Techmark®

SCU

Sensible Cooling Unit

Unlock Massive Energy Savings and Cleaner Air for Your Facility.

Toll Free No: 8287-885-885

Overview

Techmark, a registered brand of Adhunik Powertech, stands as a leading innovator in advanced HVAC and air management solutions. We are dedicated to delivering cleaner air, higher energy efficiency, and precise climate control through our smart, high-performance systems.
Our technology is centered around the Sensible Cooling Unit (SCU), which powers the enhanced efficiency of Air Handling Units (AHUs). The SCU emphasizes the core process of sensible cooling of the primary air stream, utilizing intelligent air mixing and advanced heat recovery. This patented approach ensures greater comfort for occupants while achieving significantly reduced energy consumption. With a strong focus on sustainable engineering and continuous innovation, Techmark is committed to creating smarter, greener, and healthier indoor environments for the future.

Sensible Cooling Unit (SCU)

Industrial Cooling Innovation

In demanding industrial environments, such as warehouses and mills, achieving peak energy efficiency while maintaining high indoor air quality is a fundamental requirement. Techmark introduces the Sensible Cooling Unit (SCU)—a revolutionary and patented technology designed to transform fresh air pre-cooling within Air Handling Units (AHUs).

Core Technology & Performance

The SCU*(Sensible Cooling Unit)* uses the principle of Sensible Cooling, offering a sophisticated and highly energy-efficient approach that harnesses the power of indirect evaporative cooling.
At the core of the SCU is Techmark's advanced, next-generation cross-flow heat exchanger. This innovative component is meticulously optimized for the indirect evaporative process, providing a distinct performance advantage over standard cooling methods.

Key Benefits for Your Operations

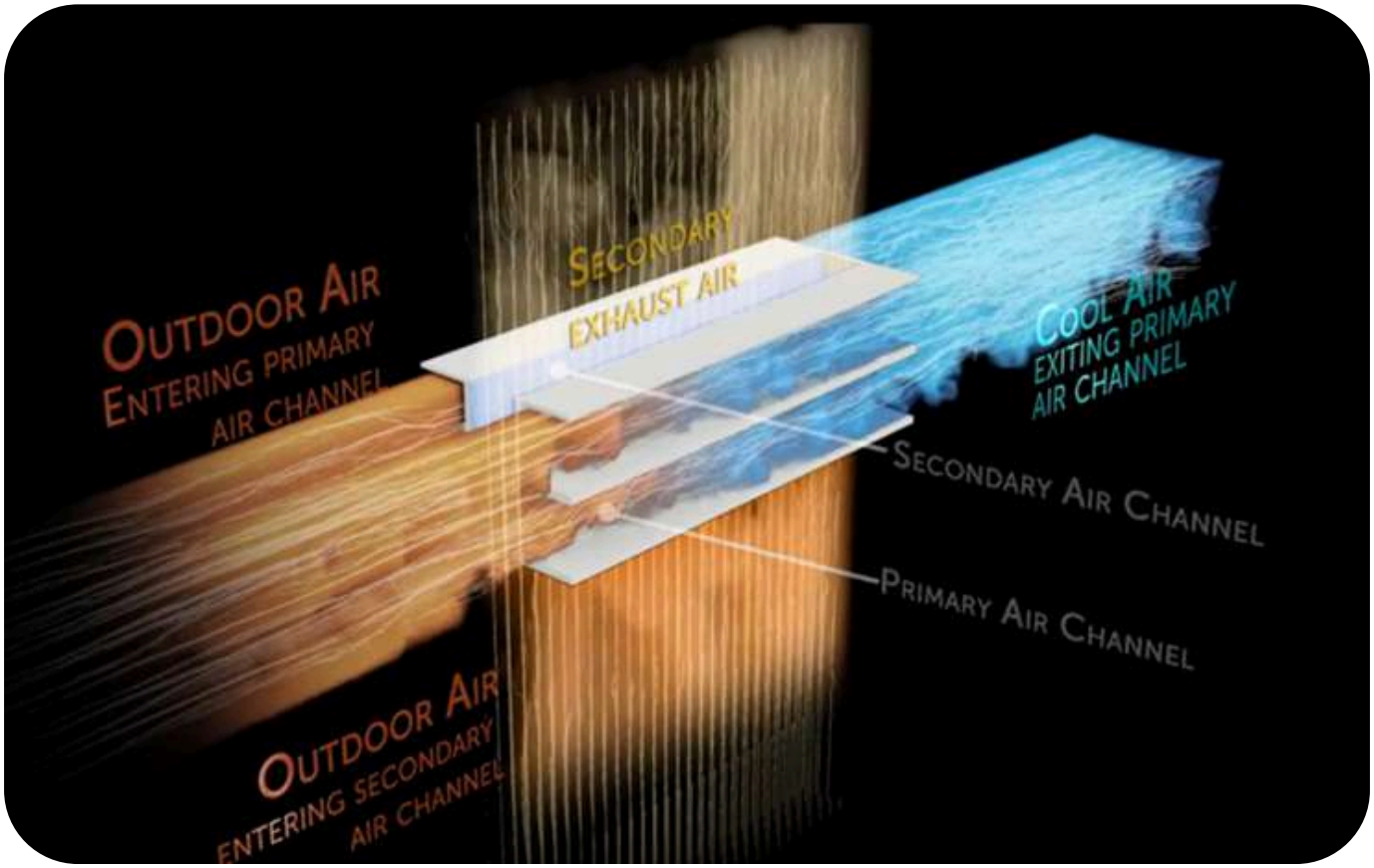
By integrating the SCU into your cooling strategy, you will realize immediate and sustainable advantages:

- Significant Energy Savings: Dramatically cuts the thermal load on main cooling systems, translating directly into reduced operating costs.
- Superior Indoor Air Quality (IAQ): Enables increased fresh air intake without compromising energy efficiency, leading to a healthier and more productive environment.
- Sustainably Engineered: Delivers enhanced performance through smart, green technology committed to a smaller environmental footprint.

The SCU is engineered to deliver a powerful blend of high performance, sustainability, and occupant comfort, fundamentally reshaping your industrial climate control.

Indirect Evaporative Cooling:

SCU(Sensible Cooling Unit)



In Indirect evaporative cooling Hot Air and water travel in different channels and donot come directly in contact with each other, hence the name Indirect Evaporative Cooling.

In IDEC, warm primary air cools by losing its heat to a thin water film on the other side of a conducting surface.
Another air stream called Secondary or Scavenging air moves upward
through the falling waterand evaporates this water, thereby, converting most of the sensible heat into latent heat, before it is exhausted
to the outside.Thus, the primary
air is cooled without coming in contact with the water stream. Hence, IEC reduces the dry bulb temperature, wet-bulb temperature, and the enthalpy of the primary air without adding any moisture to it.

Temperature Reduction Achievable Using Indirect Direct Evaporative Cooling

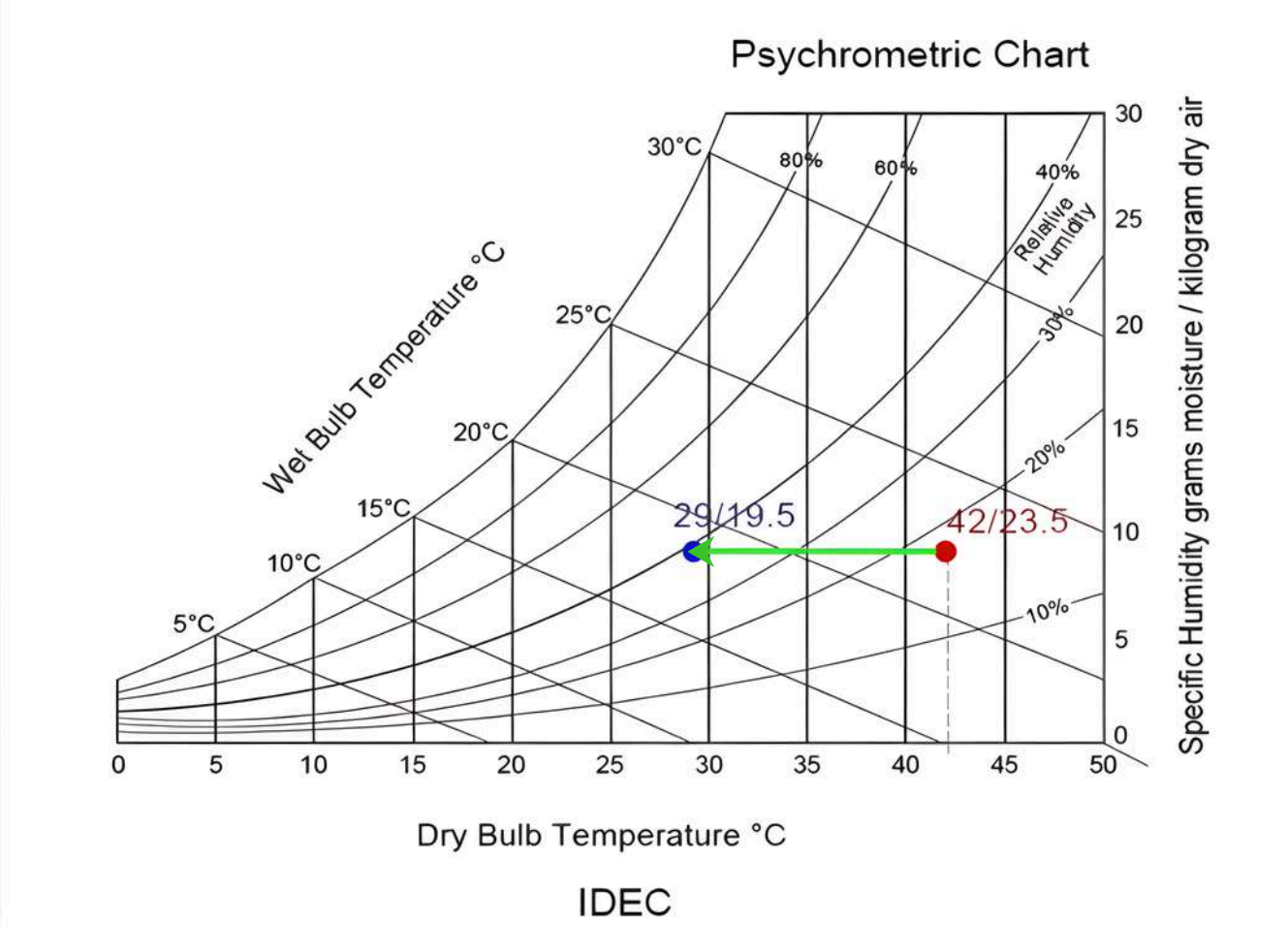
First, calculate the dry bulb and wet bulb temperatures achievable with indirect evaporative cooling:

1.Temp drop achievable = (dry bulb – wet bulb) x (efficiency of indirect module)

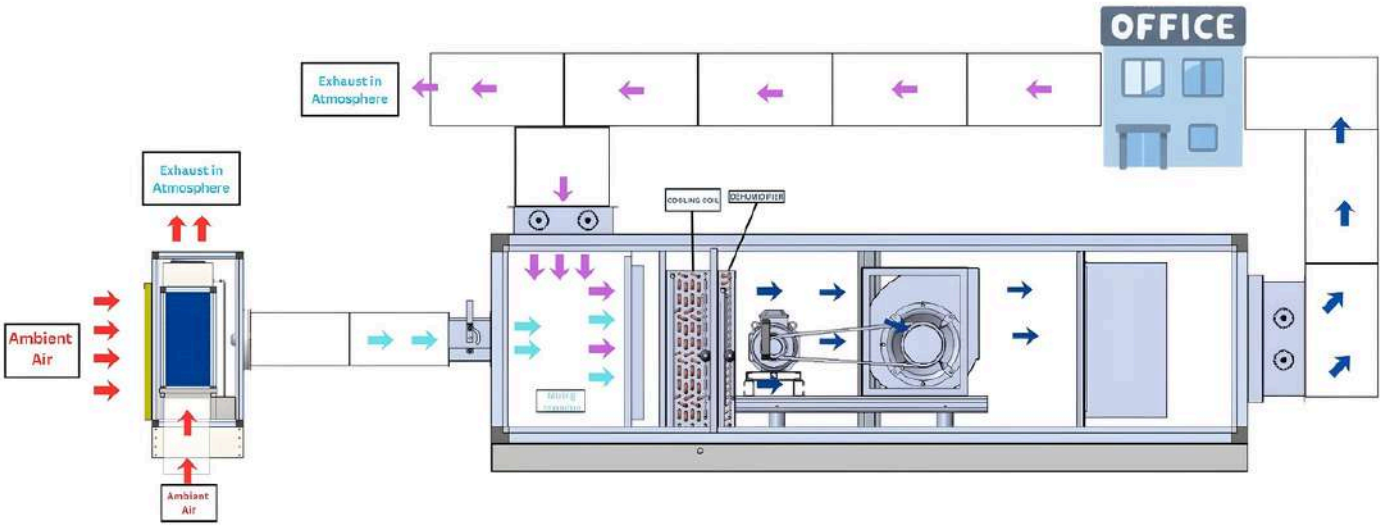
Example: (42 degrees C- 23.5degrees C) x .7 = 13 degreesC.

2.Achievable temp = dry bulb – temp drop achievable Example: 42 degrees – 13 degrees = 29 degrees DB/19.5degreesWB.

3.Starting DB: 42 degrees Ending DB: 29 degrees

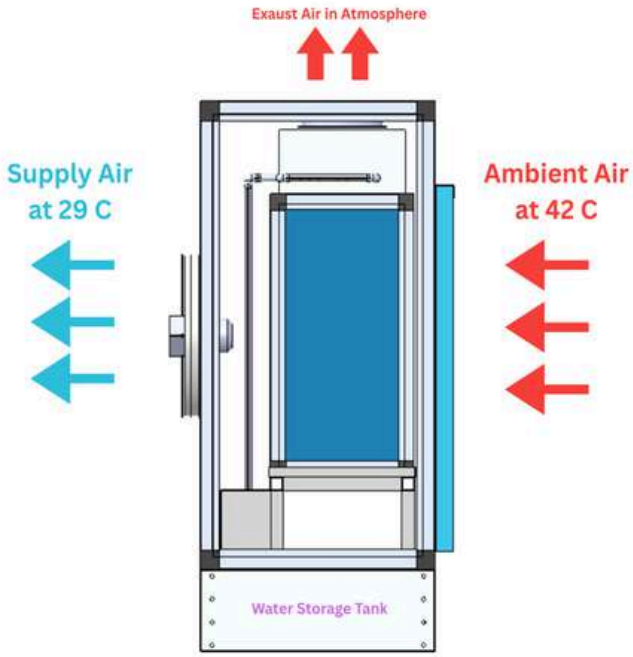


Fresh Air Intake With SCU (Sensible Cooling Unit)



SCU AHU UNIT

Air circulation in SCU(Sensible Cooling Unit)



UNIT DIMENSION : 800(L) X 750(W) X 1670(H)

Features of SCU(Sensible Cooling Unit)

- Optimized for Indirect Evaporative Cooling
- High reliability and low leakage between air streams
- Unique design ensures low fouling and consistent performance
- Modular in design and scalable.

Techinical Specification

S. NO	DESCRIPTION	MATERIAL	QTY
1	DAMA CAPACITY	2500 CFM	1
2	LARGE AXIAL FAN	4D-450	1
3	COMPACT FAN	280A230HBAC-M	1
4	PRE FILTER (A)	L 610 X H 760 X T 50	1
5	PRE FILTER (B)	L 610 X H 310 X T 50	1
6	CANVASS CONNECTION	FIRE RETARDANT CANVASS CLOTH	-
7	WATER STORAGE TANK UNIT BASE	18G SS-304 STAINLESS STEEL	-
8	UNIT BASE	G.I SHEET BASE FRAME	-
9	OUTER SHEET	0.6 MM THK. PRE COATED GI SHEET	-
10	INNER SHEET	0.6 MM THK. PRE COATED GI SHEET	-
11	PANEL THICKNESS	(25 ± 2) MM	-
12	PANEL INSULATION	PUF INJECTED (40KG / Cu.M)	-
13	UNIT WEIGHT	176KG	-
14	TANK STORAGE CAPACITY	80 LITER	-
15	PUMP	55 WATTS (SINGLE PHASE)	1

FAN DISCHARGE **[FRONT DISCHARGE]**

PUMP CONNECTION / LOCATION FILLTER TO----------[L.H.S]

UNIT SIZE

[LENGTH - 800 mm] X [WIDE - 750 mm] X [HEIGHT - 1670 mm]

NOTE:- SCU is fully customizable and available across a broad operational range, with capacities starting from 500 CFM (Cubic Feet per Minute) up to 2500 CFM. Please consult our technical team for assistance in selecting the precise unit size and configuration required for your specific application

Techmark®

PRODUCTS WE USE IN OUR PROJECTS

Air Washer

Ducted Cooler

Air Washers with EC Fans

Air Shower

Reach Out to Us

Adhunik Powertech Pvt. Ltd.

DCG1-0102, Tower-1, DLF CORPORATE GREENS, Sector 74A, Gurugram, Haryana 122004

info@adhunikpowertech.com

www.adhunikpowertech.com

Toll Free No: 8287-885-885