CARSON SOLUTIONS

www.carsonsolutions.com

PSYCHROMETRIC CHART

Normal Temperature

I-P Units

SEA LEVEL

BAROMETRIC PRESSURE: 29.921 in. HG

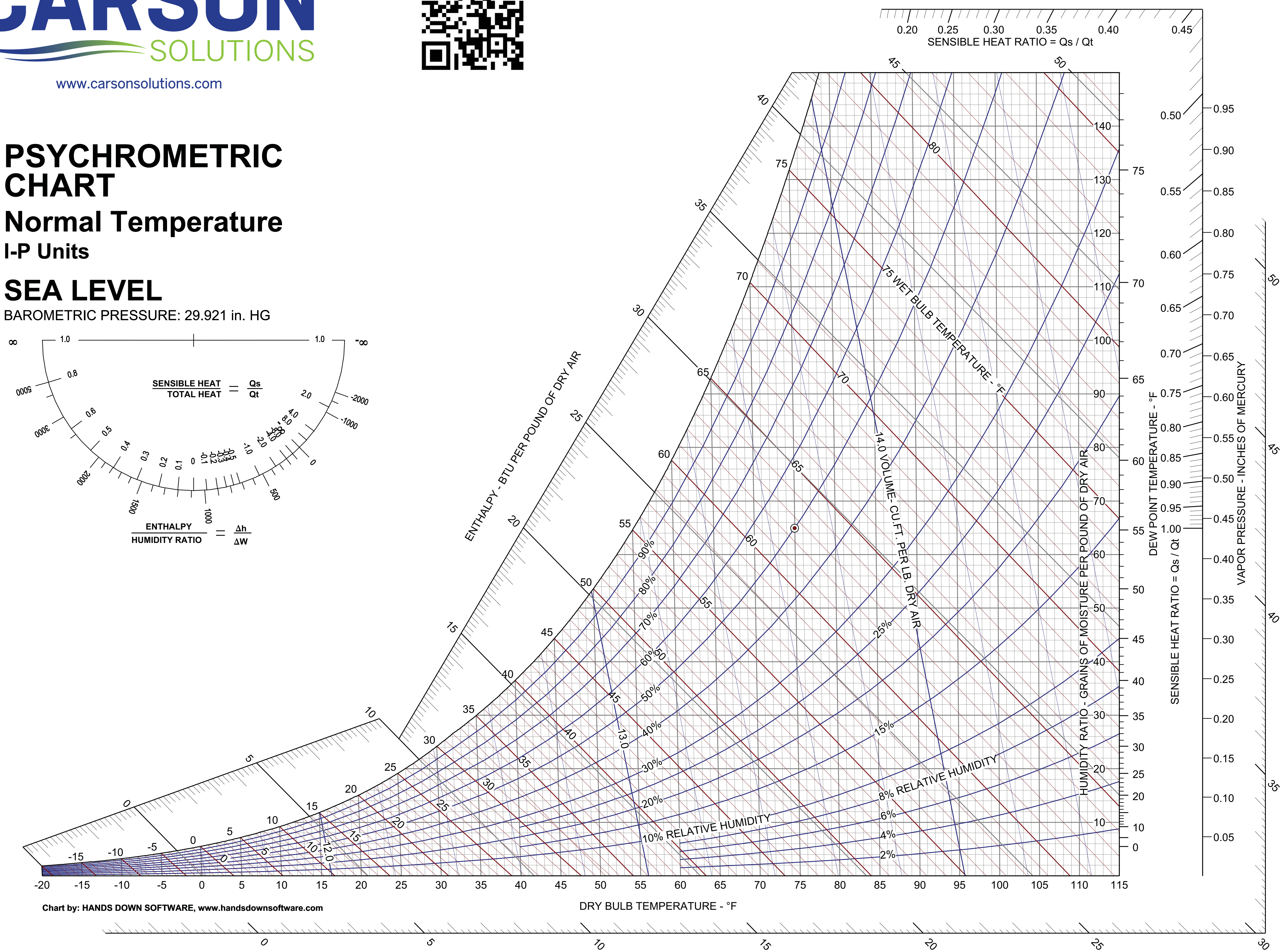
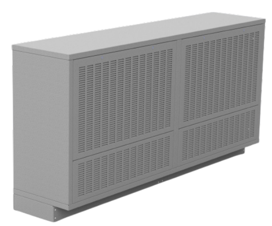


Chart by: HANDS DOWN SOFTWARE, www.handsdownsoftware.com

CARSON SOLUTIONS

PRODUCT OVERVIEW

DISPLACEMENT INDUCTION VENTILATION



QLCI

The QLCI displacement induction ventilation terminal unit provides a comfortable and healthy environment with superior ventilation, improved air quality, and reduced noise with an energy-efficient and esthetically pleasing design.

ACTIVE OVERHEAD CHILLED BEAMS

Chilled beams are an efficient ventilation solution to ventilate, cool, and heat commercial spaces compared to traditional all-air heating and cooling approach or noisy room terminal devices.

CB-H24

- 1-way & 2-way throw patterns
- 24 inches wide
- Fully sealed plenum design

CB-S24

- 2-way throw pattern
- 24 inches wide
- Condensate drip tray with drain connection
- Fully sealed plenum design

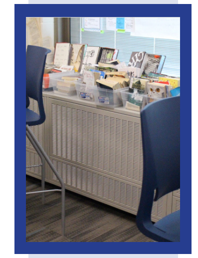
CUSTOM SOLUTIONS

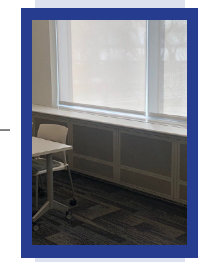
CREATE YOUR PERFECT SOLUTION

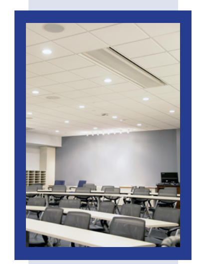
Carson Solutions is ready to design and fabricate customized solutions to suit virtually any application and industry. We offer a variety of services to create the best solution for your application.

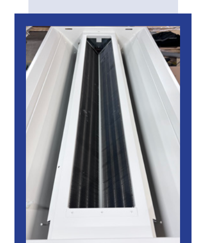
READY TO GET STARTED?

To learn more and to find your local represenative or visit us at carsonsolutions.com









HVAC Formulas

WATER

$$q\ (Btu/h) = 500 \times GPM \times [t_{wo} - t_{wi}]\,(°F)$$

$$\Delta h(ft.wtr.) = 2.31 \times \left(\frac{GPM}{C_v}\right)^2 ; \Delta h = \Delta h_{rated} \times \left(\frac{GPM}{GPM_{rated}}\right)^2$$

PUMPS

$$hp_{req'd} = \frac{GPM \times Head(ft.wtr.)}{3960 \times \eta_{pump}} = \frac{GPM \times Diff.\ Pressure\ (psi)}{1715 \times \eta_{pump}}$$

$$GPM_2 = GPM_1 \times \left(\frac{RPM_2}{RPM_1}\right); Head_2 = Head_1 \times \left(\frac{RPM_2}{RPM_1}\right)^2; hp_2 = hp_1 \times \left(\frac{RPM_2}{RPM_1}\right)^3$$

AIR

$$q_{total}(Btu/h) \approx 4.5 \times CFM \times [h_o - h_i](Btu/lb)$$

$$q_{sensible}(Btu/h) \approx 1.08 \times CFM \times [t_o - t_i]\ (°F)$$

$$q_{latent}(Btu/h) \approx 0.68 \times CFM \times [w_o - w_i](grains) \approx 4840 \times CFM \times [w_o - w_i](lb_w/lb_a)$$

$$\Delta h = \Delta h_{rated} \times \left(\frac{V(fpm)}{V(fpm)_{rated}}\right)^2 ; \Delta h = \Delta h_{rated} \times \left(\frac{CFM}{CFM_{rated}}\right)^2$$

$$\Delta h_v(in.wtr.) = \left(\frac{V(fpm)}{4005}\right)^2$$

FANS

$$hp_{req'd} = \frac{CFM \times \Delta h(in.wtr.)}{6350 \times \eta_{fan}}$$

$$CFM_2 = CFM_1 \times \left(\frac{RPM_2}{RPM_1}\right); \Delta h_2 = \Delta h_1 \times \left(\frac{RPM_2}{RPM_1}\right)^2; hp_2 = hp_1 \times \left(\frac{RPM_2}{RPM_1}\right)^3$$

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