

STARLINE FM/HM TERMINAL AIR CONDITIONING UNITS - FM30 / HM30



STARLINE HM30



STARLINE FM30

STARLINE FM/HM terminal air conditioning units incorporate new patented technologies and are hailed as a breakthrough for air conditioning worldwide.

STARLINE FM/HM terminal air conditioning units provide efficient, effective and whisper-quiet air conditioning.

NEW TECHNOLOGIES

Novel high performance nozzles and superior fluid dynamic design, combine to bring STARLINE FM/HM terminal air conditioning units into the 21st century.

As opposed to concealed space fan-coil units, STARLINE FM/HM terminal air conditioning units use primary air and not a fan to induce secondary room air through the cooling coil within the unit, for energy efficient, quiet and vibration free operation.

State-of-the-art computational fluid dynamic (CFD) analysis is used by DADANCO during the design of STARLINE FM/HM terminal air conditioning units. Computational fluid dynamics (CFD) is being used for the prediction of the performance of STARLINE FM/HM terminal air conditioning units in actual installations as well.

ADVANTAGES OF STARLINE FM/HM TERMINAL AIR CONDITIONING UNITS

- STARLINE FM/HM terminal air conditioning units supply cooling, heating and the outdoor air required for ventilation in the conditioned space.
- Compact dimensions and intrinsically small primary air duct sizes offer real savings in space requirements compared with conventional all-air air conditioning systems.
- Fan power is dramatically reduced. The primary air is treated in a plant room and distributed at low pressure. The primary air is typically only 30% of the air supplied by STARLINE FM/HM terminal air conditioning units. STARLINE FM/HM terminal air conditioning units deliver more cooling capacity using less treated air than any all-air system.
- STARLINE FM/HM terminal air conditioning units provide good air diffusion in the conditioned space.
- Noise radiated from STARLINE FM/HM terminal air conditioning units is very low, and helps to achieve space noise levels below the values recommended in relevant standards and codes for quality office and other spaces, including audio visual conference rooms (e.g. AS 2107).
- STARLINE FM/HM terminal air conditioning units require minimal maintenance.

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APPLICATION DATA - FM30/HM30

COOLING	25 to 250 W/m ²
LENGTH	700 - 2000mm
INSTALLATION HEIGHT	FM30 - 495mm HM30 - 350mm (with drip tray)
INSULATION	Thermal insulation for the primary air plenum and condensate tray is optional
GRILLE	Requires supply grille. Return air through grille or concealed gap.
CONTROLS	Each unit can be controlled individually.

APPLICATIONS

STARLINE FM30/HM30 terminal air conditioning units are suitable for concealed installations in:

- Office buildings
- Hotels and Hospitals
- Schools and Airports

STARLINE FM30 terminal air conditioning units are an ideal retrofit/replacement for most older under-sill perimeter induction units, but equally efficient in new building applications.

SOUND POWER LEVEL (dB) (FM30/HM30-1000 Minimum Primary Air Flow)

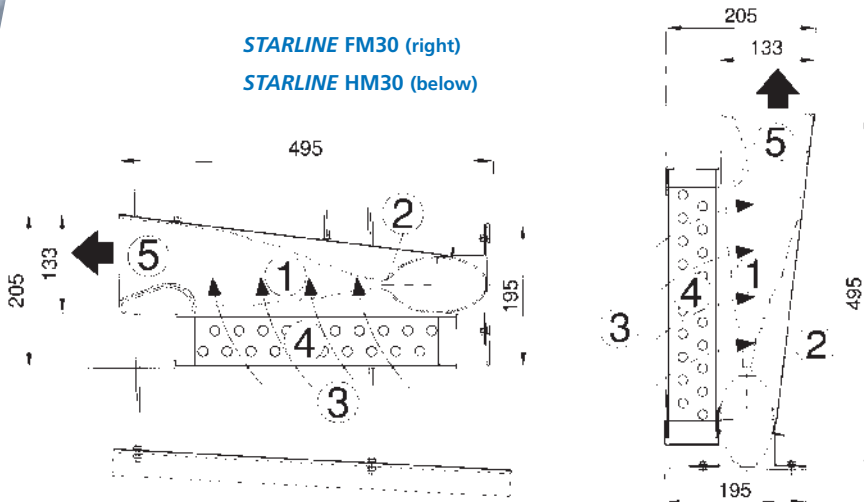
Primary Air Pressure	Octave Band Frequency [Hz]								dB(A) Rating
	63	125	250	500	1000	2000	4000	8000	
100 Pa	36	25	19	17	16	16	18	20	21
150 Pa	35	26	21	18	16	17	18	20	21
200 Pa	36	26	23	19	18	18	19	20	23
250 Pa	36	28	24	22	20	21	20	21	24
300 Pa	36	29	27	24	22	22	22	22	26
350 Pa	39	31	30	27	25	24	23	24	29
400 Pa	38	32	32	29	28	27	26	26	31

SOUND POWER LEVEL (dB) (FM30/HM30-1000 Maximum Primary Air Flow)

Primary Air Pressure	Octave Band Frequency [Hz]								dB(A) Rating
	63	125	250	500	1000	2000	4000	8000	
100 Pa	36	31	37	33	25	20	19	22	31
150 Pa	36	35	41	38	32	25	23	22	36
200 Pa	37	37	44	42	36	30	27	26	40
250 Pa	38	40	46	44	39	33	31	29	43
300 Pa	39	41	47	46	42	36	34	33	45
350 Pa	40	42	49	48	44	38	36	36	46
400 Pa	43	44	50	49	45	40	37	38	48

NOTE: The above tabulated noise data are based on tests taken in The University of Adelaide's NATA certified Reverberation Chamber, with one unit only connected at a time and with no obstructions in the primary air supply duct. Please contact DADANCO for further information on the parameters under which the noise data are measured.

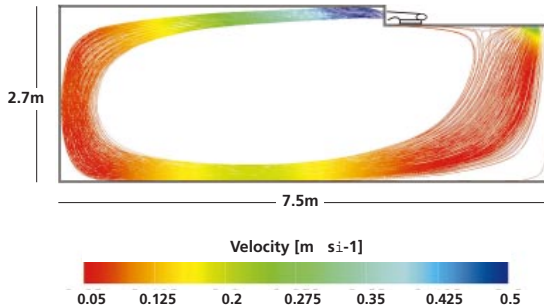
STARLINE FM30 (right)
STARLINE HM30 (below)



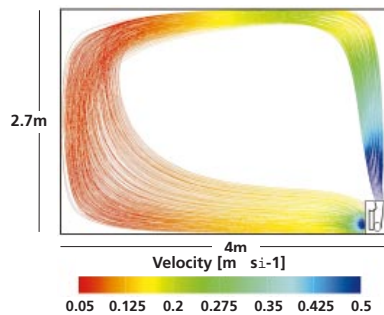
- ① Primary Air Flow
- ② New Nozzles
- ③ Secondary Room Air
- ④ Secondary Cooling Coil
- ⑤ Supply Air

CFD ANALYSIS – AIR DISTRIBUTION

STARLINE HM30



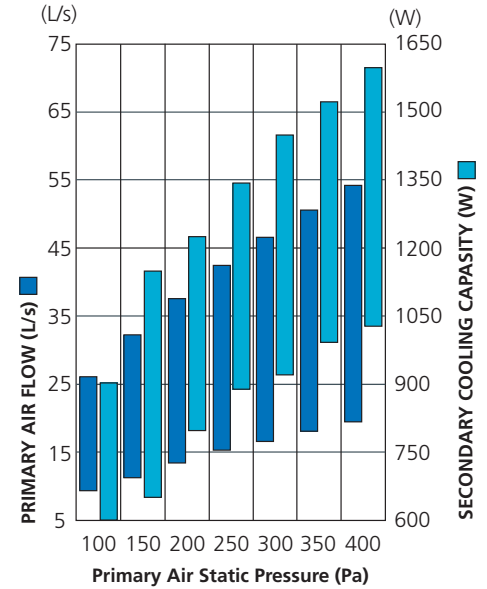
STARLINE FM30



TECHNICAL DATA - FM30/HM30

Primary Air Flow, Primary Cooling Capacity and Secondary Cooling Capacity data indicate the operating range of STARLINE FM30/HM30 -1000(*) under the following conditions(**):

- Room Air Temperature: $t_{RA} = 24^{\circ}\text{C}$
- Chilled Water Temperature: $t_{CHW} = 13^{\circ}\text{C}$
- Chilled Water Flow: CHWF = 0.1 L/s
- Room Relative Humidity: $RH_{RA} = 50\%$



Primary Sensible Cooling Capacity is calculated as follows:

$$Q_{SPA} = m_{PA} \times 1.213 \times (t_{RA} - t_{PA})$$

Q_{SPA} (W) - Primary Sensible Cooling Capacity

m_{PA} (L/s) - Primary Air Flow

t_{PA} ($^{\circ}\text{C}$) - Primary Air Temperature

To calculate the total sensible cooling duty of STARLINE FM/HM terminal air conditioning units, please add the Primary Sensible Cooling Capacity (refer to the formula above) to the Secondary Cooling Capacity (refer to the chart above).

Secondary cooling coil performs as a dry coil and the latent cooling duty of STARLINE FM/HM terminal air conditioning units is provided by primary air only.

(*) STARLINE FM30/HM30-1000 (size of STARLINE FM30/HM30 that contains coil of 1000mm finned length)

(**) STARLINE terminal air conditioning units FM30/HM30 are supplied with 317mm, 254mm or 190mm high coil. Data provided by this brochure relates to 317mm high coil. For conditions and unit sizes other than the above mentioned please contact DADANCO for further assistance.

DISCLAIMER

Whilst every effort is made to ensure the details contained herein are kept up to date, in the interests of ongoing product development, Dadanco reserves the right to alter the same without notice

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