ate Group

HMX

HMX-PCU

Fresh air pre-cooling unit

Treated fresh air (TFA)

Energy efficient

Increased energy savings

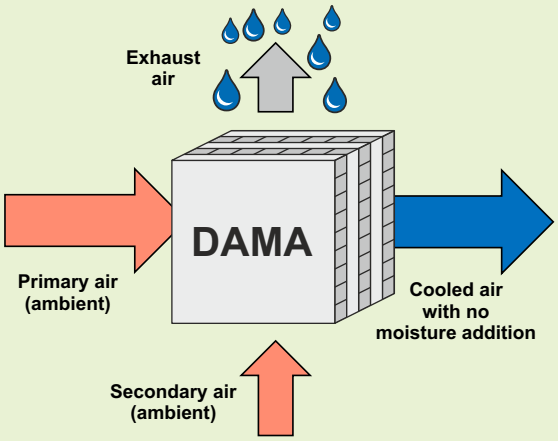
Pre-cooling with HMX

Normally 30% of the overall cooling load in a centrally air-conditioned space is dedicated towards cooling the fresh air being fed into the conditioned space to maintain healthy indoor air quality. The HMX-PCU is an efficient treated fresh air (TFA) system which has the potential to save 40% of the total fresh air load on a centrally air-conditioned system. Based on HMX's Indirect Evaporative Cooling technology, HMX-PCU is the best solution among all fresh air handling technologies such as energy recovery wheels, conventional TFAs and heat pipes.

At the heart of the HMX-PCU is the DAMA (Dry Air Moist Air) – a cross flow plate type sensible heat exchanger for Indirect Evaporative Cooling, built out of an engineering polymer. **DAMA has been type-tested in HMX's internal laboratory which is built as per ASHRAE standards, and witnessed and verified by UL**. The supply air on one side is cooled by a secondary stream of air that flows in alternating moist channels. The vaporising mass of water in the secondary stream enables cooling of the supply air without any addition of moisture to the cooled air.

Once pre-cooled through the DAMA, the air can be supplied directly to the conditioned space as it is or further cooled through chilled water or DX coil. The HMX-PCU can also be retrofitted to existing TFA/FAHU units, or can be supplied to individual AHU rooms.

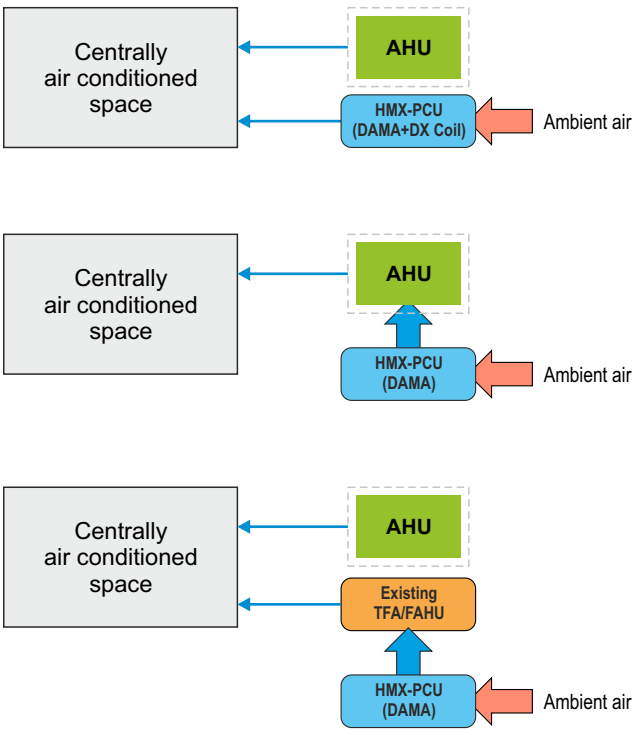
City	Ambient inlet DBT (°C)	Ambient inlet WBT (°C)
Ahmedabad	42.3	24.1
Bengaluru	34.7	19.5
Hyderabad	40.4	22.5
Indore	41.1	20.7
Jaipur	42.8	22.5
Lucknow	42	24.2
Nagpur	43.8	23.6
New Delhi	41.8	23.6
Patna	40.7	23.4
Pune	38.4	20.5



City	DAMA Outlet DBT (°C)	Corresponding chiller TR savings (TR/1000 CFM/hour)
Ahmedabad	27.7	2.4 (45% saving)
Bengaluru	22.7	2.0 (58% saving)
Hyderabad	26.1	2.4 (54% saving)
Indore	24.8	2.7 (60% saving)
Jaipur	26.6	2.7 (56% saving)
Lucknow	27.8	2.4 (44% saving)
Nagpur	27.6	2.7 (54% saving)
New Delhi	27.2	2.4 (48% saving)
Patna	26.9	2.3 (47% saving)
Pune	24.1	2.4 (59% saving)

Energy efficient treated fresh air systems

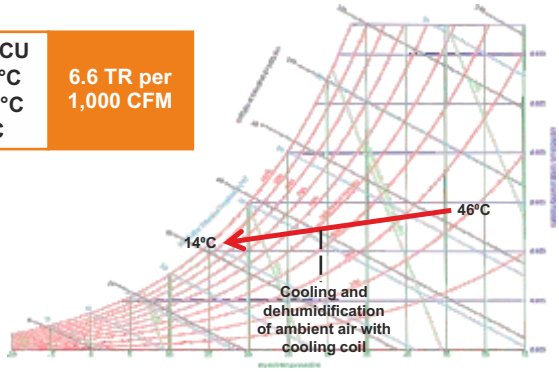
Modes of pre-cooling with DAMA



TR load with and without HMX-PCU

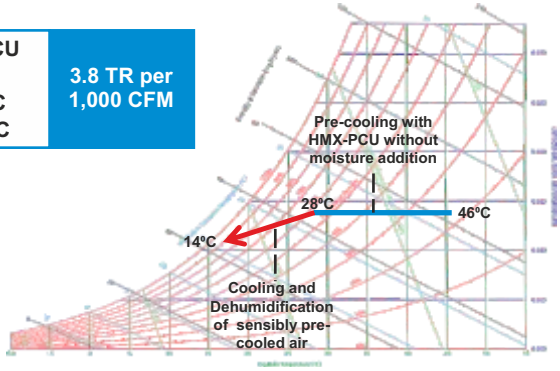
TR load without PCU
Ambient DBT: 45°C
Ambient WBT: 26°C
Coil outlet:14°C

6.6 TR per 1,000 CFM



TR Load with PCU
Ambient: 45°C
IEC outlet: 28°C
Coil Outlet: 14°C

3.8 TR per 1,000 CFM



HMX-PCU technical specifications

MODEL		PCU 2000	PCU 3000	PCU 5000	PCU 7000	PCU 10000	PCU 15000	PCU 20000	PCU 25000	PCU 30000
Operating details										
Nominal air flow	CFM	2000	3000	5000	7000	10000	15000	20000	25000	30000
External static pressure	mm of wg	5	5	5	10	10	15	15	15	15
Power resource details										
Power supply details		1ph, 50Hz, 240V	3ph, 50Hz, 415V							
Total connected load	W	1560	1580	3700	5500	7500	10750	11450	16750	22750
Total power consumed	W	1160	1500	2440	3980	6200	8560	10580	15010	17320
Water consumption (standard conditions)	l/h	10	15	25	35	50	75	100	125	150
Physical / constructional details										
Unit size (WxDxH)	mm^3	1100×3100×1400	1100×3200×1500	1300×3300×2050	1400×3500×2350	2000×4050×2350	2300×4650×2750	2300×4900×3100	2900×5100×3100	3000×5100×3400
Unit weight	kg	472	566	614	1001	1362	1923	2619	3332	3610
Operating weight	kg	708	849	1053	1567	2096	2404	3274	4165	4513
Casing		Aluminium profile with PUF-filled double skin panels; inner-GI & outer pre-coated white colour								
Tank assembly		SS - 304								
Piping connection		Incoming water & drain - 1" external thread								
Fan details		Centrifugal fan, backward curve								

(Design specifications and technical characteristics are subject to change without prior notice)

Best in class payback

Zero cross contamination

Lower capital investment

Minimal maintenance

Reduced energy consumption

Eliminates return-air ducting (PCU)

Small footprint

Our other solutions

HMX-Ambiator

The HMX-Ambiator is an Indirect Direct Evaporative Cooling solution which is an excellent upgrade over conventional air washer systems as well as an energy efficient alternative to conventional air-conditioners.

HMX-FAAC

The HMX-FAAC is a hybrid air-conditioning solution which combines the best of both worlds - Indirect Direct Evaporative Cooling and refrigerated air-conditioning. It has 6 modes of operation to suit any prevailing ambient conditions.

Our clientele*

*For different projects; all logos & trademarks belong to the respective companies

About A.T.E. (HMX)

HMX – a part of the A.T.E. Group – has been providing eco-friendly cooling solutions based on Indirect Evaporative Cooling since 1998. HMX designs and manufactures eco-friendly and energy efficient solutions for space and process cooling with its best in class heat exchanger – DAMA – as the core. HMX's DAMA has been type tested in our internal laboratory – a test that was witnessed and verified by Underwriters Laboratory. HMX also undertakes turnkey projects for comfort air-conditioning.

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partnering people & the planet

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