

1.2°3'4" Some text  
4 m Sv<sup>-1</sup>  
More text  
4 m Sv<sup>-1</sup>  
Still red here! 1, 2, 3 and 4  
Still red here!

Unsemantic: m<sup>2</sup>s  
μm<sup>2</sup>

Semantic again: 0.094 π mm mrad

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

0.094  $\pi$ /mm mrad<sup>3</sup>

## 1 Numbers

### 1.1 General

12 345.678 90  
1 ± 2i  
 $0.3 \times 10^{45}$   
 $1.654 \times 2.34 \times 3.430$

123  
1234  
12 345  
0.123  
0.1234  
0.123 45  
 $3.45 \times 10^{-4}$   
 $-10^{10}$

$123 \times 10^4$   
 $123(3) \times 10^4$   
  
123(2)  
 $123 \pm 2i$   
 $123 + 234i$   
 $(123 + 234i) \times 10^3$   
 $(123(1) + 234(1)i) \times 10^3$   
3i  
 $(3i) \times 10^4$

Pretty nonsensical stuff?  
1234.1234

$3\xi$   
 $3\xi$

1.23(1)  
1.23(1)

## 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

### **1.3.3 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

0.789

### **1.3.6 minimum-integer-digits**

123  
123  
123  
123  
0123

### **1.3.7 explicit-sign, retain-explicit-plus**

345  
+345

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

$1 \times 10^4$   
 $10^4$   
444  
 $444 \times 10^0$

### **1.3.9 scientific-notation, fixed-exponent**

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

### **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

12 345

12,345

12 345

### 1.4.2 group-minimum-digits

1234

1 234

1234.5678

1 234.5678

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

1.23

1,23

1 + 2i

1 + 2i

1 + 2j

### 1.4.4 complex-root-position

67 – 0.9i

67 – i0.9

67 – 0.9i

#### **1.4.5 exponent-base, exponent-product**

$1 \times 10^2$

$1 \cdot 10^2$

$1 \times 2^2$

#### **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)

$1.234 \pm 0.005$

$1.234 \pm 0.005$

1.234 [5]

8.2(13)

8.2(13)

$8.2 \pm 1.3$

$8.2 \pm 1.3$

1.200(1)

$1.200 \pm 0.001$

#### **1.4.8 bracket-numbers, open-bracket, close-bracket**

$1 \times 10^{10}$

$(2i) \times 10^{10}$

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

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

#### **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

$1 \times 2 \times 3$

## 1.6 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 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

**5–100**

## 1.8 Angles

### 1.8.1 number-angle-product

$2.67^\circ$

$2.67^\circ$

### 1.8.2 arc-separator

$6^\circ 7' 6.5''$

$6^\circ 7' 6.5''$

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

$-1^\circ$

$-2'$

$-3''$

$-1^\circ$

$-0^\circ 2'$

$-0^\circ 3''$

$-1^\circ 0'$

Table 1: SI base units

Unit	Macro	Symbol
ampere	\ampere	A
candela	\candela	cd
\kelvin	K	
kilogram	\kilogram	kg
metre	\metre	m
mole	\mole	mol
second	\second	s

Table 2: Coherent derived units

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

$-2'$   
 $-0'3''$   
 $-1^{\circ}0''$   
 $-2'0''$   
 $-3''$   
 $45.697^{\circ}$   
 $45.697^{\circ}$

#### 1.8.4 angle-symbol-over-decimal

$45.697^{\circ}$   
 $6^{\circ}7'6.5''$   
 $45^{\circ}697$   
 $6^{\circ}7'6''.5$   
 $6^{\circ}7'6''.5$

Table 3: Non-SI units

Unit	Macro	Symbol
day	\day	d
degree	\degree	°
hectare	\hectare	ha
hour	\hour	h
litre	\litre	L
liter	\liter	L
arcminute	\arcminute	'
minute	\minute	min
arcsecond	\arcsecond	"
tonne	\tonne	t

Table 4: Experimental Non-SI units

Unit	Macro	Symbol
dalton	\dalton	Da
electronvolt	\electronvolt	eV

Table 5: Other non-SI units

Unit	Macro	Symbol
bel	\bel	B
decibel	\decibel	dB
nepер	\nepер	Np

Table 6: Other non-SI units

Unit	Macro	Symbol	Power	Unit	Macro	Symbol	Power
yocto	\yocto	ym	ym	deca	\deca	dam	dam
zepto	\zepto	zm	zm	hecto	\hecto	hm	hm
atto	\atto	am	am	kilo	\kilo	km	km
femto	\femto	fm	fm	mega	\mega	Mm	Mm
pico	\pico	pm	pm	giga	\giga	Gm	Gm
nano	\nano	nm	nm	tera	\tera	Tm	Tm
micro	\micro	μm	μm	peta	\peta	Pm	Pm
milli	\milli	mm	mm	exa	\exa	Em	Em
centi	\centi	cm	cm	zetta	\zetta	Zm	Zm
deci	\deci	dm	dm	yotta	\yotta	Ym	Ym

Table 7: Abbreviated units

Unit	Macro	Symbol
fg	\fg	fg
pg	\pg	pg
ng	\ng	ng
ug	\ug	$\mu$ g
mg	\mg	mg
g	\g	g
kg	\kg	kg
pm	\pm	pm
nm	\nm	nm
um	\um	$\mu$ m
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	$\mu$ s
ms	\ms	ms
s	\s	s
fmol	\fmol	fmol
pmol	\pmol	pmol
nmol	\nmol	nmol
umol	\umol	$\mu$ mol
mmol	\mmol	mmol
mol	\mol	mol
kmol	\kmol	kmol
pA	\pA	pA
nA	\nA	nA
uA	\uA	$\mu$ A
mA	\mA	mA
A	\A	A
kA	\kA	kA
uL	\uL	$\mu$ L
ml	\ml	mL
l	\l	L
hL	\hL	hL
uL	\uL	$\mu$ L
mL	\mL	mL
L	\L	L
hL	\hL	hL
mHz	\mHz	mHz
Hz	\Hz	Hz
kHz	\kHz	kHz
MHz	\MHz	MHz
GHz	\GHz	GHz
THz	\THz	THz
mN	\mN	mN
N	\N	N
kN	\kN	kN
MN	\MN	MN

Table 8: Binary prefixes

Unit	Macro	Symbol	Power
kibi	\kibi	Kim	Kim
mebi	\mebi	Mim	Mim
gibi	\gibi	Gim	Gim
tebi	\tebi	Tim	Tim
pebi	\pebi	Pim	Pim
exbi	\exbi	Eim	Eim
zebi	\zebi	Zim	Zim
yobi	\yobi	Yim	Yim

## 2 Units

### 2.1 Using units

kg kg kg  
a

a

a

e

e

a  
a

~~kg m s<sup>-1</sup>~~  
~~kg m s<sup>-1</sup>~~  
~~kg m s<sup>-1</sup>~~  
~~kg m s<sup>-1</sup>~~  
~~kg m s<sup>-1</sup>~~

~~kg m s<sup>-1</sup>~~  
~~kg m s<sup>-1</sup>~~  
~~kg m s<sup>-1</sup>~~  
~~kg m s<sup>-1</sup>~~  
~~kg m s<sup>-1</sup>~~

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

F<sup>2</sup> lm cd  
F<sup>2</sup> · lm · cd  
F<sup>2</sup> · lm · cd

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

$J \text{ mol}^{-1} \text{ K}^{-1}$	
$\text{m s}^{-2}$	
$\frac{J}{\text{mol K}}$	
$\frac{\text{J}}{\text{mol K}}$	
$\frac{\text{m}}{\text{s}^2}$	
$A \text{ mol}^{-1} \text{ s}$	
$A \text{ s mol}^{-1}$	
$J / (\text{mol K})$	
$\text{m/s}^2$	
$J \text{ div } (\text{mol K})$	
$J/\text{mol K}$	
$J/\text{mol/K}$	
$J/(\text{mol K})$	
	$\frac{J}{\text{mol K}}$
$J/(\text{mol K})$	
$\frac{J}{\text{mol K}}$	
	$J/(\text{mol K})$
	$J/(\text{mol K})$

### 2.1.3 sticky-per

$\text{Pa Gy}^{-1} \text{ H}$   
 $\text{Pa Gy}^{-1} \text{ H}^{-1}$

### 2.1.4 qualifier-mode, qualifier-phrase

$\text{kg}_{\text{pol}}^2 \text{ mol}_{\text{cat}}^{-1} \text{ h}^{-1}$	
$\text{kg}(\text{pol})^2 \text{ mol}(\text{cat})^{-1} \text{ h}^{-1}$	
$\text{kg}_{\text{pol}}^2 \text{ mol}_{\text{cat}}^{-1} \text{ h}^{-1}$	
$\text{kg pol}^2 \text{ mol cat}^{-1} \text{ h}^{-1}$	
$\text{dBi}$	
$\text{kgpol}^2 \text{ molcat}^{-1} \text{ h}^{-1}$	
$\text{kgbypol}^2 \text{ molbycat}^{-1} \text{ h}^{-1}$	

### 2.1.5 prefixes-as-symbols

$\text{mL mol}^{-1} \text{ dA}$   
 $\text{mL mol}^{-1} \text{ dA}$   
 $\text{kg}^2 \text{ ds}$

Mg<sup>2</sup> ds  
Mg<sup>2</sup> ds  
 $\mu$ g<sup>2</sup> ds  
 $\mu$ g<sup>2</sup> ds  
Mg<sup>-2</sup> ds  
Mg<sup>-2</sup> ds  
 $\mu$ g<sup>-2</sup> ds  
 $\mu$ g<sup>-2</sup> ds

### 2.1.6 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  
2.67 F  
2.67 F  
2.67 F  
2.67×F  
**2.67×F**

### 2.2.3 multi-part-units

(12.3 ± 0.4) kg  
(12.3 ± 0.4) kg  
12.3 kg ± 0.4 kg  
12.3 ± 0.4 kg

1.234 ± 0.005 × 10<sup>-4</sup>  
(1.234 ± 0.005) × 10<sup>-4</sup> m

### 2.2.4 product-units

2 m × 3 m × 4 m  
(2 × 3 × 4) m  
2 × 3 × 4 m<sup>3</sup>  
2 m × 3 m × 4 m  
2 × 3 × 4 m

### 2.2.5 list-units,range-units

2 T, 4 T, 6 T and 8 T

(2, 4, 6 and 8) T

2 T, 4 T, 6 T and 8 T

2, 4, 6 and 8 T

2 °C to 4 °C

(2 to 4) °C

2 °C to 4 °C

2 to 4 °C

### 2.2.6 exponent-to-prefix

1700 g

$1.7 \times 10^3$  g

1700 g

1.7 kg

$1.700 \times 10^3$  g

$1.7 \times 10^3$  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
$1.2 \times 10^3$
$10^4$

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

Some Values
12.34
975.31
44.268 <sup>a</sup>

Table 11: Controlling complex alignment with the `tablenum` macro.

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

### 3.0.1 table-parse-only

Table 12: 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)
$4.5 \times 10^3$	$4.5 \times 10^3$

### 3.0.2 table-number-alignment

Table 13: 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 14: Reserving space in `S` columns.

Values	Values	Values	Values	Values	Values
2.3	2.3	2.3(5)	$2.3 \pm 0.5$	2.3	$2.3 \times 10^8$
34.23	34.23	34.23(4)	$34.23 \pm 0.04$	34.23	34.23
56.78	56.78	56.78(3)	$56.78 \pm 0.03$	-56.78	$56.78 \times 10^3$
3.76	3.76	3.76(2)	$3.76 \pm 0.02$	$\pm 3.76$	$10^6$

### 3.0.4 table-comparator

Table 15: 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 16: Using the `table-format` option.

Values	Values	Values	Values	Values
2.3	2.3	2.3(5)	2.3	$2.3 \times 10^8$
34.23	34.23	34.23(4)	34.23	34.23
56.78	56.78	56.78(3)	-56.78	$56.78 \times 10^3$
3.76	3.76	3.76(2)	$\pm 3.76$	$10^6$

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

Table 17: Text before and after numbers.

Values
2.3456
34.2345 <sup>a</sup>
56.7835
now 90.473

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

Table 18: The `table-align-exponent` option

Header	Header
$1.2 \times 10^3$	$1.2 \times 10^3$
$1.234 \times 10^{56}$	$1.234 \times 10^{56}$

Table 19: The `table-align-uncertainty` option

Header	Header
$1.2 \pm 0.1$	$1.2 \pm 0.3$
$1.234 \pm 0.005$	$1.234 \pm 0.005$

Table 20: The `table-align-comparator` option

Header	Header
$> 1.2$	$>1.2$
$<12.34$	$<12.34$

### 3.0.8 table-omit-exponent

Table 21: The `table-omit-exponent` option

Header	Header / 1
$1.2 \times 10^3$	1.2
$3 \times 10^2$	0.3
$1.0 \times 10^4$	10

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

### 3.0.10 table-auto-round

Table 22: The `table-auto-round` option.

Header	Header
1.2	1.2
1.2345	1.2345

### 3.0.11 parse-numbers

Table 23: 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 24: 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