

superfan



Super Energy Efficiency & Innovation

INDIA'S FIRST BLDC FAN

Made in Coimbatore, India

The Coimbatore Innovation That Changed Everything in the Indian Fan Industry

01-01-2023 can be considered a red letter day for Fan Industry in India as mandatory star labelling for fans has begun. It has taken 10 years since India's first super energy efficient ceiling fan, Superfan was officially sold to its first customer on 01-01-2013. We have fond memories of Mrs. Abha Shukla, IAS who was instrumental in including Versa Drives in discussions at the Bureau of Energy Efficiency (BEE). Soon after Dr. Ajay Mathur, then DG of BEE always had time to meet us and guide us on interactions with Power Ministry and BIS to bring Super Energy Efficient(SEE) ceiling fans to the mainstream. The current DG of BEE, Mr. Abhay Bakre was decisive in implementing mandatory labelling for ceiling fans. Dr. Ashok Kumar and Mr. Sourabh Diddi provided timely support at BEE. They all at BEE must be proud now. CLASP and PRAYAS played vital roles in these efforts. The persistent involvement of the staff of the Bureau of Indian Standards (BIS) brought about much-needed revision in the standard for domestic fans which enabled BEE to revise the star ratings.

Indian Railways took the lead in changing their tender specification to push SEE fans into usage. EESL, Tata Power, and Reliance Energy sold SEE ceiling fans to their consumers. Many organizations and societies like TERI, IGBC, Shakti Foundation, UNIDO, AEEE, IAEMP, Auroville, and several others actively promoted. Private educational institutions like KL University, Kalasalingam University, and Excel were early users in sizeable numbers. All the efforts culminated in this success, when IFMA, led by its then president, Sriram Rangarajan, participated in effecting the necessary change. While Superfan led the technology for super efficiency and product features with numerous patents and awards, Atomberg made huge strides in commercial success inviting large sums as an investment since their start in 2017. Several new entrants contributed to this positive effort by getting into the SEE ceiling fans market. In the market, the dealers and distributors were enthusiastic about putting up SEE fans upfront in their display. Every consumer who was aware of SEE fans adopted them. In my opinion, it was a lack of awareness that kept the SEE fans market small.

From Jan 1st, the maximum energy that a ceiling fan can consume is 52.5W which would be rated 1-star, delivering a minimum of 210CMM air flow, for a 1200mm span. There are plenty of 5-star ceiling fans that use BLDC motors which consume anywhere from 35W to 25W to deliver 230CMM airflow.

Let us see the impact in numbers using the same safe assumptions which may be close to actual data. In the calculations here, anyone interested can change the numbers if better data is available. A regular ceiling fan using an induction motor with a No-star rating that delivers 230CMM would consume 75W. At medium speed, this fan would consume 42W, the same for a 5-star SEE fan is 14W. According to a survey of MOEF, the average ceiling fan usage is 2520 hours in a year and at medium speed. Assuming in the calendar year 2022 that 30 million No-star ceiling fans were sold, the energy these fans would consume in one year is,

One No-star regular fan's consumption in a year	1 x 2520 x 42 = 105840Wh or 105.84Units/year
For 30 million No-star fans sold in 2022, The energy consumed in a year	105.84 x 30 x 106 = 3.175 BillionUnits.
One 5-star SEE fan's consumption in a year	1 x 2520 x 14 = 35280Wh or 35.28Units/year
If 30 million 5-star SEE fans were sold in 2022, The energy consumed in a year	35.28 x 30 x 106 = 1.058 BillionUnits.
One 1-star fan's consumption in a year	1 x 2520 x 39 = 98,280Wh or 98.28Units/year
If 30 million 1-star fans are sold in 2022, The energy consumed in a year	98.28 x 30 x 106 = 2.948 BillionUnits. Note: (1 Unit = 1kWh)

For our country, the savings every year with a 1-star fan is 0.226 BillionUnits. My take is that the 1-star fan is not capable of delivering the 230CMM airflow expected by consumers and therefore will be rejected in the market. Typically, living in a tropical country, we need 230CMM of airflow in summer and on sultry days. This fan performs poorly at medium and lower speeds in terms of energy consumption and power factor. The 5-star fans with high savings in electricity bills and comforts like remote control, and no-heat motor should do well with aspiring consumers. The next round of revision of the Star rating by BEE after two years should result in the current 1-star fan going out of the market and only SEE fans would be made and sold. This would result in savings of 2.116 billion Units and more year on year! We need to see this number considering 700 grams of coal being burnt to use 1 unit of electricity and this savings is almost 8% of electricity generated by NLC in 21-22!

Most Awarded Ceiling Fan



India Innovation Initiative Award, 2013



Appliance Design EID Excellence in Design, 2014



Dupont Global Sustainability award, 2015



International Design Awards



Time India Award, 2017

The technology leader in the Indian fan industry



India's First Super Energy Efficient Ceiling Fan





Origin of Superfan

In 2010, at a conference, Sanjeev Keskar, then at Freescale, mentioned that we should develop an electronic drive for the BLDC ceiling fan motor as we are drive experts. A couple of days later, back at our factory in Coimbatore, Durga walked into my room to say that he came across an article "Ceiling fans: an overlooked appliance" by Prayas, Pune, and was astonished by the numbers presented on the ceiling fans. The discussions followed and it was decided to take it up as a project considering the potential energy savings. After we developed the drive, we realized there are no motors available in the country to make use of our drive. By this time we had gotten into the motor design when Ravi Nagaraj joined us. This multifaceted team could develop a motor and drive and surpass their target specification which still holds good. The cost, the elective policy on star rating, and their timid approach were a deterrent to traditional manufacturers to adopt the technology. Therefore Versa Drives decided to launch as a complete ceiling fan under the brand name of Superfan on 12-12-2012 in Chennai. From the beginning, we were set to change the industry and the market to be conducive to energy efficient products and thus resulting in close association and efforts with NGOs and government agencies as elucidated earlier.

The first Superfan was delivered to Mr. Durairaj, Trichy who ordered on 01-01-2013. The very first model - Super X1 - showed to the market that at just 33W consumption, 230CMM airflow can be achieved. It had several innovative and never-before-seen features like a drop-safe remote control, low-voltage operation (120Vac), immune to supply fluctuation, no-heat motor, and ten fun colors with recyclable plastic-free and thermocol-free packing.

All these features have now become the norm in the industry as the rest of the industry followed Superfan's lead. Our first major

recognition for the innovation came from the Department of Science and Technology when Superfan was chosen as the most innovative product of the year at India Innovation Initiative 2013. Then came several national and international awards to Superfan for innovation and fearless approach in the market, most notably from Dupont, the Global Sustainability Award 2015. In the following year, we participated in the famous Consumer Electronic Show in Las Vegas, USA. Later we were invited to a discussion at the White House on sustainable products.



We continued to improve Superfan products in terms of performance and processes. As the rest of the industry caught up to us we released our new model Super Q in 2021, which was 50% more efficient than the rest of the industry. This fan delivered the required airflow at only 25 W and it was chosen as the most efficient ceiling fan in the year 2020 by BEE and is still the most efficient fan in India.

The mandatory labeling has forced all the popular brands to have these SEE in their catalog and energy efficiency has become a market driver. Superfan was begun to replace 40 crore inefficient ceiling fans in India with super energy efficient ceiling fans like Superfan, now with the surge of the BLDC fans in the market, the path towards that goal is set and the change is on the way. One of the remaining impediments to this objective is inefficiency and waste in the existing sales and marketing practices of the industry.

Versa Drives is applying its innovative approach to resolve these aspects as well. Moreover, our motor control expertise is targeting solutions that can create similar shifts in other appliances that have motors like air coolers, ACs, and pumps and initiate a similar revolution in those spaces and build a sustainable environment for our nation through indigenous technology

An account of the decade of super energy efficient fans by Sundar Muruganandhan (MD Versa Drives Private Limited).



CII National Award for Excellence in Energy Management, 2015 & 2021



Global LEAP Award 2016-2017.



India Design Mark Award, 2017



Most Energy Efficient Appliance of the Year, 2020



6 PLUS PATENTS



2018



2019



2020



2021



6 PLUS PATENTS



SUPERFANS ARE MADE HERE

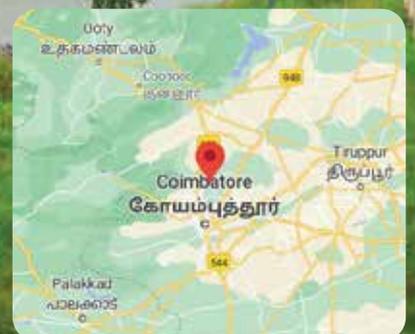
Superfan not only makes energy saving product but does so in an eco-friendly way



Superfan factory utilizes eco-conscious practices, materials, and packaging. It features strategic windows, atriums, and high ceilings to reduce lighting and cooling load while minimizing the use of cement, sand, and water in its construction.

The avoidance of a manicured garden eliminates the need for water, synthetic fertilizers, and insecticides. The building design maximizes the rainwater catchment and collects hundreds of thousands of litres of water annually.

Additionally, the factory has an organic vegetable garden for the members. As the rest of the campus is left as it was before the factory was constructed, the land continues to be a habitat for diverse birds and small animals.



10 REASONS TO BUY SUPERFAN



69%

Save more than 69% electricity



More air
Less electricity



Remote control
for comfort



Only true Indian
BLDC fan



BEE
5 star rated



5 years
warranty



Avoid 1.5 kg of CO₂
emission/day



Eco-friendly
packaging



Save more than
₹ 1000/year/fan



Inverter and
solar friendly

India's First

BLDC

Fan



By using Superfan instead of a regular fan, you are,

Avoiding 1 kg of coal being
burnt every day

Avoiding 1.5 kg of CO₂
emission every day

Avoiding 2 lts of fresh water
contamination every day



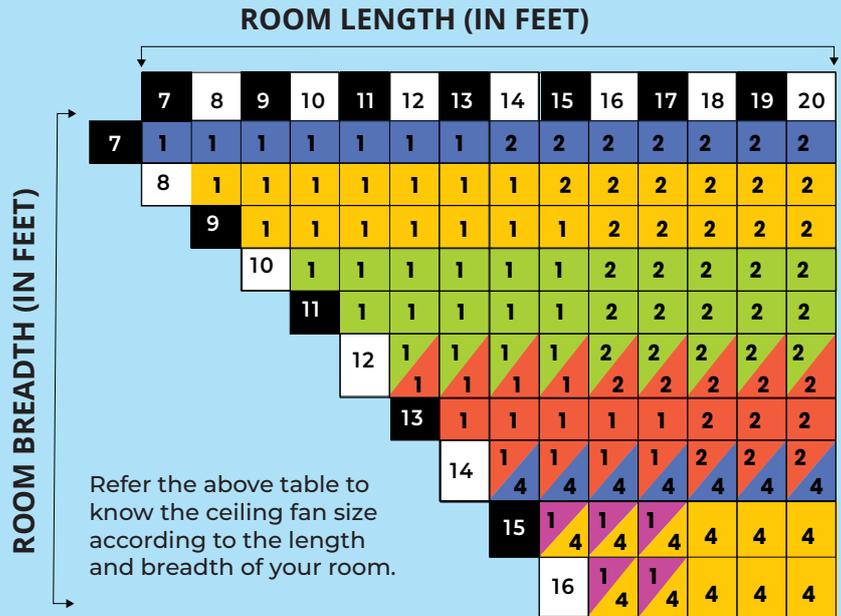
HOW TO CHOOSE A CEILING FAN?

STEP 1 SIZE

To find the appropriate ceiling fan span, consider the length and breadth of the room

Ceiling Fan Sizes (in inches)

- 36"
- 42"
- 48"
- 56"
- 60"



STEP 2 FAN TYPES

HIGH SPEED CEILING FAN

HIGH FLOW CEILING FAN

STEP 3 STAR RATING

The higher the star, lesser the electricity consumption

**MORE STARS
MORE SAVINGS**

SERVICE VALUE	STAR RATING	MAX POWER	MONEY SAVING	
$x < 4.0$		>75 W	0	
$4.0 \leq x < 4.5$		<57 W	>300 Rs/Yr	→ Regular fan
$4.5 \leq x < 5.0$		<51 W	>600 Rs/Yr	} Fewer Choices & Low ROI
$5.0 \leq x < 5.5$		<46 W	>800 Rs/Yr	
$5.5 \leq x < 6.0$		<42 W	>900 Rs/Yr	} BLDC Motor
$x > 6.0$		<38 W	>1000 Rs/Yr	

$$\text{Service Value (CMM/W)} = \frac{\text{Highest Airflow (in CMM)}}{\text{Highest Power Consumed (in W)}}$$

(x - Measured Service value)

All values are nominal for 48" inch fan delivering 230 CMM airflow for 12 hours/day at Rs 6.50 / Unit.

STEP 4 WARRANTY

Ceiling fans are long-lasting appliances with an average life span of over 10 years.

Hence look for higher warranty to minimize running costs.



STEP 5 FEATURES

Colours



Control



Technology

-  BLDC Fan
-  Normal Fan

HIGH FLOW CEILING FAN

Large volume of air
@ Optimal speed



**BREEZY
FEEL**



**SUITS
LONGER USE**



Bedroom



AC rooms



Living room



Pooja room



Office space



TWO TYPES OF CEILING FAN



HIGH *SPEED* CEILING FAN

Small volume of air
@ High speed



**FORCEFUL
FEEL**



**SUITS BRIEF
USE (<30min)**



Living room



Dining room



Kitchen



Waiting area



Stuffy nose, tiredness ?

when you wakeup

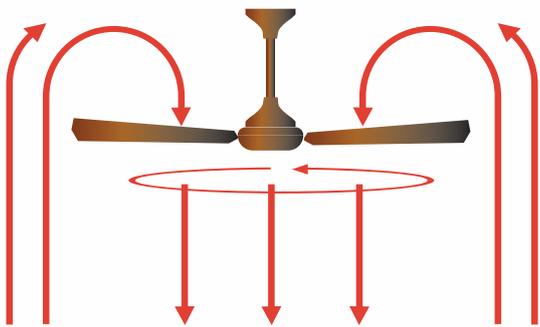


Maybe it's your

High speed fan!

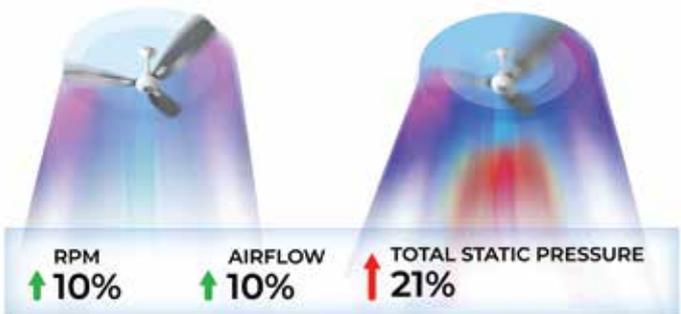
Ceiling fans move the air around a space and create a wind-chill effect through evaporation of sweat on our skin, which makes us feel cooler (also known as evaporative cooling). This air movement has two components: volume and speed. Designers of fans control these two parameters to deliver thermal comfort. In essence, fans don't cool the room but only the people in the room.

under the fan, in a fan, the RPM and airflow are directly proportional. When RPM is increased by 10%, airflow increases by 10%, and static pressure increases by 21%. Thus, high RPM fans have high pressure under them. A longer exposure to this constant pressure coupled with moisture removal may lead to muscle stiffness and tiredness.



Typical fans in India have an airflow of 230 Cubic Meter per Minute (CMM) and these fans achieve that by moving smaller volumes of air at higher air speeds by rotating at high RPM (greater than 350 RPM). Just like blowing high speed air cools down a hot cup of tea through evaporation, our body loses extra moisture beyond the requirement for cooling when exposed to this high speed air for longer duration like while sleeping. This loss of moisture may trigger nose blockages, coughs due to dryness in the throat after a night's sleep. Additionally, the high rotational speed increases the pressure

It is clear that volume of airflow is required for thermal comfort than the air speed. So Superfan designed Super Q to be a "High flow fan", its unique blade shape moves a large volume of air at an optimal speed to deliver the same comfort as a high-speed fan, but without the extra pressure and high speed air to eliminate all the above-mentioned discomforts. Additionally, this fan is quieter, more efficient, and offers wider coverage. Due to the high efficiency blade Super Q is considered the most efficient fan in the country, and has been recognized for it by Ministry of Power, Govt. of India through NECA award.



Note: High-speed fans are not always a bad choice; they perform better in spaces like waiting areas, kitchens, factories, and such.

super Q

High flow BLDC ceiling fan

Comfort is
High Flow
Not High Speed

Healthy Airflow

Highest Efficiency

Quieter Comfort

INDIA'S MOST ENERGY EFFICIENT CEILING FAN

50% more efficient than any other 5-star rated fan.

20% 20% more airflow than any ceiling fan.

Winner of

Appliance of the year

National Energy Conservation Awards from Bureau of Energy Efficiency under Ministry of Power, Govt. of India



High flow BLDC ceiling fan

 **2 Times Quietness.**

6ft

49 dBA



4ft

45 dBA



2ft

43 dBA



HEALTHY AIRFLOW



Low Pressure
High Airflow

Refer page 13

HIGHEST EFFICIENCY

69% SAVINGS

super Q

Runs 4 Nights/Unit



40 hours per unit.

Regular Fan

Runs 1 Night/Unit



13 hours per unit.

Technical Specifications

Parameters	Size Variants					
	24" (600mm)	36" (900mm)	42" (1050mm)	48" (1200mm)	56" (1400mm)	60" (1500mm)
Typical speed (RPM)	420	320	280	270	230	210
Typical input power (Watts)	20	25	25	35	35	40
Air flow (m ³ /min)	120	150	210	260	300	340
Service value (m ³ /min/watt)	6.0	6.0	8.4	7.4	8.6	8.5

Rated supply: 230Vac (50Hz) Power factor: >0.9 Voltage range : 90 to 300 Vac

Noise levels tested at FCRI India. Background noise: 19.3 dBA. For humans, a 10dBA reduction in noise is equivalent to 2 times quietness.

Shaped for Comfort: Airflow Redefined

We developed this Super Q blade shape to simulate a natural breeze. Our unique shape is crafted with precise dimensions to deliver high efficiency, quieter airflow, and healthier comfort.



20%

More Airflow.

Wider & uniform
260CMM airflow.

Super Q AirFlow

Large
5 Feet
Fan

super Q

For every room

super Q blade shape is designed to maintain efficiency and comfort at all sizes from 24 in. to 60 in



Pearl white



Electro radiance



Elegance brown

**REMOTE
Super T6**



Scan to know
More



High Speed BLDC Ceiling Fan

SUPER

X
Series



Fan Size
1200 mm
(48")



Max Speed
385 RPM



Input Power
35 W @
385 RPM



Rated Supply
230 Vac
(50 Hz)



Lilac



Brown



Pink



Yellow



Blue



White



Pot brown



Scan to know
More





Voltage Range
90 to 300
Vac



Air Delivery
230 CMM



Power Factor
>0.9



Service Value
6.6



Mahogany



Dark Teak



Light Teak



BUG



BUBBLE

High Speed BLDC Ceiling Fan

SUPER

A

Series



Metallic Royal Pink



Metallic Silver



White



Brown



Pink



Metallic Violet



Carbon



Metallic Blue



Scan to know
More

**Metallic
Finish**



**WITH 10 KEY
T4 REMOTE**



Fan Size
1200 mm
(48")



Max Speed
350 RPM



Input Power
35 W @
350 RPM



Rated Supply
230 Vac
(50 Hz)



Voltage Range
90 to 300
Vac



Air Delivery
230 CMM



Power Factor
>0.9



Service Value
6.6



**5 STAR
RATED**

Super X UNYC

It's a piece of Art



Decorate your space with style

We offer an exclusive series of designer fan that are hand-painted. As it is hand-painted, each fan is unique and there cannot another one of the same. Typical themes are around Indian culture, practices, heritage, and art. This model was conceived to support local artists, the premium on the fan goes to the artist communities. These fans can be customized and personalized upon order.

HAND PAINTED

CUSTOMIZABLE



High Speed BLDC Ceiling Fan

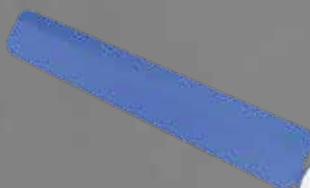
SUPER

V

Series



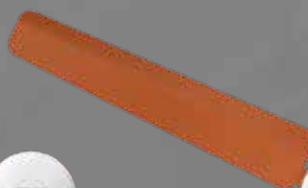
WITH 10 KEY
T4 REMOTE



Blue



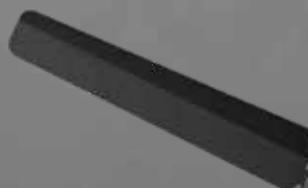
Brown



Orange



Purple



carbon



Yellow



White



Scan to know
More



Fan Size
1400 mm (56")



Voltage Range
90 to 300 Vac



Max Speed
270 RPM



Air Delivery
270 CMM



Input Power
40 W @ 270 RPM



Power Factor
>0.9



Rated Supply
230 Vac(50 Hz)



Service Value
6.8

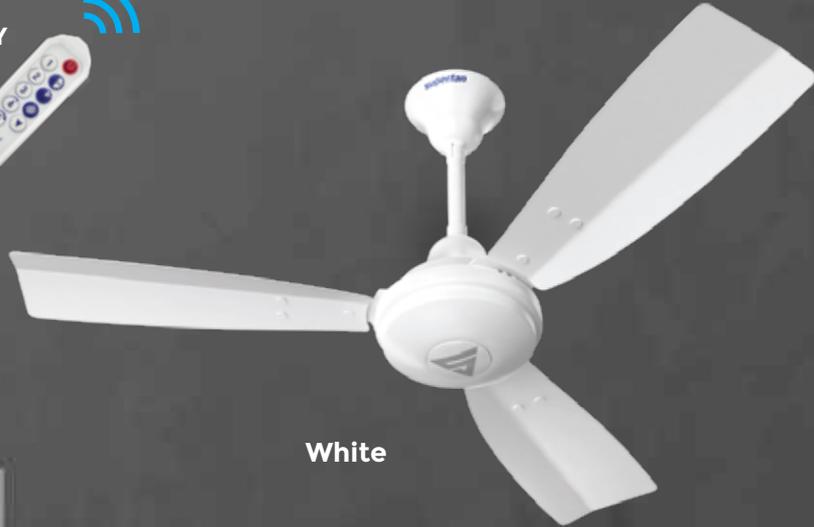
SUPER **J**
Series



Brown



WITH 10 KEY
T4 REMOTE



White



 Fan Size 900 mm (36")	 Voltage Range 90 to 300 Vac	 Max Speed 420 RPM	 Air Delivery 133 CMM
 Input Power 25 W @ 420 RPM	 Power Factor >0.9	 Rated Supply 230 Vac(50 Hz)	 Service Value 5.5

High Speed BLDC Ceiling fan

PROJECT MODELS

SUPER E
Series



5 STAR
RATED



WITH 10 KEY
T4 REMOTE

High Flow BLDC Ceiling fan

super Q



5 STAR
RATED



WITH 10 KEY
T4 REMOTE

*Some functions in the remote may not work in these models

Specs	super Q						SUPER E	
	Q361	Q421	Q481	Q48S1	Q56S1	Q60S1	E1	E28
Fan size (mm /Inch)	900mm (36")	1050mm (42")	1200mm (48")	1200mm (48")	1400mm (56")	1500mm (60")	1200mm (48")	1200mm (48")
Max speed (RPM)	320	280	240	270	230	210	375	350
Input Power (W)	25	25	25	35	35	40	35	28
Air delivery (CMM)	150	210	230	260	300	340	219	220
Service value (CMM/W)	6.0	8.4	9.2	7.4	8.5	8.5	6.3	7.9

Rated Supply : 230Vac (50Hz) **Voltage range :** 90 to 300 Vac **Power factor:** >0.9 **Colors:** White / Brown The values are under standard test conditions.

24 inch fan available.

Regulator and constant speed models are available on request

DC INPUT MODELS

12V, 24V & 48V
variants available
Made to order only

Our Customers



.....and many more.....

About us

Superfan is designed and manufactured by Versa Drives Private Limited, a 30-year-old company in Coimbatore, now one of the premier motor drive design and manufacturer in the country. We are well-known among large OEMs for our innovative solutions, business practices, product reliability, and product service.

In 2019, Murata Manufacturing Co.Ltd acquired a small share in Versa Drives to collaborate on new-age motor drives that would cater to next-generation motor applications.

It is our core belief that sustainability and functionality are not mutually exclusive. Our innovative approach to BLDC ceiling fans has been recognized with design patents. Till now, Superfan is the only BLDC fan that is designed and manufactured in India. Eco-friendliness extends beyond the product at Versa Drives Private Limited, it is a way of life.

We consciously strive to reduce carbon footprint in our manufacturing processes, factory surroundings, and resources. Our hassle-free, fully recyclable packaging exemplifies our commitment to sustainability.



Versa Drives Private Limited

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Vision

“Saving electricity with joy
for a better future.”