

Conversion table

Power, Energy, Heat

1 Nm	= 1,0000	J	1 PSh	= 2,6478 · 10 ⁶	J
1 Ws	= 1,0000	J	1 Btu	= 1,0551 · 10 ³	J
1 dyn cm	= 1,0000 · 10 ⁻⁷	J	1 Chu	= 1,8991 · 10 ³	J
1 erg	= 1,0000 · 10 ⁻⁷	J	1 ftpdl	= 4,2139 · 10 ⁻²	J
1 Dyn m	= 1,0000	J	1 ftlbf	= 1,3558	J
1 kp m	= 9,8067	J	1 hphr (britisch)	= 2,6845 · 10 ⁶	J
1 kcal	= 4,1868 · 10 ³	J	1 therm	= 1,0551 · 10 ⁸	J
1 kWh	= 3,6000 · 10 ⁶	J			

Density

1 grain/ft ³	= 2,2884 · 10 ⁻³	kg/m ³	1 lb/UKgal	= 9,9779 · 10	kg/m ³
1 lb/ft ³	= 1,6018 · 10	kg/m ³	1 lb/USgal	= 1,1983 · 10 ²	kg/m ³

Pressure

1 bar	= 1,000 · 10 ⁵	Pa	1 pdl/ft ²	= 1,4881	Pa
1 at	= 9,8067 · 10 ⁴	Pa	1 lbf	= 4,7880 · 10	Pa
1 kp/cm ²	= 9,8067 · 10 ⁴	Pa	1 pdl/in ²	= 2,1429 · 10 ²	Pa
1 atm	= 1,0133 · 10 ⁵	Pa	1 in water	= 2,4909 · 10 ²	Pa
1 Torr	= 1,3332 · 10 ²	Pa	1 ft water	= 2,9891 · 10 ³	Pa
1 mmHg (1 mm QS)	= 1,3332 · 10 ²	Pa	1 in Hg (1 in mercury)	= 3,3866 · 10 ³	Pa
1 mm wk	= 9,8067	Pa	1 lbf / in ² (psi)	= 6,8948 · 10 ³	Pa
1 dyn/cm ²	= 1,0000 · 10 ⁻¹	Pa	1 ton f/in ²	= 1,5444 · 10 ⁷	Pa

Energy see Power

Enthalpy, see Power

Enthalpy, specific

1 kcal/kg	= 4,1868 · 10 ³	J/kg	1 Chu/lb	= 4,1868 · 10 ³	J/kg
1 Btu/lb	= 2,3260 · 10 ³	J/kg			

Force

1 kp	= 9,8067	N	1 pdl	= 1,3825 · 10 ⁻¹	N
1 dyn	= 1,0000 · 10 ⁻⁵	N	1 lbf	= 4,4482	N
1 Dyn	= 1,0000	N	1 tonf	= 9,9640 · 10 ³	N

Length

1 Å	= 1,0000 · 10 ⁻¹⁰	m	1 mile (statute)	= 1,6094 · 10 ³	m
1 μ (micron)	= 1,0000 · 10 ⁻⁶	m	1 mile (nautical)	= 1,8533 · 10 ³	m
1 in	= 2,5400 · 10 ⁻²	m	1 rod = 1 perch = 5,5 yd	= 5,292	m
1 ft = 12 in	= 3,0480 · 10 ⁻¹	m	1 chain	= 2,0117	m
1 yd = 3 ft = 36 in	= 9,1440 · 10 ⁻¹	m	1 furlong	= 2,0117 · 10 ²	m
1 thou	= 2,5400 · 10 ⁻⁵	m			

Mass

1 kps ² /m	= 9,80665	kg	1 ton(short)=20 cwt brit.	= 9,0718 · 10 ²	kg
1 grain	= 6,4800 · 10 ⁻⁵	kg	1 ton(long)=20 cwt UK	= 1,0160 · 10 ³	kg
1 lb	= 4,5359 · 10 ⁻¹	kg			

VDL Klima bv
Meerenakkerweg 30, 5652 AV Eindhoven
P.O. Box 300, 5600 AH Eindhoven,
The Netherlands

Phone +31 (0)40-2981818
Fax +31 (0)40-2981800
E-mail info@klima.com
Internet www.klima.com

Postbank 106 5525
ABN AMRO Bank 52.72.44.929
BTW/VAT NL804935208B01
CR Eindhoven 17093609
IBAN:NL11ABNA0527244929
BIC:ABNANL2A

Massaflow

1 lb/hr	= 1,2600 · 10 ⁻⁴ kg/s	1 ton/hr (short)	= 2,5200 · 10 ⁻¹ kg/s
1 ton/day (short)	= 1,0500 · 10 ⁻² kg/s	1 ton/hr (long)	= 2,8224 · 10 ⁻¹ kg/s
1 ton/day (long)	= 1,1760 · 10 ⁻² kg/s		

Massflow density

1 lb/hr ft ²	= 1,3562 · 10 ⁻³ kg/m ² s	1 lb/s ft ²	= 4,8824 kg/m ² s
1 kg/hr ft ²	= 2,9900 · 10 ⁻³ kg/m ² s		

Area

1 in ²	= 6,4516 · 10 ⁻⁴ m ²	1 acre	= 4,0469 · 10 ³ m ²
1 ft ²	= 9,2903 · 10 ⁻² m ²	1 mile ²	= 2,5900 · 10 ⁶ m ²
1 yd ²	= 8,3613 · 10 ⁻¹ m ²		

Speed

1 ft/hr	= 8,4667 · 10 ⁻⁵ m/s	1 ft/s	= 3,0480 · 10 ⁻¹ m/s
1 ft/min	= 5,0800 · 10 ⁻³ m/s	1 mile/hr	= 4,4704 · 10 ⁻¹ m/s

Expansion (volume)

1 g/cm ³ °C	= 1,0000 · 10 ³ kg/m ³ K	1 lb/ft ³ °F	= 2,8833 · 10 kg/m ³ K
1 lb/ft ³ °C	= 1,6018 · 10 kg/m ³ K		

Power, heatflow

1 m kp/s	= 9,80665 W	1 ft pdl/s	= 4,2139 · 10 ⁻² W
1 kcal/h	= 1,1630 W	1 Btu/hr	= 2,9308 · 10 ⁻¹ W
1 erg/s	= 1,0000 · 10 ⁻⁷ W	1 Chu/hr	= 5,2754 · 10 ⁻¹ W
1 PS	= 7,3548 · 10 ² W	1 hp (british)	= 7,4570 · 10 ² W
1 m ³ atm/h	= 2,8150 · 10 W	1 ton refrigeration	= 3,5169 · 10 ³ W
1 ft lbf/min	= 2,2597 · 10 ⁻² W	1 therm/hr	= 2,9308 · 10 ⁴ W
1 ft lbf/s	= 1,3558 W		

Acceleration

1 ft/s ²	= 3,0480 · 10 ⁻¹ m/s ²
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Viscosity, dynamic

1 kp s/m ²	= 9,80665 Pa s	1 lb/ft hr	= 4,1338 · 10 ⁻⁴ Pa s
1 kp h/m ²	= 3,532 · 10 ⁻⁴ Pa s	1 kg/ft hr	= 9,1134 · 10 ⁻⁴ Pa s
1 Poise = 1 g/cm s	= 1,0000 · 10 ⁻¹ Pa s	1 lb/ft s	= 1,4882 Pa s

Viscosity, kinematic

1 Stoke = 1 cm ² /s	= 1,0936 · 10 ⁻⁵ m ² /s	1 ft ² /s	= 9,2903 · 10 ⁻² m ² /s
1 ft ² /hr	= 2,5806 · 10 ⁻⁵ m ² /s		

Volume

1 in ³	= 1,6387 · 10 ⁻⁵ m ³	1 gill	= 1,1829 · 10 ⁻⁴ m ³
1 ft ³	= 2,8317 · 10 ⁻¹⁰ m ³	1 register ton = 100 ft ³	= 2,8317 m ³
1 yd ³	= 7,6455 · 10 ⁻¹ m ³	1 quater	
1 US gal	= 3,7853 · 10 ⁻³ m ³		= 8 UK bushels
1 UK gal	= 4,5460 · 10 ⁻³ m ³		= 32 pecks
1 US bushel (dry)	= 3,5239 · 10 ⁻² m ³		= 64 UK gallons
1 UK bushel (dry)	= 3,6369 · 10 ⁻² m ³		= 256 quarts
1 barrel (petroleum US)	= 1,5898 · 10 ⁻¹ m ³		= 512 pints
1 lube oil barrel	= 2,0819 · 10 ⁻¹ m ³		= 2,9095 · 10 ⁻¹ m ³

VDL Klima bv
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P.O. Box 300, 5600 AH Eindhoven,
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Phone +31 (0)40-2981818
Fax +31 (0)40-2981800
E-mail info@klima.com
Internet www.klima.com

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Volume, specific

$$1 \text{ ft}^3/\text{kg} = 2,8317 \cdot 10^{-2} \text{ m}^3/\text{kg}$$

$$1 \text{ ft}^3/\text{lb} = 6,2428 \cdot 10^{-2} \text{ m}^3/\text{kg}$$

Volume flow

$1 \text{ ft}^3/\text{hr}$	$= 7,8658 \cdot 10^{-6} \text{ m}^3/\text{s}$	1 UK gal/hr	$= 1,2628 \cdot 10^{-6} \text{ m}^3/\text{s}$
$1 \text{ ft}^3/\text{min} - 1 \text{ cfm}$		$1 \text{ barrel/day(petrol.US)}$	$= 1,8401 \cdot 10^{-6} \text{ m}^3/\text{s}$
$= (1,7 \text{ m}^3/\text{h}) = 1 \text{ cu min}$	$= 4,7195 \cdot 10^{-4} \text{ m}^3/\text{s}$	1 US gal/min	$= 6,3089 \cdot 10^{-5} \text{ m}^3/\text{s}$
$1 \text{ ft}^3/\text{s} = 1 \text{ cu sec}$	$= 2,8317 \cdot 10^{-2} \text{ m}^3/\text{s}$	1 UK gal/min	$= 7,5766 \cdot 10^{-5} \text{ m}^3/\text{s}$
1 US gal/hr	$= 1,0515 \cdot 10^{-6} \text{ m}^3/\text{s}$	$1 \text{ mgd} = 10^6 \text{ UK gal/day}$	$= 5,2617 \cdot 10^{-2} \text{ m}^3/\text{s}$

Heat, zie Power

Heattransfer, transmission

$1 \text{ Kcal/m}^2 \text{ h } ^\circ\text{C}$	$= 1,1630 \text{ W/m}^2 \text{ K}$	$1 \text{ Btu/ft}^2 \text{ hr } ^\circ\text{F}$	$= 5,6785 \text{ W/m}^2 \text{ K}$
$1 \text{ cal/cm}^2 \text{ s } ^\circ\text{C}$	$= 4,1868 \cdot 10^4 \text{ W/m}^2 \text{ K}$	$1 \text{ Chu/ft}^2 \text{ hr } ^\circ\text{C}$	$= 5,6783 \text{ W/m}^2 \text{ K}$
$1 \text{ kcal/ft}^2 \text{ hr } ^\circ\text{C}$	$= 1,2518 \cdot 10 \text{ W/m}^2 \text{ K}$		

Thermal conductivity

$1 \text{ kcal/m h } ^\circ\text{C}$	$= 1,1630 \text{ W/mK}$	$1 \text{ Btu/ft hr } ^\circ\text{F}$	$= 1,7308 \text{ W/mK}$
$1 \text{ cal/cm s } ^\circ\text{C}$	$= 4,1868 \cdot 10^2 \text{ W/mK}$	$1 \text{ Chu/ft hr } ^\circ\text{C}$	$= 1,7308 \text{ W/mK}$
$1 \text{ Btu/ft}^2 \text{ hr } (^\circ\text{F/in})$	$= 1,4423 \cdot 10^{-1} \text{ W/mK}$		

Heatfigures (volume)

1 kcal/m^3	$= 4,1868 \cdot 10^3 \text{ J/m}^3$	1 Chu/ft^3	$= 6,7067 \cdot 10^4 \text{ J/m}^3$
1 Btu/ft^3	$= 3,7260 \cdot 10^4 \text{ J/m}^3$	1 therm/ft^3	$= 3,7260 \cdot 10^9 \text{ J/m}^3$

Heatcapacity, specific

$1 \text{ kcal/kg } ^\circ\text{C}$	$= 4,1868 \cdot 10^3 \text{ J/kg K}$	$1 \text{ Btu/lb } ^\circ\text{F}$	$= 4,1868 \cdot 10^3 \text{ J/kg K}$
$1 \text{ cal/g } ^\circ\text{C}$	$= 4,1868 \cdot 10^3 \text{ J/kg K}$	$1 \text{ Chu/lb } ^\circ\text{C}$	$= 4,1868 \cdot 10^3 \text{ J/kg K}$

Heatflux

$1 \text{ kcal/m}^2 \text{ h}$	$= 1,1630 \text{ W/m}^2$	$1 \text{ Btu/ft}^2 \text{ hr}$	$= 3,1546 \text{ W/m}^2$
$1 \text{ kcal/ft}^2 \text{ hr}$	$= 1,2518 \cdot 10 \text{ W/m}^2$	$1 \text{ Chu/ft}^2 \text{ hr}$	$= 5,6784 \text{ W/m}^2$
$1 \text{ cal/cm}^2 \text{ s}$	$= 4,1868 \cdot 10^4 \text{ W/m}^2$		

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