

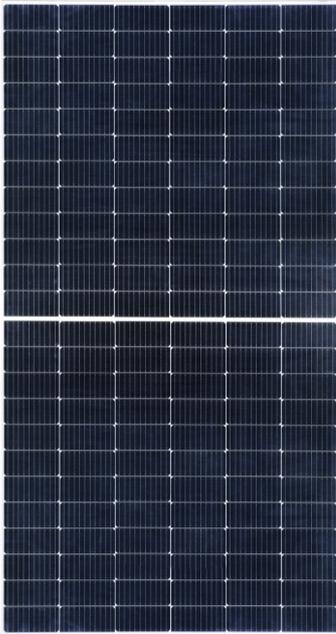
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ASSOCIATE PARTNER



**CHARGED FOR  
SUCCESS**

**INSOLATION ENERGY LTD.**



# PLATINUM SERIES

High Efficiency TOPCon N-type Bifacial  
Glass to Glass Module

## 580 - 600 Wp

580 Wp | 585 Wp | 590 Wp  
595 Wp | 600 Wp  
INA-144THC-GGF-XXX (XXX = 580-600 Wp)



APPLICATION : RESIDENTIAL | COMMERCIAL | INDUSTRIAL | SOLAR PARK

### TECHNICAL DATA

\*STC: Irradiance 1000 W/m<sup>2</sup> module temperature 25°C, Am=1.5;

\*NOCT: Irradiance 800 W/m<sup>2</sup>, ambient temperature 20°C, Am=1.5, Wind speed 1m/sec. Average power reduction of 4.5% at 200 W/m<sup>2</sup> as per IEC 60904-1. Measuring Uncertainty +/- 3%

Module Type	Unit	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power -Pmax	Wp	580	437	585	441	590	445	595	449	600	453
Maximum voltage (Vmpp)	V	45.13	42.02	45.29	42.21	45.46	42.38	45.62	42.56	45.78	42.74
Maximum current (Impp)	A	12.86	10.40	12.92	10.45	12.98	10.51	13.05	10.55	13.11	10.60
Open circuit voltage (Voc)	V	52.60	49.90	52.80	50.10	53.00	50.30	53.20	50.50	53.40	50.70
Short circuit current (Isc)	A	13.65	11.04	13.72	11.09	13.79	11.14	13.86	11.19	13.93	11.24
<b>Module Efficiency</b>	<b>%</b>	<b>22.45</b>		<b>22.64</b>		<b>22.84</b>		<b>23.03</b>		<b>23.22</b>	
Operating Temperature range (°C)		-40 to +85°C				Power Tolerance				Positive Power Tolerance	
Maximum system voltage		DC1500V (IEC)				Nominal operating cell temperature (NOCT)				42 ± 2 °C	
Maximum series fuse rating		30A				Application				Class-A	
Temperature coefficients of Isc (α)		0.0465%/°C				Safety Class				Class II	
Temperature coefficients of Pmax (γ)		-0.3023%/°C				Application Rating				Class A	
Temperature coefficients of Voc (β)		-0.2114%/°C									

\*BIFACIAL OUTPUT – BACKSIDE POWER GAIN @STC\* [Bifaciality Factor: 80% ± 10%]

[Note: The bifacial gain depends on the power plant design and site conditions. Electrical component ratings should be selected as per actual Bifacial gain at site (module currents indicated below)]

\*\*Power gain from rear side depends upon the ground reflectance (Albedo) & Bifaciality factor.

Bifacial Gain	Measurement	Unit	580	585	590	595	600
5%	Maximum Power (Pmax)	Wp	609.00	614.25	619.50	624.75	630.00
	Module Efficiency	%	23.58	23.78	23.98	24.19	24.39
10%	Maximum Power (Pmax)	WP	638.00	643.50	649.00	654.50	660.00
	Module Efficiency	%	24.70	24.91	25.13	25.34	25.55
25%	Maximum Power (Pmax)	WP	725.00	731.25	737.50	743.75	750.00
	Module Efficiency	%	28.07	28.31	28.55	28.79	29.04

### MECHANICAL SPECIFICATIONS

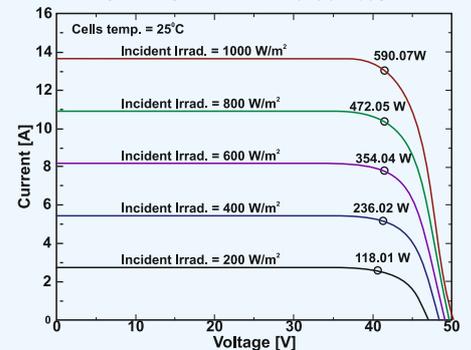
Cell type / No Of Cell	144 Half-cut N-type TOPCon Bifacial Solar cells
Dimensions	2278(L) x 1133(W) x 35(T)
Weight(kg)	32±0.5 Kg
Front Glass	2.0mm AR-coating heat-strengthened glass
Rear Glass	2.0mm heat-strengthened glass
Junction Box	30A Split Junction Box (3 nos. with individual Bypass Diode) – Weatherproof (Ip68)
Solar Cable	4 sq. mm, 300 mm length x 2 Nos.
Connectors	Mc4 Compatible Connect or IEC/UL Ce fied
Frame Material	Anodized aluminum alloy, silver color
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Hail Test	Max. diameter of 25 mm with velocity 23 m/s

**CAUTION:** READ SAFETY AND DETAIL INSTALLATION MANUAL BEFORE USING THE PRODUCT (Refer to our Website).

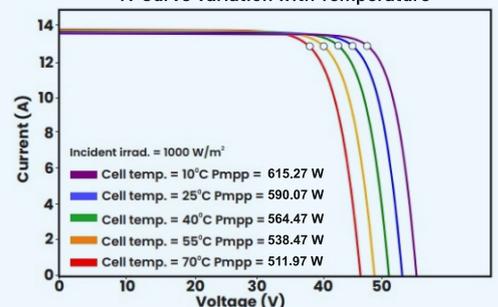
Note: • The specifications included in this datasheet are subject to change without notice.  
• The electrical data given here is for reference purpose only.  
• Please confirm your exact requirements with the sales representative while placing your order. All models sold will be as per INA QAP.

\*\* Warranty: Please read INA solar warranty documents thoroughly.

I-V CHARACTERISTICS AT DIFFERENT IRRADIANCE  
MODEL NO. : INA-144THC-GGF-590

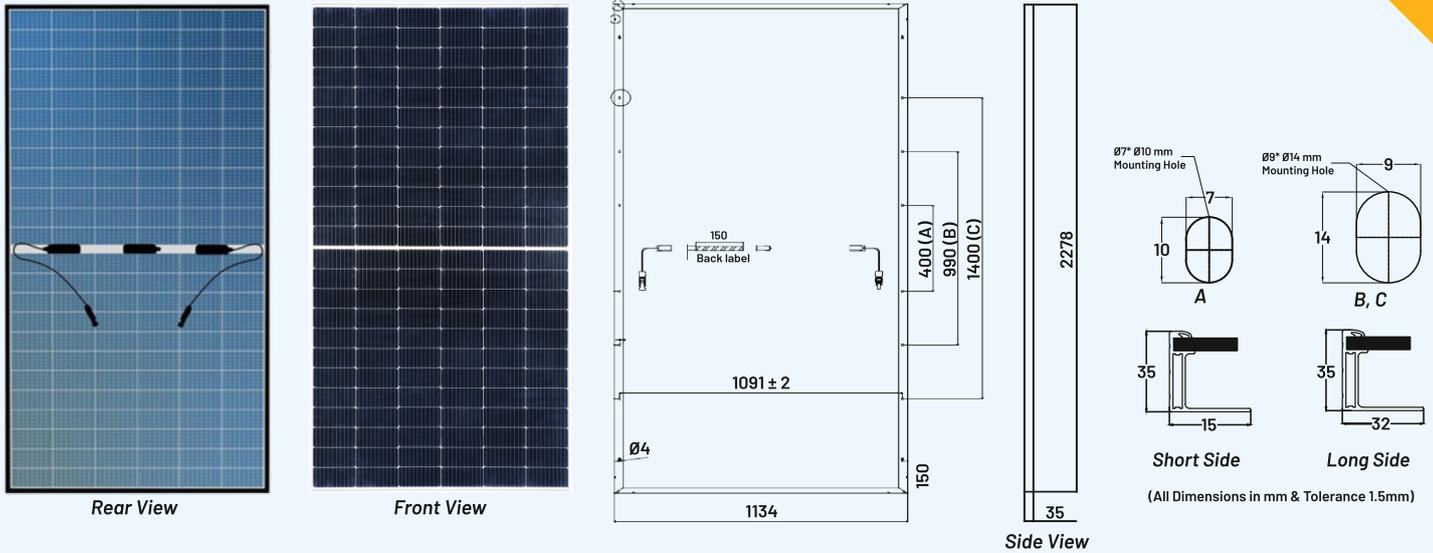


IV Curve Variation with Temperature



# MECHANICAL DRAWING

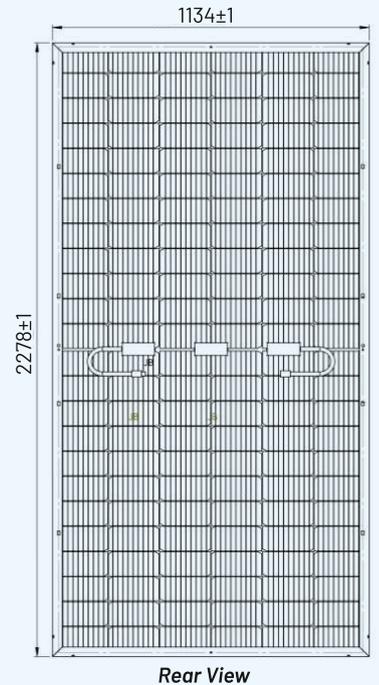
## PLATINUM / DIAMOND SERIES



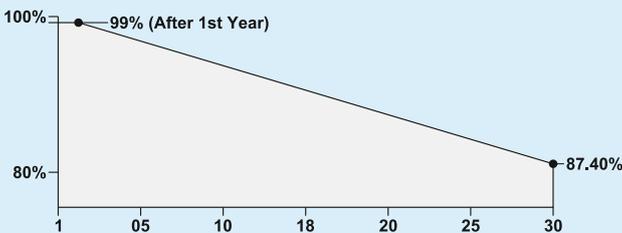
## KEY FEATURES

### PLATINUM / DIAMOND SERIES

1. LCOE is Cut Back with LESS BOS Cost which improves value proposition of the product with competitive ROI.
2. Two Peak Performance Time, for optimum utilization of dual facial Generation.
3. Hassle-free installation with ability to Install Vertically In East West Direction, with improved soiling resistant.
4. Lower Internal Resistance boosts module power helping to achieve minimal power loss.
5. Excellent PID performance guarantee limited power degradation.
6. Reliable quality leads to a better sustainability even in harsh environment like desert, farm and coastline, ammonia.
7. Cylindrical Tabbing Wire is used to reduce the shadow on cell active area.
8. Higher number of busbar makes the PV modules less prone to loss in efficiency and increase tolerance to micro cracks.
9. Only Positive Power Tolerance.



### TOPCON LINEAR PERFORMANCE WARRANTY



- ✓ 12 Years Product Warranty on Materials and Workmanship\*
- ✓ 30 Years Warranty for Linear Performance\*

#### CERTIFICATIONS & STANDARDS:

IEC 61215, IEC 61730-1, IEC 61730-2, IS:14286,  
\*IEC 62716, IEC 62804, IEC 60068-2-68,  
IEC 61853, IEC 61701

IS 14286: 2010/IEC 61215: 2005  
IS/IEC 61730 (PART 1): 2004  
IS/IEC 61730 (PART 2): 2004

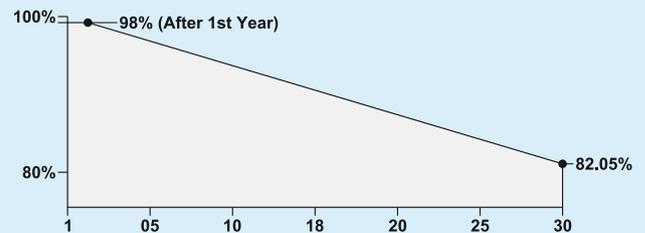


\*(Certifications are under process)

Caution: Please read safety and installation instructions before using the product.

\*Warranty: Linear performance warranty for 30 years, with degradation up to 1% in 1st year and 0.4 %/year from year 2 to year 30. Please read Insolation Energy Ltd. warranty documents thoroughly.

### MONOPERC LINEAR PERFORMANCE WARRANTY



- ✓ 12 Years Product Warranty on Materials and Workmanship\*
- ✓ 30 Years Warranty for Linear Performance\*

#### CERTIFICATIONS & STANDARDS:

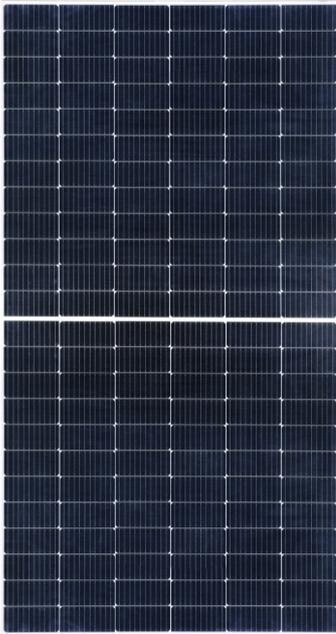
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IEC 61853, IEC 61701

IS 14286: 2010/IEC 61215: 2005  
IS/IEC 61730 (PART 1): 2004  
IS/IEC 61730 (PART 2): 2004



Caution: Please read safety and installation instructions before using the product.

\*Warranty: Linear performance warranty for 30 years, with degradation up to 2% in 1st year and 0.55 %/year from year 2 to year 30. Please read Insolation Energy Ltd. warranty documents thoroughly.



# DIAMOND SERIES

144 Half Cut MONO PERC  
Solar Cell Size - 182 x 182 mm

**550 - 560 Wp**  
BI-FACIAL

550 WP | 555 WP | 560 WP  
INA-144MHC-TF-XXX (XXX = 550-560 WP)



APPLICATION : RESIDENTIAL | COMMERCIAL | INDUSTRIAL  
SOLAR PUMP | SOLAR PARK

## TECHNICAL DATA

\*STC: Irradiance 1000 W/m<sup>2</sup> module temperature 25°C, Am=1.5;

\*NOCT: Irradiance 800 W/m<sup>2</sup>, ambient temperature 20°C, Am=1.5, Wind speed 1m/sec. Average power reduction of 4.5% at 200 W/m<sup>2</sup> as per IEC 60904-1. Measuring Uncertainty +/- 3%

Module Type	Unit	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power -Pmax	Wp	550	410.96	555	413.81	560	416.67
Maximum voltage (Vmpp)	V	41.93	38.92	42.05	39.04	41.77	38.80
Maximum current (Impp)	A	13.12	10.56	13.20	10.59	13.41	10.46
Open circuit voltage (Voc)	V	49.90	46.95	50.01	46.56	50.45	46.56
Short circuit current (Isc)	A	13.98	11.09	14.05	11.16	14.15	11.08
<b>Module Efficiency</b>	%	<b>21.29</b>		<b>21.48</b>		<b>21.98</b>	
Operating Temperature range (°C)		-40 to +85°C		Power Tolerance		Positive Power Tolerance	
Maximum system voltage		1500 VDC		Nominal operating cell temperature (NOCT)		45 ± 2 °C	
Maximum series fuse rating		25A		Fire Safety		Class-C (Type 1)	
Temperature coefficients of Isc (α)		0.048%/°C ± 0.01		Application		Class-A	
Temperature coefficients of Pmax (γ)		-0.32%/°C ± 0.02		Safety Class		Class II	
Temperature coefficients of Voc (β)		-0.28%/°C ± 0.02					

\*BIFACIAL OUTPUT – BACKSIDE POWER GAIN @STC\* [Bifaciality Factor: 70% ± 10%]

[Note: The bifacial gain depends on the power plant design and site conditions. Electrical component ratings should be selected as per actual Bifacial gain at site (module currents indicated below)]

\*\*Power gain from rear side depends upon the ground reflectance (Albedo) 8 Bifaciality factor.

Bifacial Gain	Measurement	Unit	550	555	560
5%	Maximum Power (Pmax)	Wp	575	580	585
	Module Efficiency	%	22.26	22.45	22.64
10%	Maximum Power (Pmax)	WP	600	605	610
	Module Efficiency	%	23.22	23.42	23.61
15%	Maximum Power (Pmax)	WP	625	630	635
	Module Efficiency	%	24.19	24.39	24.58

## MECHANICAL SPECIFICATIONS

Cell Type	Type 72 Mono PERC (144 half cut cells)
Dimensions	2278X1134X35mm (LxWxH) ± 2 mm
Weight	28.00 ± 0.5 kg
Front Cover	3.2 mm High Transmission, Low iron, Tempered Glass, AR coated
Cell Encapsulant	EVA (Ethylene Vinyl Acetate)-FC/UFC
Back sheet	Composite Film Transparent Back sheet
J-Box	IP68 Split type Junction box with individual bypass diodes
Cable	300mmx2nos solar cable, 4mm <sup>2</sup>
Connectors	MC4 Compatible Connect or IEC/UL Certified
Frame Material	Silver Anodized Aluminium frame with twin wall profile
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Hail resistance	Max. diameter of 25 mm with velocity 23 m/s
Standard Packaging	31 Pieces/Pallet

**CAUTION: READ SAFETY AND DETAIL INSTALLATION MANUAL BEFORE USING THE PRODUCT (Refer to our Website).**

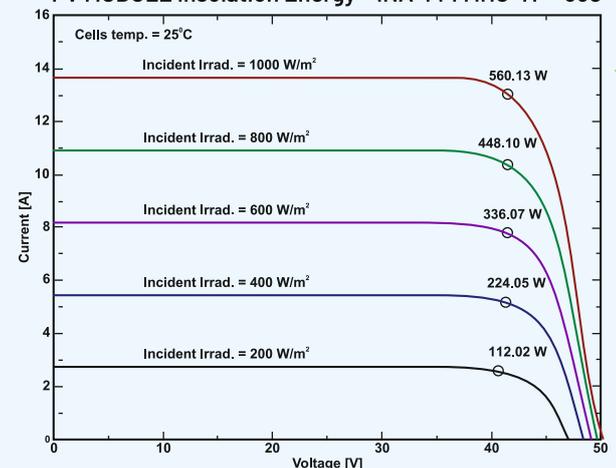
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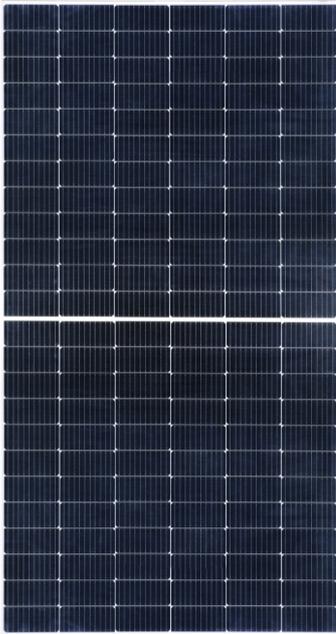
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\*\* Warranty: Please read INA solar warranty documents thoroughly.

## I-V CHARACTERISTICS AT DIFFERENT IRRIDANCE PV MODULE Insolation Energy - INA-144 MHC-TF - 560





# DIAMOND SERIES

144 Half Cut MONO PERC  
Solar Cell Size - 182 x 182 mm

**540 - 560 Wp**  
MONOFACIAL

540 WP | 545 WP | 550 WP | 555 WP | 560 WP  
INA-144MHC-WF-XXX (XXX = 540-560 WP)



APPLICATION : RESIDENTIAL | COMMERCIAL | INDUSTRIAL  
SOLAR PUMP | SOLAR PARK

## TECHNICAL DATA

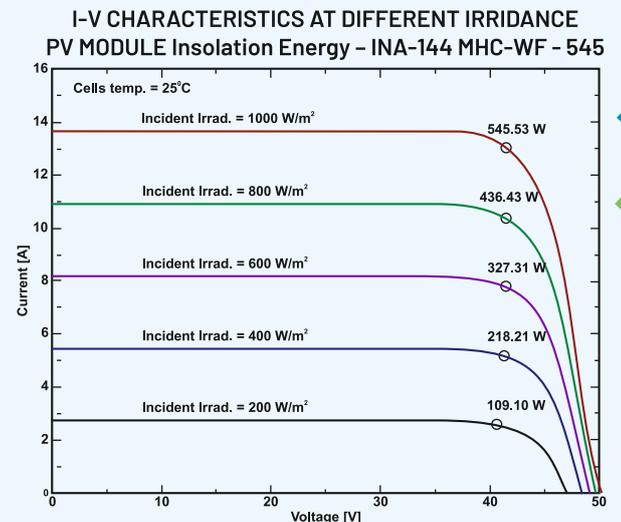
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\*NOCT: Irradiance 800 W/m<sup>2</sup>, ambient temperature 20°C, Am=1.5, Wind speed 1m/sec. Average power reduction of 4.5% at 200 W/m<sup>2</sup> as per IEC 60904-1. Measuring Uncertainty +/- 3%

Module Type	Unit	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power -Pmax	Wp	540	405.0	545	408.8	550	410.96	555	413.81	560	416.67
Maximum voltage (Vmpp)	V	41.81	38.79	41.90	38.80	41.93	38.92	42.05	39.04	41.77	38.80
Maximum current (Impp)	A	12.92	10.46	13.02	10.46	13.12	10.56	13.20	10.59	13.41	10.62
Open circuit voltage (Voc)	V	49.81	46.54	49.76	46.56	49.90	46.95	50.01	46.56	50.45	46.56
Short circuit current (Isc)	A	13.51	10.98	13.90	11.08	13.98	11.09	14.05	11.16	14.15	11.08
<b>Module Efficiency</b>	%	<b>20.92</b>		<b>21.12</b>		<b>21.29</b>		<b>21.48</b>		<b>21.98</b>	
Operating Temperature range (°C)	-40°C to +85°C			Power Tolerance				Positive Power Tolerance			
Maximum system voltage	1500 VDC			Nominal operating cell temperature (NOCT)				45 ± 2 °C			
Maximum series fuse rating	25A			Fire Safety				Class-C (Type 1)			
Temperature coefficients of Isc (α)	0.048%/°C ± 0.01			Application				Class-A			
Temperature coefficients of Pmax (γ)	-0.32%/°C ± 0.02			Safety Class				Class II			
Temperature coefficients of Voc (β)	-0.28%/°C ± 0.02										

## MECHANICAL SPECIFICATIONS

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Weight	28.00 kgs ± 0.5 kg
Front Cover	3.2 mm High Transmission, Low iron, Tempered Glass, AR coated
Cell Encapsulant	EVA (Ethylene Vinyl Acetate )-FC/UFC
Back sheet	Composite Film White Back sheet
J-Box	IP68 Split type Junction box with individual bypass diodes
Cable	300mmx2nos solar cable, 4mm <sup>2</sup>
Connectors	MC4 Compatible Connector IEC/UL Certified
Frame Material	Silver Anodized Aluminium frame with twin wall profile
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Hail resistance	Max. diameter of 25 mm with velocity 23 m/s
Standard Packaging	31 Pieces/Pallet



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## **INSOLATION GREEN ENERGY PVT. LTD.**

**INA 2 - Factory, Jatawali Industrial Area, Tehsil Chomu, Jaipur, Rajasthan - 303806**

**INA 3 - Factory, Sawarda, Ajmer Expressway, Jaipur, Rajasthan - 303338**

**INA 4 - Factory, Narmadapuram, Bhopal, Madhya Pradesh**

Corporate Office: Fluidcon House, C-02, New Aatish Market Extension, Jaipur, Rajasthan - 302020  
+91-141-2996001, 2996002

Delhi Office: 502 A, Arunachal Building, Barakhamba Road, Connaught Place, Near Delhi-01 | Ph. +91 11 43723333

**For Sales Enquiries Call: +91 7240 444 666**

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