

GENERAL HEATING DATA

• Maximum Recommended Thermostat Settings

Soft water areas or where an efficient water softener is installed: up to 82°C (180°F)

Medium hard water areas: up to 71°C (160°F)

Very hard water areas: up to 65°C (150°F)

Note: The scald temperature of water is 60°C.

• Suggested Volume of Water Required for General Household Purpose

Bath : 114 litres (25 gallons) at 43°C (110°F)

Basin : 4.5 litres (1 gallon) at 43°C (110°F)

Dishwashing : 4.5 - 9 litres (1 - 2 gallons) at 43°C (110°F)

Shower : 4.5 - 9 litres per minute (1-2 gallons per minute) at 43°C (110°F)

FLANGE DETAILS

• B.S.P. (British Standard Pipe) Threads

It should be noted that the diameter across the threads is not equal to the nominal thread size, i.e. A diameter of 2½" across the threads would equate to a 2¼" BSP thread.

(Assuming the thread is a parallel BSP thread)

Imperial		Metric	
BSP (Nominal Bore)	Approx. Diameter Across Threads	BSP (Nominal Bore)	Approx. Diameter Across Threads
1/4"	1/2"	-	13
1/2"	7/8"	15	21
3/4"	1"	22	26.5
1"	1.3/8"	28	33
1.1/2"	1.7/8"	35	48
2"	2.5/16"	54	59.5
2.1/4"	2.1/2"	-	66
2.1/2"	3"	67	75

BS EN 1092-1 PN6 (6 Bar) : As specified in our standard catalogue ranges

Nominal Size DN	Flange Thickness		O/D	No. of Bolt Holes	Size of Bolt Holes	PCD of Bolt Holes	Enclosure Depth
	Brass	Steel					
50	12	14	140	4	14	110	150
100	14	16	210	4	18	170	150
150	14	18	265	8	18	225	150
200	18	20	320	8	18	280	150
250	20	22	375	12	18	335	180
300	24	22	440	12	22	395	250
350	26	24	490	12	22	445	250
400	30	28	540	16	22	495	250
450	32	30	595	16	22	550	250
500	32	32	645	20	22	600	250

BS EN 1092-1 PN10 (10 Bar)

Nominal Size DN	Flange Thickness		O/D	No. of Bolt Holes	Size of Bolt Holes	PCD of Bolt Holes	Enclosure Depth
	Brass	Steel					
50	16	18	165	4	18	125	150
100	18	20	220	8	18	180	150
150	18	22	285	8	22	240	150
200	20	24	340	8	22	295	150
250	22	26	395	12	22	350	180
300	26	26	445	12	22	400	250
350	28	26	505	16	22	460	250
400	32	26	565	16	26	515	250
450	34	28	615	20	26	565	250
500	38	28	670	20	26	620	250

STATEMENT OF POLICY

- The Material Nicalloy 825 is equivalent to Incoloy 825 which is equivalent to NA16 (BS 3073, 1977) and the material Nicalloy 800 is equivalent to Incoloy 800 which is equivalent to NA15 (BS 3073, 1977)

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GENERAL TECHNICAL

- 230V European Harmonization. From the 1st January 1995, the official voltage within the U.K. is 230V single phase or 400V three phase in accordance with CENELEC Harmonization Document HD472-SI.

This has been achieved by widening the tolerance bands and full harmonization will not be completed before 2020. For this reason, all heaters specified in this catalogue are suitable for 230V single phase or 400V three phase, however the stated loadings are calculated at either 240V single phase or 415V three phase, which ever is appropriate.

GENERAL DATA

• Conversions

LENGTH

1 inch = 0.2833 ft = 25.4mm

1 ft = 12 in = 30.48cm

1 yd = 3ft = 0.9144m

1 mile = 1760 yds = 1.609km

1mm = 0.001m = 0.03637 in

1cm = 10mm = 0.3937 in

1m = 1000mm = 3.28 ft or 1.0936 yds

1km = 1000m = 3280 ft or 1094 yds or 0.622 miles

AREA

1 mm² = 1 x 10⁻⁶m² or 0.01cm²

1cm² = 100mm² = 0.155 in²

1m² = 10,000cm² = 10.76 ft² or 1.196 yd²

1km² = 1,000,000m² = 0.3961 sq miles

1 in² = 6.452cm² or 645.2mm²

1 ft² = 144 in² = 929cm² or 0.0929m²

1 yd² = 9 ft² = 0.8361m²

1 sq mile = 2.59km²

CAPACITY

1 ml = 1cm³ or 1000mm³

1 litre = 1000ml = 0.22 gallons

1 m³ = 1000 litres = 220 gallons

1 gallon = 4.546 litres or 0.004546m³

1 ft³ = 0.02839m³

1 litre of water = 1kg or 2.2lbs

1 gallon of water = 10lbs or 4.54kg

TEMPERATURE

1°C = (1°F - 32) x 5/9

1°F = (1°C x 9/5) + 32

SURFACE HEATING

1 W/in² = 6.45 W/cm²

1W/cm² = 0.155 W/in²

PRESSURE

1 Bar = 100kNm⁻² or 100kPa = 14.5 lb/in²

1kNm⁻² = 1kPa or 0.01 Bar = 0.145 lb/in²

1 lb/in² = 0.06895 Bar or 6.895kPa or 6.895kNm⁻²

ENERGY

1 kW = 1000Js⁻¹

1kWhr = 1kW for 1 hour = 3600kJ = 3412 BTU's or 860kcal

1 kJ = 0.2388kcal or 0.952 BTU's

1 kcal = energy required to raise 1kg of water through 1°C = 4187 joules or 3.97 BTU's

WEIGHT

1 kg = 1000g = 2.2046 lbs

1 lb = 16oz = 0.454kg

1 ton = 2240lbs = 1.016 tonnes

1 tonne = 1000kg = 0.984 ton