

# PSYCHROMETRIC CHART

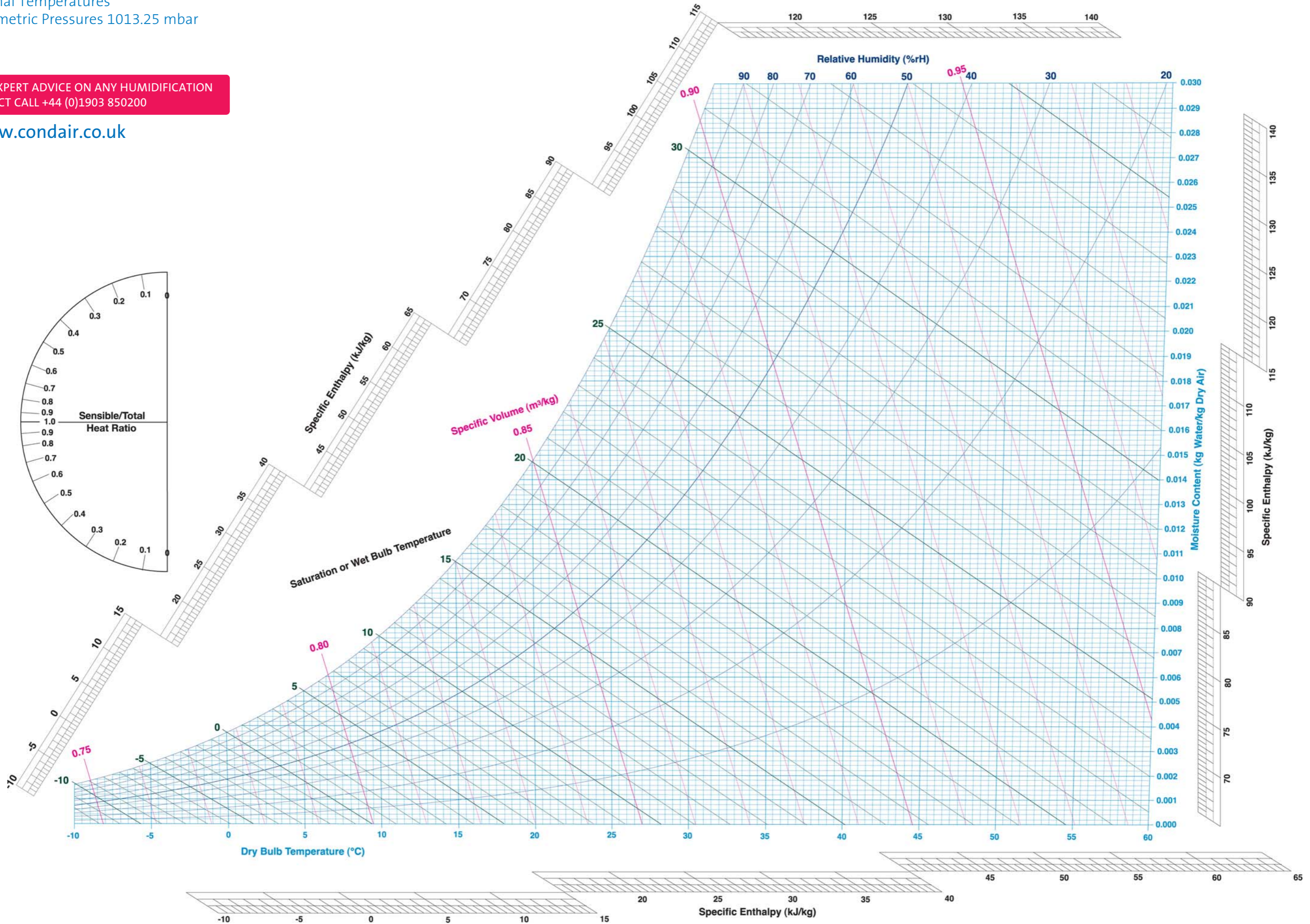
Normal Temperatures  
Barometric Pressures 1013.25 mbar



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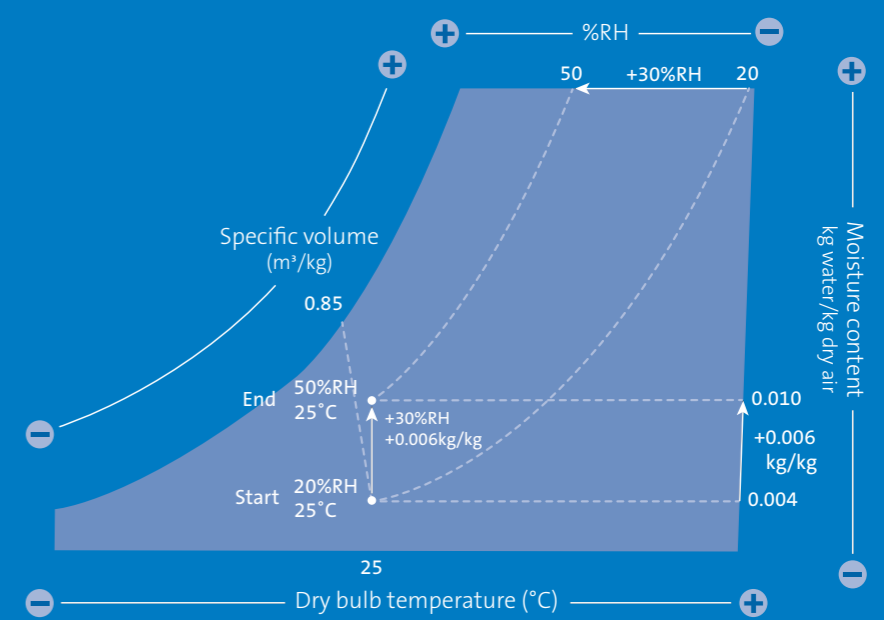


# IN-DUCT HUMIDIFIERS

# DIRECT ROOM HUMIDIFIERS

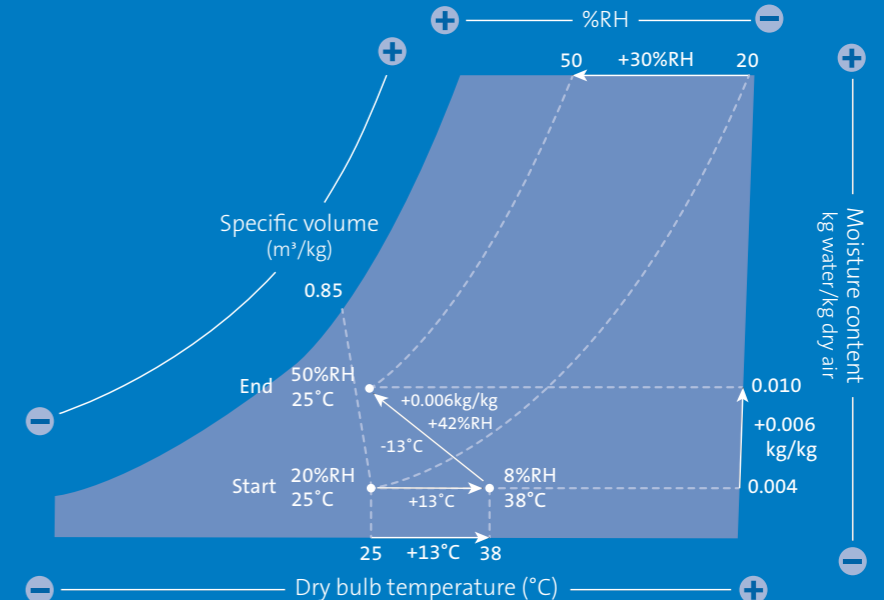
# PROCESS EXAMPLES

ISOTHERMAL



ISOTHERMAL

ADIABATIC



ADIABATIC

## IN-DUCT LOAD CALC

The desired room condition is 50%RH at 25°C. An AHU supplies air at 3m³/s. 80% is re-circulated from the building itself and 20% is fresh air, which is pre-heated to 25°C (min 20%RH prior to humidifier).

The required humidifier duty is:

$$\frac{\text{Moisture} \times \text{air vol} \times \text{fresh air \%}}{\text{Specific volume}} = \text{humidity load}$$

$$\frac{0.006\text{kg/kg} \times 3\text{m}^3/\text{s} \times 3,600 \times 0.2}{0.85\text{m}^3/\text{kg}} = 15.25\text{kg/h}$$

## DIRECT ROOM LOAD CALC

The desired room condition is 50%RH at 25°C in a production area of 3,600m³ with 2.5 air changes per hour and a current minimum humidity of 20%RH.

The required humidifier duty is:

$$\frac{\text{Moisture} \times \text{air vol} \times \text{no. of air changes}}{\text{Specific volume}} = \text{humidity load}$$

$$\frac{0.006\text{kg/kg} \times 3,600\text{m}^3 \times 2.5}{0.85\text{m}^3/\text{kg}} = 63.53\text{kg/h}$$

CALC EXAMPLES

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