \text{ T}, 4 \text{ T}, 6 \text{ T and } 8 \text{ T}$$
$$(2, 4, 6 \text{ and } 8) \text{ T}$$
$$2 \text{ T}, 4 \text{ T}, 6 \text{ T and } 8 \text{ T}$$
$$2, 4, 6 \text{ and } 8 \text{ T}$$
$$2^\circ\text{C to } 4^\circ\text{C}$$
$$(2 \text{ to } 4)^\circ\text{C}$$
$$2^\circ\text{C to } 4^\circ\text{C}$$
$$2 \text{ to } 4^\circ\text{C}$$

2.2.6 exponent-to-prefix

$$1700 \text{ g}$$
$$1.7 \times 10^3 \text{ g}$$
$$1700 \text{ g}$$
$$1.7 \text{ kg}$$
$$1.700 \times 10^3 \text{ g}$$
$$1.7 \times 10^3 \text{ g}$$

3 Tabular material

Table 9: Standard behaviour of the S column type.

| Some Values |
|-------------------|
| 2.3456 |
| 34.2345 |
| -6.7835 |
| 90.473 |
| 5642.5 |
| 1.2×10^3 |
| 10^4 |

Table 10: Detection of surrounding material in an S column.

| Some Values |
|---------------------|
| 12.34 |
| 975.31 |
| 44.268 ^a |

Table 11: Controlling complex alignment with the tablenum macro.

| Heading | Heading | Heading | Heading |
|---------|-----------|---------|---------|
| Info | More info | | aaa |
| Info | More info | 88.999 | bbb |
| | 12.34 | | ccc |
| | 333.5567 | 33.435 | ddd |
| | 4563.21 | | |

Table 12: Units in tables.

| Unit |
|----------------------------|
| $\text{m}^2 \text{s}^{-1}$ |
| Pa |
| m s^{-1} |

Table 13: The `s` column processes everything.

| Unit | Unit |
|----------------|----------------|
| m ³ | m ³ |
| kg | kg |

3.0.1 table-parse-only

Table 14: Parsing without aligning in an `S` column.

| Decimal-centred | Simple centring |
|-------------------|-------------------|
| 12.345 | 12.345 |
| 6.78 | 6.78 |
| -88.8(9) | -88.8(9) |
| 4.5×10^3 | 4.5×10^3 |

3.0.2 table-number-alignment

Table 15: Aligning the `S` column.

| Some Values | Some Values | Some Values | Some Values |
|-------------|-------------|-------------|-------------|
| 2.3456 | 2.3456 | 2.3456 | 2.3456 |
| 34.2345 | 34.2345 | 34.2345 | 34.2345 |
| 56.7835 | 56.7835 | 56.7835 | 56.7835 |
| 90.473 | 90.473 | 90.473 | 90.473 |

3.0.3 table-figures-decimal, table-figures-exponent, table-figures-integer, table-figures-uncertainty

Table 16: Reserving space in `S` columns.

| Values | Values | Values | Values | Values | Values |
|--------|--------|----------|------------------|------------|---------------------|
| 2.3 | 2.3 | 2.3(5) | 2.3 ± 0.5 | 2.3 | 2.3×10^8 |
| 34.23 | 34.23 | 34.23(4) | 34.23 ± 0.04 | 34.23 | 34.23 |
| 56.78 | 56.78 | 56.78(3) | 56.78 ± 0.03 | -56.78 | 56.78×10^3 |
| 3.76 | 3.76 | 3.76(2) | 3.76 ± 0.02 | ± 3.76 | 10^6 |

3.0.4 table-comparator

Table 17: Reserving space for comparators in S columns.

| Values | Values |
|--------|--------------------------|
| 2.3 | $< 2.3 \times 10^8$ |
| 34.23 | $=34.23$ |
| 56.78 | $\geq 56.78 \times 10^3$ |
| 3.76 | $\gg 10^6$ |

3.0.5 table-format

Table 18: Using the table-format option.

| Values | Values | Values | Values | Values |
|--------|--------|----------|------------|---------------------|
| 2.3 | 2.3 | 2.3(5) | 2.3 | 2.3×10^8 |
| 34.23 | 34.23 | 34.23(4) | 34.23 | 34.23 |
| 56.78 | 56.78 | 56.78(3) | -56.78 | 56.78×10^3 |
| 3.76 | 3.76 | 3.76(2) | ± 3.76 | 10^6 |

3.0.6 table-space-text-pre, table-space-text-post

Table 19: Text before and after numbers.

| Values |
|----------------------|
| 2.3456 |
| 34.2345 ^a |
| 56.7835 |
| now 90.473 |

3.0.7 table-align-comparator, table-align-exponent, table-align-uncertainty

Table 20: The table-align-exponent option

| Header | Header |
|------------------------|------------------------|
| 1.2×10^3 | 1.2×10^3 |
| 1.234×10^{56} | 1.234×10^{56} |

Table 21: The `table-align-uncertainty` option

| Header | Header |
|---------------|---------------|
| 1.2 ± 0.1 | 1.2 ± 0.3 |
| 1.234 ± 0.005 | 1.234 ± 0.005 |

Table 22: The `table-align-comparator` option

| Header | Header |
|--------|--------|
| > 1.2 | >1.2 |
| <12.34 | <12.34 |

3.0.8 `table-omit-exponent`

Table 23: The `table-omit-exponent` option

| Header | Header / 10 ³ |
|-----------------------|--------------------------|
| 1.2 × 10 ³ | 1.2 |
| 3 × 10 ² | 0.3 |
| 1.0 × 10 ⁴ | 10 |

3.0.9 `table-align-text-pre,table-align-text-post`

3.0.10 `table-auto-round`

Table 24: The `table-auto-round` option.

| Header | Header |
|--------|--------|
| 1.2 | 1.200 |
| 1.2345 | 1.235 |

3.0.11 `parse-numbers`

Table 25: Aligning without parsing.

| Some values | Some values | Some values | Some values |
|-------------|-------------|-------------|-------------|
| 2.35 | 2.35 | 2.35 | 2.35 |
| 34.234 | 34.234 | 34.234 | 34.234 |
| 56.783 | 56.783 | 56.783 | 56.783 |
| 3.762 | 3.762 | 3.762 | 3.762 |
| $\sqrt{2}$ | $\sqrt{2}$ | $\sqrt{2}$ | $\sqrt{2}$ |

3.0.12 table-text-alignment

Table 26: Aligning text in **S** columns.

| Values | Values | Values |
|-----------|-----------|-----------|
| 992.435 | 992.435 | 992.435 |
| 7734.2344 | 7734.2344 | 7734.2344 |
| 56.7834 | 56.7834 | 56.7834 |
| 3.7462 | 3.7462 | 3.7462 |

3.0.13 table-unit-alignment

Table 27: Alignment options in **s** columns.

| Right – aligned | Centredtext | Left – aligned |
|-------------------|-------------------|-------------------|
| m s^{-1} | m s^{-1} | m s^{-1} |
| kg | kg | kg |

3.0.14 table-alignment

3.0.15 table-column-width

Table 28: Fixed-width columns.

| Flexible | Fixed | Flexible | Fixed |
|-------------------|-------------------|----------|-------|
| m s^{-1} | m s^{-1} | 1.23 | 1.23 |
| kg cd | kg cd | 45.6 | 45.6 |