




39S Ceiling  
Suspended AHU

# FROM OUR GURUGRAM FACTORY, ESPECIALLY FOR YOU


Founded by the inventor of modern air conditioning, Carrier is a world leader in high-technology heating, air-conditioning and refrigeration solutions. Carrier experts provide sustainable solutions, integrating energy-efficient products, building controls and energy services for residential, commercial, retail, transport and food service customers.

From the invention of the first centrifugal chiller 100 years ago to today's highly efficient screw chiller, Carrier has consistently paved the way towards efficient and reliable solutions. Providing smart and sustainable solutions with Made in India products, Carrier's comprehensive range of offerings is suitable for varied customer applications.


## Carrier's comprehensive range of offerings:




Water-Cooled Screw Chillers




Air-Cooled Screw Chillers




Ducted Air Conditioners



Cassette Air Conditioners

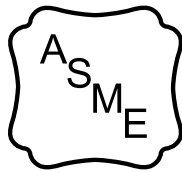


Fan Coil Air Conditioning Units



Floor Standing Air Conditioning Units

## Certifications



# INDIA RESEARCH & DEVELOPMENT CENTRE (IRDC)



Carrier was built on a legacy of innovation, beginning with our founders. We are innovators at heart and inventors by heritage. Today, building on our history of firsts, we're boldly advancing the industries we created to make a difference in people's lives. Backed by a state-of-the-art R&D centre in Gurugram, our pursuit for excellence revolves around developing products and solutions for all customer verticals.

An integral part of our IGBC-platinum-accredited Gurugram factory, the India Research & Development Centre (IRDC) houses a number of test facilities for state-of-the-art performance and reliability testing so that we can deliver the ideal HVAC solution.

## Certifications



National Accreditation Board for Testing and Calibration Laboratories



Air-Conditioning, Heating, and Refrigeration Institute



International Laboratory Accreditation Cooperation

## Carrier Expert Centre (CEC) Gurugram

With a focus on elevating our customers' experience, Carrier India introduced the Carrier Expert Centre in its Gurugram campus. This is a dedicated and immersive exhibit to provide an unmatched experience of Carrier's HVAC solutions.

Showcasing a wide range of products, it is our aim to help our customers dive into the world of latest innovations driven by our legacy of excellence.



01

## CARRIER 39S

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The 39S Series is a range of air handling units offered by Carrier.

The product specification results from the effort of experienced design engineers and reflects Indian market requirements regarding high cooling performance. The 39S was developed with the use of the state-of-the-art technologies, advanced material engineering and innovative construction solution.

Due to this, the Carrier 39S offer reliability and energy saving.

from **883** to  
**5621** CFM  
IN TOTAL CAPACITY

**5**  
SIZES

**LOW HEIGHT  
& WEIGHT**

**EC**  
**EFFICIENT  
AND RELIABLE  
EC MOTORS**

**WATER  
TIGHTNESS**

**ATTRACTION  
PRICE**





TECHNICAL SPECIFICATIONS

CASING

- 40 mm "Sandwich" double skin panels made of rigid polyurethane foam
- Inspection panels mounted on AHU side
- High anticorrosive protection:
  - Galvanized zinc (Zn) coating: 180g/m<sup>2</sup>
  - External protection coating material thickness: polyester / 25µm
- Inspection panels on both sides

AIR FILTERS

- Pleated filtration fabric shielded by steel net, installed in 50 mm thick frame
- Filtration fabric made of polyester fibres
- Working max parameters: max temperature (+70)°C, max. RH100%
- ISO Coarse 75% (ISO 16890) - G4 (EN779)

COOLING COIL

- Hydronic coils - 4, 6 rows available
- DX - 6 rows, 2 sections available
- Max operating pressure - 1,6 MPa
- Testing pressure - 2,1 MPa
- Drain tray: stainless steel, water outlet 1"

UNIT CASING:

Monocoque technology - a self supporting shell structure used in Formula 1 car and aviation. This is exactly how we design our products, therefore our units feature low weight and optimal height, are easy for transportation and further installation. Moreover double skin "sandwich" panels with 40 mm rigid polyurethane foam ensure best thermal insulation.

- » Thermal conductivity: PPU λ= 0,022 W/mK
- » PPU density: ρ= 42kg/m<sup>3</sup>.
- » Casing heat transfer coefficient: K=0.6 W/m<sup>2</sup>K
- » Casing mechanical strength:
  - +2500 Pa ÷ 2500 Pa < 2 mm
- » Casing tightness: -400 Pa - 0.05 l/sm<sup>2</sup>
  - +700 Pa - 0.13 l/sm<sup>3</sup>
- » Anticorrosive protection:
  - Galvanized zinc (Zn) coating: 180g/m<sup>2</sup>
- » External protection coating material thickness: polyester 25µm
- » Inspection panels mounted on AHU side.

NO THERMAL BRIDGES

Our Monocoque casing is a framework free construction. This eliminates the problem of water condensation on the external AHU side - and therefore - no more of harmful water dripping from the ceiling.

DRAIN TRAY

They are fabricated from heavy stainless steel and are to prevent condensation.

COOLING COILS

Fabricated from copper tubes mechanically bonded with aluminum fins and are leak tested at 305 psig pressure.

Hydronic

- » Copper pipe: dimensions: ½"
- » Fin Type: corrugated fin
- » Row: 4 or 6 rows
- » Max operating pressure: 1,6 MPa
- » Testing pressure: 2,1 MPa
- » Equipped with air discharge valve and water outlet valve

> DX

- » Copper pipe: dimensions: ½"
- » Fin Type: corrugated fin
- » Row: 6 rows , 2 - sections
- » Max operating pressure: 1,6 MPa
- » Testing p ressure: 2,1 MPa

DIRECT DRIVE PLUG FAN SET

Blower

- » Single inlet, radial, backward curved, free running fan.
- » Impeller made of SAN (styrene/ acrylonitrile) construction material with 20% glass fiber.
- » Direct drive – fan impeller installed directly on motor shaft.
- » Fan section consisting of single or twin fans .

AC Motors

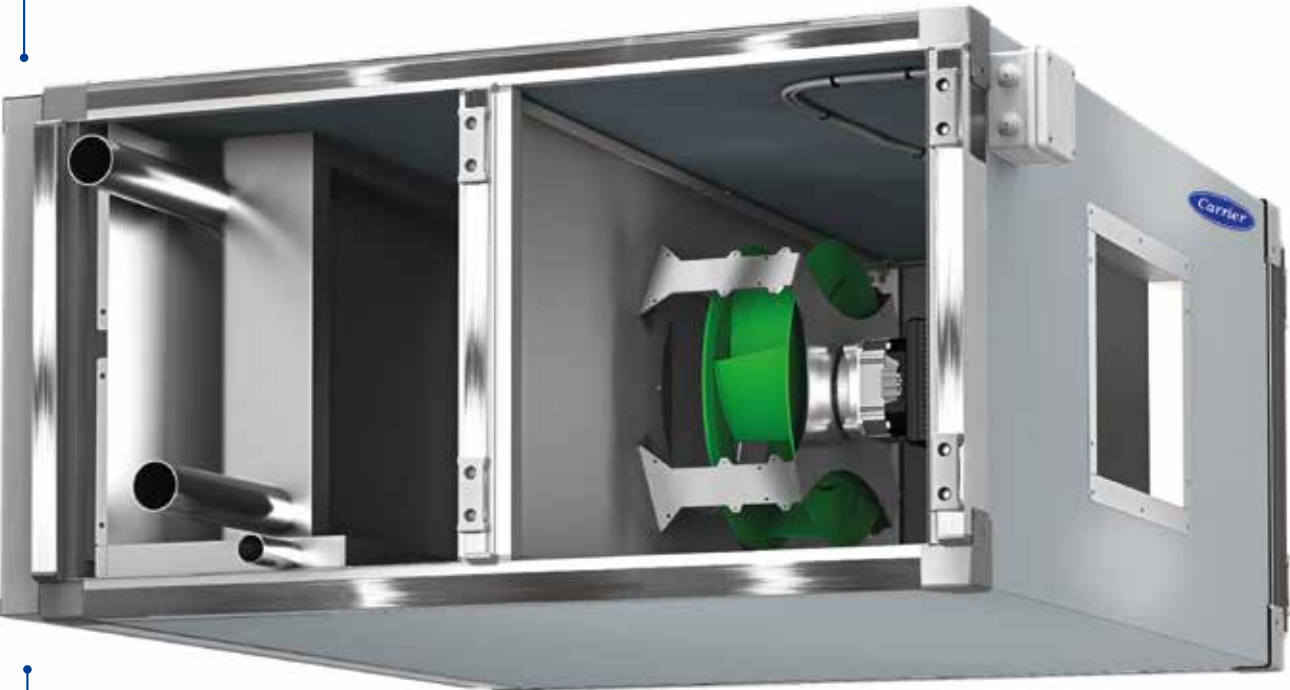
- » Fan and motor mounted on common housing, separated from AHU casing by set of rubber vibration absorbing mounts.
- » Motors of TEFS (Totally Enclosed, Fan-Cooled).
- » Motors fitted for IEC standard.
- » Variable Frequency Drive (VFD) – standard part of the fan-set.
- » Available Energy classes: IE2
- » Available voltage: 1x230V/50Hz, 3x380V/50Hz, 3x400V/50Hz, 3x400V/60Hz.
- » Number of poles: 2.
- » Motor winding insulation class: F (fitted for VFD operations).
- » Bearings lifetime: L10= 20000h / L50 = 100000h.
- » Protection degree: IP55.
- » Working conditions: 60°C.

EC Motors

- » Set of fan and motor mounted on common rail, fixed to the AHU fan diaphragm.
- » EC motors are Permanent Magnet motor, characterised by much higher efficiency vs traditional inductive AC motors.
- » EC motors (Electronically Commutated) – where mechanical commutator switching the windings has been replaced with electronic one.
- » Change of revolutions is done by means of changing the frequency rate of windings switching (rate or magnetic field rotating).
- » Highly inductive permanent magnets have applied in EC motors used by Carrier, which enabled to achieve high torque at relatively small dimensions.
- » Rated voltage: EC motors of nominal capacity equal or less 0,75kW - 1x230V AC.
- » Motor widing insulation class: F.
- » Protection degree: IP54. » Maximum working ambient temperature: 55°C.
- » Lifespan: - 70 000 hours at load not exceeding 70% of nominal capacity at ambient temperature not exceeding 35°C, - 30 000 hours at 100% capacity load at ambient temperature not exceeding 55°C.

AIR FILTERS

- » All Units are provided with air filters.
- » Pleated filtration fabric shielded by steel net, installed in 50 mm thick frame.
- » Filtration fabric made of polyester fibres.
- » Working max parameters: max. temperature (+70)°C, max RH100%.
- » ISO Coarse 75% (ISO 16890) - G4 (EN779).



DIRECT DRIVE PLUG FAN SET  
> BLOWER

- Single inlet, radial, backward curved, free running fan
- Direct drive – fan impeller installed directly on motor shaft
- Fan section consisting of single or twin fans
- Smooth regulation

DIRECT DRIVE PLUG FAN SET  
> AC MOTORS

- Fan and motor mounted on common housing, separated from AHU casing by set of rubber vibration absorbing mounts
- Motors of TEFS (Totally Enclosed, Fan-Cooled)
- Variable Frequency Drive (VFD) – standard part of the fan-set
- Available Energy classes: IE2
- Junction box on casing

DIRECT DRIVE PLUG FAN SET  
> EC MOTORS

- Set of fan and motor mounted on common rail, fixed to the AHU fan diaphragm.
- EC motors are Permanent Magnet motor, characterised by much higher efficiency vs traditional inductive AC motors.
- Required regulation with 0-10V regulator or ModBus signal
- Junction box on casing

TYPICAL APPLICATION



residential  
buildings



industrial  
buildings



small  
businesses



sports  
facilities



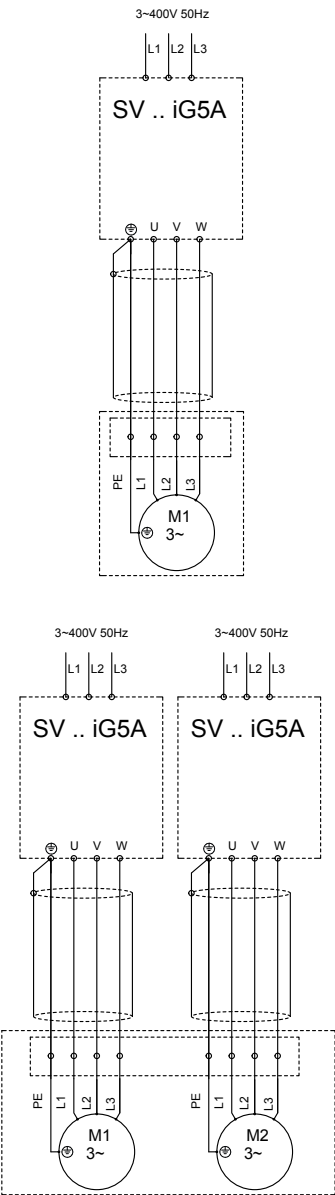
retail and  
warehouses



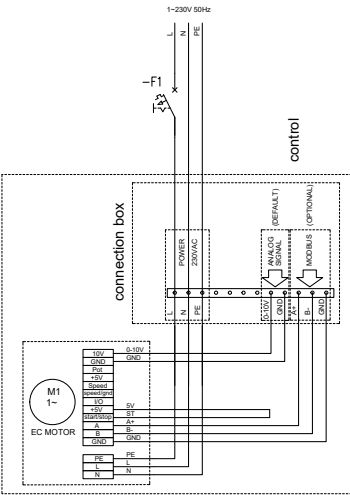
garages  
and workshops

ELECTRICAL WIRING DIAGRAMS

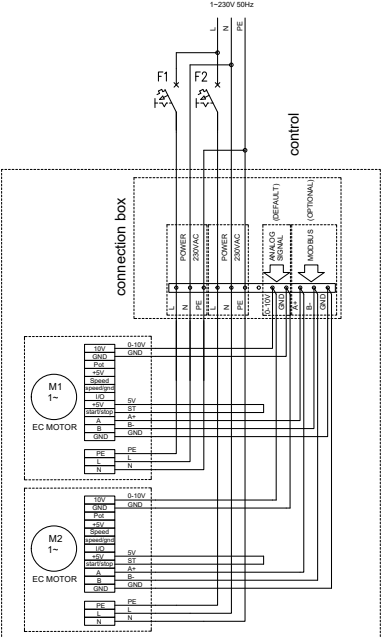
3 phase with VFD



1 phase - 1 EC MOTOR



1 phase - 2 EC MOTOR

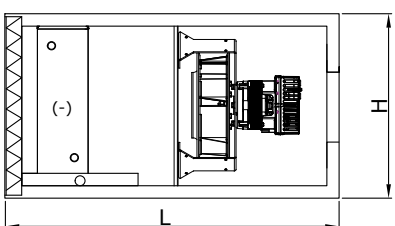
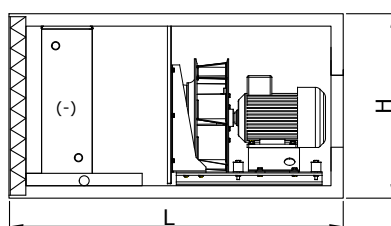
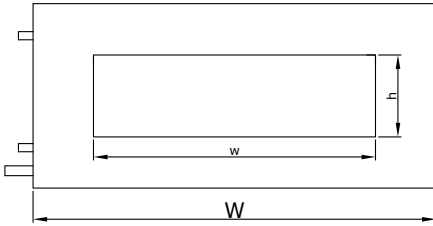


Unit size	Fan set with AC Motor									
	Model	Rated Output	Poles	Efficiency Class	Protection Grade	Rated Current at				
						415V/3ph/50Hz	230V/1ph/50Hz	380V/3ph/50Hz	400V/3ph/50Hz	400V/3ph/60Hz
	[ - ]	[ kW ]	[ - ]	[ - ]	[ - ]	[ A ]	[ A ]	[ A ]	[ A ]	[ A ]
39S-35	VS 315	1,5	2	IE2	IP55 / F	3,1	5,54	3,36	3,1	3,19
39S-50	VS 355	1,5	2	IE2	IP55 / F	3,1	5,54	3,36	3,1	3,19
39S-70	VS 315 x 2	1,5 x 2	2	IE2	IP55 / F	6,2	11,08	6,72	6,2	6,38
39S-85	VS 400 x 2	1,5 x 2	2	IE2	IP55 / F	6,2	11,08	6,72	6,2	6,38
39S-100	VS 400 x 2	1,5 x 2	2	IE2	IP55 / F	6,2	11,08	6,72	6,2	6,38

Unit size	Fan set with EC Motor			
	Model	Rated Output	Protection Grade	Rated Current at 230V/1ph/50Hz
	[ - ]	[ kW ]	[ - ]	[ A ]
39S-35	VS 315	0,75	IP54 / F	3,7
39S-50	VS 315	0,75	IP54 / F	3,7
39S-70	VS 315 x 2	0,75 x 2	IP54 / F	7,2
39S-85	VS 315 x 2	0,75 x 2	IP54 / F	7,2
39S-100	VS 315 x 2	0,75 x 2	IP54 / F	7,2



 **100%**  
units  
factory tested



Unit size	Dimensions			Duct Connection	FAN	Motor	Weight
	H	W	L	h x w	Model	Rated Output	
	[ mm ]				[ - ]	[ kW ]	[ kg ]
39S-35	530	1130	1120	210 x 700	VS 315	1,5	106
39S-50	595	1300	1120	310x550	VS 355	1,5	124
39S-70	530	2000	1120	310x1200	VS 315 x 2	1,5 x 2	181
39S-85	655	2000	1120	410x1400	VS 400 x 2	1,5 x 2	205
39S-100	655	2200	1120	410x1400	VS 400 x 2	1,5 x 2	220

Unit size	Min Air Flow		Max Air Flow		Air Flow						
	CMH	CFM	CMH	CFM	CFM						
					0	1000	2000	3000	4000	5000	6000
39S-35	1500	883	3500	2060							
39S-50	2100	1236	4500	2660							
39S-70	3000	1766	7000	4120							
39S-85	3400	2001	8500	5003							
39S-100	4200	2472	9500	5621							

Unit size	Coil Volume			Coil Connections			
	WCL4R	WCL6R	DX6R	WCL4R, WCL6R		DX6R	
	[ Liters ]			φD <sub>in</sub>	φD <sub>out</sub>	φD <sub>in</sub>	φD <sub>out</sub>
39S-35	6,33	9,5	9,5	DN32	DN32	2x5/8"	2xØ28
39S-50	8,24	12,36	12,36	DN50	DN50	2xØ22	2xØ35
39S-70	12,08	18,13	18,13	DN50	DN50	2xØ22	2xØ35
39S-85	15,44	23,16	23,16	DN50	DN50	2xØ22	2xØ35
39S-100	17,23	25,84	25,84	DN50	DN50	2xØ22	2xØ42



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