

Premium Solution in **Air Delivery**



RR HVLS Fan

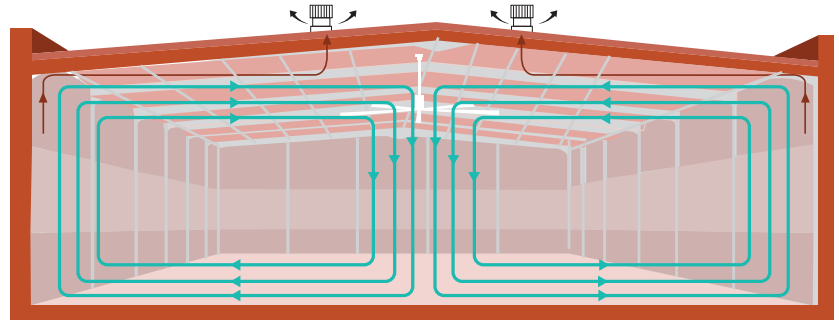
HIGH VOLUME LOW SPEED FAN

What is HVLS Fan :

A High Volume Low Speed (HVLS) fan is a air circulating device of larger diameter. It is available in sizes of 8 feet to 24 feet. HVLS fans are generally ceiling fan although some are pole mounted. HVLS fans move slowly and distribute large amounts of air at low rotational speed. Hence they are called High Volume Low Speed (HVLS) fan.

Concept :

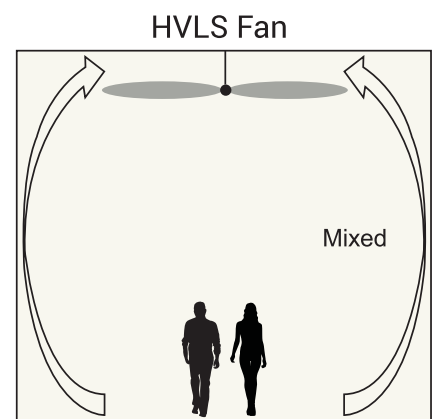
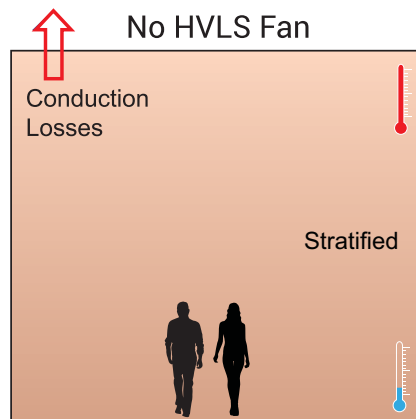
HVLS fans work on the principle that cool moving air breaks up the moisture saturated boundary layer surrounding the body and accelerates evaporation to produce a cooling effect. HVLS Ceiling fans produce a column of air as they turn. This column of air moves down and out along the floor called a



horizontal floor jet. This deep wall of horizontal moving air is relative to the diameter of a fan, and to the speed of a fan. Once the floor jet reaches the floor, it moves the air outward until it meets a side wall or other vertical surface.

De-Stratification :

In high volume spaces, hot air less dense than cold air naturally rise to the ceiling level through a process called stratification. HVLS fan effectively pushes the hot air down to the floor level. This allows for complete mixing of the air in the atmosphere resulting in temperature drop of 3 to 5 degree depending on season.



Applications :

In industrial applications, air conditioning is impractical due to high floor to ceiling height. HVLS Fans installed in spaces like Warehouses, Factories, Industrial sheds and Machine Shops can prevent heat stresses.

In commercial spaces, where air conditioning is common but is cost consuming due to increased air movement from floor to ceiling. Typical commercial applications include Shopping Malls, Churches, Auditoriums, Airport Terminal and Schools. A critical concern for some commercial spaces is sound sensitivity and quiet operation. HVLS fan combined with existing cooling arrangement will ensure temperature drop of 8 to 12 degree depending on season. It will also reduce the operating cost of air cooling system by minimum 25%.

Comparison between Industrial Air Circulators and RR HVLS Fan :

| Size | 24 Feet | 30 Inches or 750mm |
|-----------------------|--------------------|--------------------|
| Power | 1.5kW or 1500W | 320W |
| Number of fans | 1 | 30 |
| Operating power in kW | 1.5kW or 1500W | 9.6kW or 9600W |
| Operating Cost | ₹ 135 for 10 hours | ₹ 864 for 10 hours |

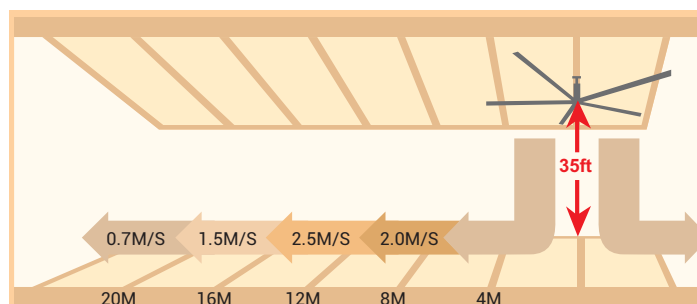
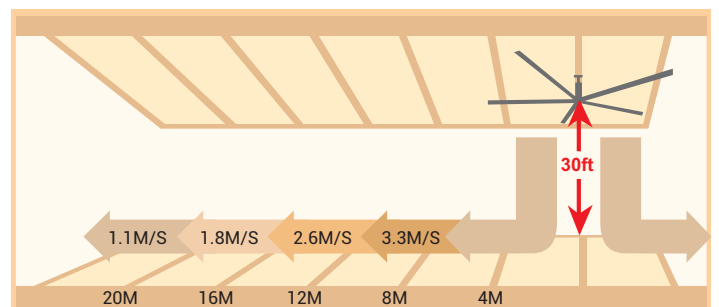
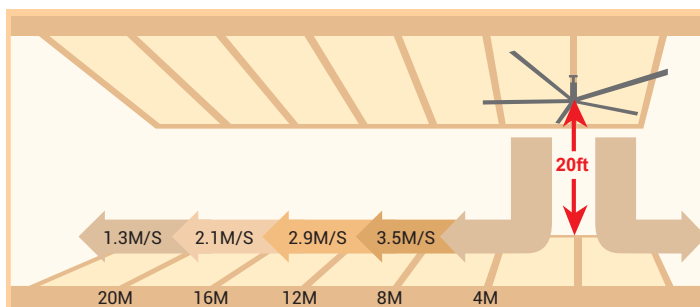
Unit Rate per hour = ₹ 9.00

Technical Specifications :

| Model | Fan Diameter (feet) | Air Delivery (CFM) | Floor to Ceiling Height (feet) | Motor (kW) | Fan Speed (RPM) | Area Coverage (sqft) |
|--------|---------------------|--------------------|--------------------------------|------------|-----------------|----------------------|
| HL08GV | 8 | 1,30,000 | 13 to 15 | 0.75 kW | 110 | 4,000 |
| HL12GV | 12 | 1,75,000 | 15 to 18 | 0.75 kW | 95 | 7,000 |
| HL16GV | 16 | 2,25,000 | 18 to 22 | 1.10 kW | 80 | 10,000 |
| HL20GV | 20 | 3,00,000 | 22 to 27 | 1.5 kW | 65 | 15,000 |
| HL24GV | 24 | 3.75,000 | >27 | 1.5 kW | 55 | 20,000 |

Air Delivery and Area Coverage subject to change depending Floor to Ceiling height

Horizontal Air Floor Jet Pattern for 24 feet HVLS Fan w.r.t. Floor to Ceiling Height :

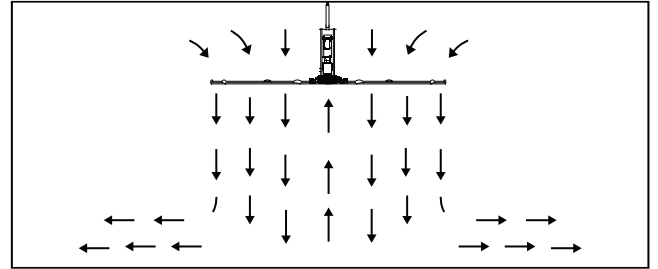


Understanding Airflow Patterns:

Correct fan placement is crucial for maximizing uniform airflow distribution.

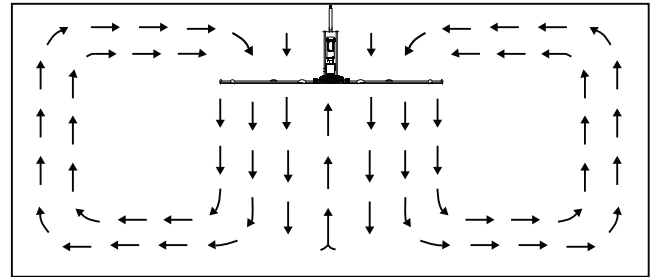
Airflow in an Open Area:

The airflow moves from the fan toward the floor. When airflow hits the floor, it moves outward in all directions. The deflection of air off the floor is called Horizontal Floor Jet.



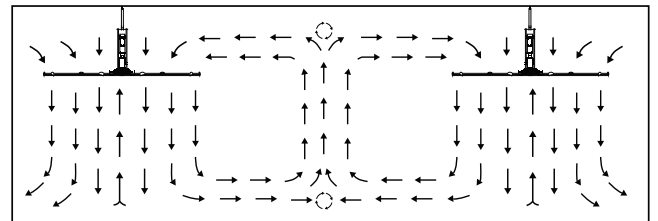
Airflow in an Enclosed Area:

The Horizontal Floor Jet radiates outward until it reaches the walls, which deflect the jet upward. After it hits the ceiling, the upward flow is directed inward to the low pressure area above the fan where it is then pulled down toward the floor. This creates a convection-like air current that gathers momentum. Once this current is established, the fan begins to move air outside the current, escalating its cooling effects.



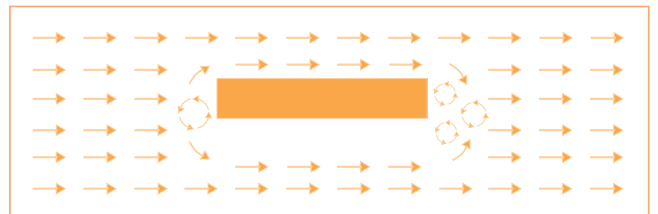
Airflow with multiple fans:

When there are multiple fans appropriately spaced, the expanding jets of adjacent fans meet to create a pressure zone. The pressure zone acts like a wall, causing each fan to behave like a single enclosed fan. Typically, a single fan's performance will increase when working in conjunction with other fans.



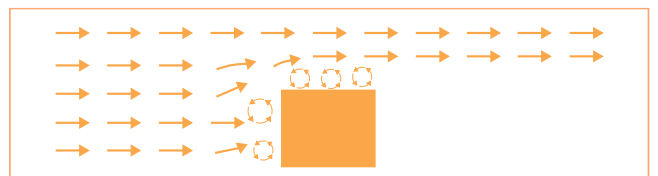
Airflow with Streamlined Obstruction:

Obstructions on the floor tend to block the horizontally moving air. Thin or streamlined obstructions do not block much airflow, regardless of size. The air tends to flow smoothly around these obstructions, losing little momentum, and leaving only a small stagnant area behind the obstruction.



Airflow with Wide, Blunt Obstruction:

A wide, blunt, or flat-faced obstruction forces the air to change direction, turning upward and outward. There is a stagnant area behind these obstructions that is wider and higher than the obstructions themselves.



Product Selection :

8 Feet Fan

| | |
|--------------------------|---------------------------------|
| Model Number | HL08GV |
| Diameter | 8 Feet |
| Blade Material | Extruded Aluminium Alloy 6063 T |
| Number of Blades | 5 |
| Hanging Weight | 100 kg |
| Gear Box | Inline Helical |
| Motor | 1.0 HP / 0.75 kW |
| Operational Speed | 110 RPM |
| Efficiency @ 100% Speed | 1,30,000 CFM |
| Maximum Effective Area | 4,000 sqft |
| Floor to Ceiling Height | 13 to 15 Feet |
| HVLS Fan fixing Distance | 3.5 Feet |

12 Feet Fan

| | |
|--------------------------|---------------------------------|
| Model Number | HL12GV |
| Diameter | 12 Feet |
| Blade Material | Extruded Aluminium Alloy 6063 T |
| Number of Blades | 5 |
| Hanging Weight | 110 kg |
| Gear Box | Inline Helical |
| Motor | 1.0 HP / 0.75 kW |
| Operational Speed | 95 RPM |
| Efficiency @ 100% Speed | 1,75,000 CFM |
| Maximum Effective Area | 7,000 sqft |
| Floor to Ceiling Height | 15 to 18 Feet |
| HVLS Fan fixing Distance | 3.5 Feet |

16 Feet Fan

| | |
|--------------------------|---------------------------------|
| Model Number | HL16GV |
| Diameter | 16 Feet |
| Blade Material | Extruded Aluminium Alloy 6063 T |
| Number of Blades | 5 |
| Hanging Weight | 140 kg |
| Gear Box | Inline Helical |
| Motor | 1.5 HP / 1.10 kW |
| Operational Speed | 80 RPM |
| Efficiency @ 100% Speed | 2,25,000 CFM |
| Maximum Effective Area | 10,000 sqft |
| Floor to Ceiling Height | 18 to 22 Feet |
| HVLS Fan fixing Distance | 3.5 Feet |

20 Feet Fan

| | |
|--------------------------|---------------------------------|
| Model Number | HL20GV |
| Diameter | 20 Feet |
| Blade Material | Extruded Aluminium Alloy 6063 T |
| Number of Blades | 5 |
| Hanging Weight | 160 kg |
| Gear Box | Inline Helical |
| Motor | 2.0 HP / 1.50 kW |
| Operational Speed | 65 RPM |
| Efficiency @ 100% Speed | 3,00,000 CFM |
| Maximum Effective Area | 15,000 sqft |
| Floor to Ceiling Height | 22 to 27 Feet |
| HVLS Fan fixing Distance | 3.5 Feet |

24 Feet Fan

| | |
|--------------------------|---------------------------------|
| Model Number | HL24GV |
| Diameter | 24 Feet |
| Blade Material | Extruded Aluminium Alloy 6063 T |
| Number of Blades | 5 |
| Hanging Weight | 175 kg |
| Gear Box | Inline Helical |
| Motor | 2.0 HP / 1.50 kW |
| Operational Speed | 55 RPM |
| Efficiency @ 100% Speed | 3,75,000 CFM |
| Maximum Effective Area | 20,000 sqft |
| Floor to Ceiling Height | 27 Feet and above |
| HVLS Fan fixing Distance | 3.5 Feet |

Fan Control Panel :

Variable Frequency Drive (VFD) of a reputed make with full variable speed operation.





ABOUT US

RR Global, a part of Ram Ratna Group, is a leading conglomerate in the Electrical industry and a global manufacturer. We collectively engineer every electrical need of a modern society through the four business lines, we operate in:

- **Wires and Cables (RR Kabel)**
- **Winding Wires (RR Shramik)**
- **Electrical Consumer Durables and Accessories (RR Electric)**
- **Electro-Mechanical Multilevel Car Park Solutions (RR Parkon)**

The group has a turnover of ` 4300 Cr. We proudly lead the way in all aspects of innovative, well-engineered solutions that are integrated into the highest quality products. A conglomerate with many group companies, Ram Ratna Group is headquartered in Mumbai, with corporate office in Baroda and has presence across India and abroad with 1 plant each in Bangladesh, Nepal and Middle East and 9 world-class manufacturing facilities in India.

ABOUT RR ELECTRIC

Ram Ratna Electricals Limited (RREL) is subsidiary of RR Global which is engaged in the production and distribution of the following products under the brand name RR Electric.

The products on offer are sleek designed and features, that compare with the best. Superior performance and of course the safety and reliability that have been the hallmark of RR over the years. It's our way of making life just a little more comfortable for the Indian consumer.

Product range comprises of:

Fans:

It has a wide range for both domestic and industrial customers. The range encompasses of the entire spectrum from ceiling, wall, table fans, pedestal, domestic exhaust fans and industrial fans.

RR Electricals is proud to launch Super Power Saver 28W Ceiling Fan under the brand name "MH Classic"- India's Lowest Wattage Branded Ceiling Fan. This Super Power Saver Ceiling Fan comes with service value of 8.0 plus. It saves 60% power compared to a conventional fan and hence your Fan becomes FREE in 9 months**.

Appliances:

Appliances comprise of a range of Water Heaters, Electric Irons, Immersion Rods, Room Heaters, Room Coolers etc.

Switches:

It has a wide range for both domestic and industrial customers. Launched the first of its kind "Design it Yourself" switches which are very well received and appreciated by the market. We have also designed and launched one of its kind in India - a 3 plate switches with transparent options in them.

LED Lighting:

It covers a comprehensive range of LED Lighting for domestic, industrial and outdoor applications. The product range comprises of LED Bulbs, Tube lights, Panel lights, Downlights, Flood lights, Hi-Bay, Bollard lights, Street Lights along with Poles etc. The product mix meets the requirements of both B2B and B2C customer for the value of money. Our products come with warranty and are backed by an efficient customer service team. We constantly strive towards innovation and improvisation of our various products and offerings.

Customer Care Toll Free No.: 1800 103 2676



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