XTREME X SERIES

3-phase in/3-phase out 10-500 kVA











DATA CENTER

Compact, high performance three phase power protection with excellent efficiency and scalable runtime for any type of it load, tertiary application, lighting or building and other business critical applications.

The Xtreme X Series UPS brings the latest power conversion technology to the marketplace, using a three level design with a multi mode architecture with latest generation components. These UPS aim to be functional, safe, easy to install and use.

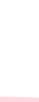
Complete, Cost Effective Solution

- · Online double conversion mode with an real full power, according to IEC 62040: kW=kVA (unity power factor design) means 25% more active power available compared to legacy UPS.
- Dual input mains allow you to manage independent power sources.
- Increased system availability placing UPS in parallel for N+1 and N+X redundancy.
- Internal manual bypass for easy maintenance without power interruption.
- Up to 8 pcs parallelable.
- Multi language big LCD display

Tailored to Your Environment

- Low noise level and higher fan life time with intelligent fan speed control.
- Flexible battery solutions.
- Compact, lightweight and easy to install.
- Frequency converter mode.





- Extended battery life with exclusive battery charging management for increased battery life.
- All in one: 1/1, 1/3, 3/1 and 3/3 phase configurations.
- Adjustable battery quantity.

Lowest Total Cost of Ownership

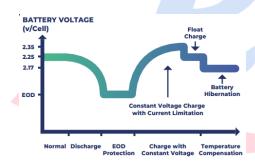
- Thanks to three level inverter design and a multi mode architecture that makes real time decisions between premium protection mode and premium efficiency mode brings efficiency up to 96% at 50% online load operation.
- 10% saving on energy losses compared to legacy UPS gives significant savings in energy.
- Significant reduction in energy loss.
- Reduced energy usage, air conditioning requirements and cooling operating costs.
- Energy Saver mode for global efficiency improvement on parallel systems.
- Up to 35 percent smaller than similar competitive solutions. Saves space with a reduced footprint

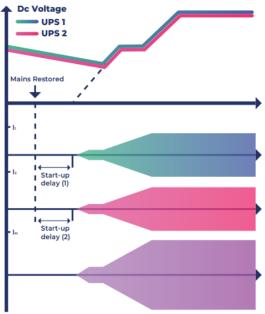
Easy Maintenance

- Built-in manual bypass to eliminate maintenance related downtime.
- Proactive detection of fan failure and switch fault for early diagnosis on UPS malfunction.
- Plug and play card design to simplify the maintenance process.
- Easy service by the help of modular power board concept.
- MTTR is less than 30 minutes.
- Lower spareparts cost by using common boards for different ratings.

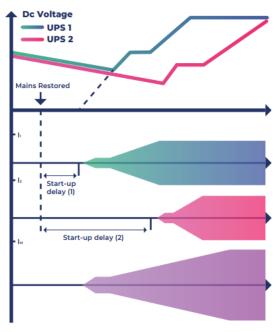
Intelligent Battery Management System

- Thanks to intelligent battery management system increase 35% battery life and maximizes battery performance, life time and reliability through intelligent charging.
- Temperature compensated battery charging monitors performing measurement of external and internal battery temperature and adjusting the charge current rate accordingly. Intelligent battery management system can sustain battery lifespan and the capacity of battery backed up through the functions of;
- Monitoring & compensation battery remaining capacity displayed in percentage.
- Overcharge/discharge protection.
- · Auto/manual battery test.
- Three charging modes ensure maximum battery availability.
- Constant current charging provides maximum rated current to the battery until the voltage rises to a pre-determined limit.
- A boost voltage is provided for a short term to reduce the battery recharge interval.
- Float charging maintains the battery at the recommend voltage.
- Adjustable battery charging time due to the level of the load to save from energy cost.





Dc voltage and AC current behaviour using the same value for delay time



Dc voltage and AC current behaviour using different value for delay time

High Performance Rectifier Clean Input Performance

• Thanks Thanks to the technology used, UPS solves installation problems in systems where the power supply has limited installed power, where the UPS is also powered by a generator or where there are compatibility problems with loads that generate harmonic currents; UPS has zero impact on its power source, being either the mains power supply or a generator. IGBT based rectifier and innovative control algorithm ensures an input Total Harmonic Distortion (THDi) of less than 3% and draws a pure sinusoidal waveform from the mains. This also provides UPS input power factor of >0.99.

Advantages

- Saving in the sizing of upfront equipment e.g. emergency generators, cablings and circuit breakers.
- No disturbances to nearby equipment; eliminate perturbation and outage on upfront electrical equipment, avoiding also any investigation and analysis cost due to malfunction In addition, UPS plays a filter and power factor correction role in the power network upstream of the UPS, as it eliminates harmonic components and the reactive power generated by the powered utilities

Programmable Soft Start

Start up delay function, to restart the rectifiers when mains power is restored if there are several UPS in the system. The programmable soft start allows the rectifier to ramp up in a programmable time period (0-15 seconds) thus eliminating in-rush current.

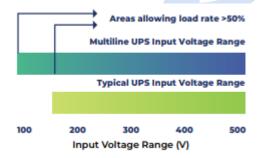
This feature reduces the need of oversizing the input power system (gensets, feeder cables, and over current devices).

Perfect Generator Compatibility

User programmable features such as slew rate, phase angle rate of change and voltage rate of change allow the UPS to quickly sync to a genset during emergency back. Thanks to its robust IGBT rectifier it is enough to choose generator with power only 20% higher rated than the UPS

High Grid Adaptability

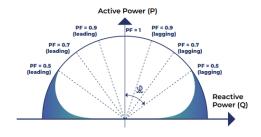
- 138-485 Vac wide input voltage range to minimize battery use: 485-305 Vac for 100% load; 305-138 Vac for 100%-40% load (derating linearly)
- 6 kV/5 kA lightning protection design, reducing lightning related failure rate.



Output Performance

High Output Power factor 1= Real Power (kW)

Real full power, according to IEC 62040: Output power factor of 1 (kW=kVA) rate provides 25% more active power compared to traditional UPS. Suitable for latest generation of servers (leading or unity power factor) without any reduction in active power from 1 leading to 1 lagging. Suitable also for leading power factor loads down to 0.9 without apparent power derating.



Total Harmonic Distortion (THD)

A distorted output voltage waveform affects the proper function of the load's equipment. The Xtreme X Series has very low output voltage THD, eve with connected 100% unbalanced or 100% non-linear loads.

Transient Response

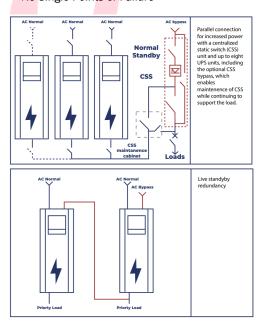
Transient response is very fast due to control algorithms which reduces the need to oversize the UPS for pulse load applications.

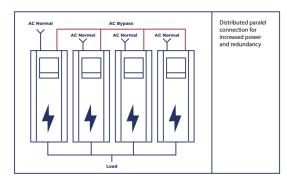
Redundant Parallel Features

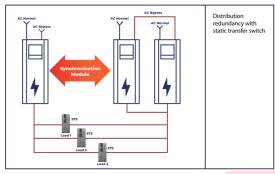
Thanks to unique control technology that can parallel UPS modules with true redundancy by eliminating any single point of failure, RPA provides a scalable paralleling technique that reduces operating footprint and increases system reliability by eliminating the need for external paralleling equipment and cabinets (centralized bypass and master control). One of the UPS modules in the system intelligently takes the leadership role, while the other UPS modules have access to all control parameters. If one UPS fails to operate, the load is automatically redistributed among the others. If the lead UPS fails to operate, then another UPS automatically takes on the leadership role.

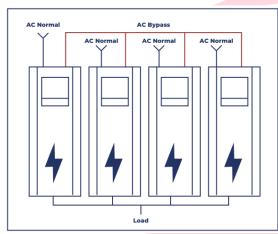
Parallel Operation Features;

- · Parallel connection with ring cable.
- Sequential Soft Start.
- Loop bus connection.
- · Distributed Control Logic.
- Autosensing disconnected parallel cable.
- Redundant Communication.
- Easy power update without any interruption.
- Full synchronization of parallel units.
- Isolated parallel operation card.
- Static bypass for all units.
- No Single Points of Failure









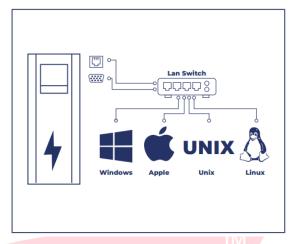
Self Load Power Test

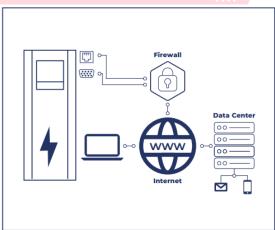
Only 4% incremental energy consumption. Full power test of Rectifier, Inverter, Bypass, Chokes, Capacitors, Cables and Fuses. Customer load safely supplied through maintenance bypass dummy load free.

Software & Connectivity Solutions

- Local communication with RS232 and RS485
- 2pcs configurable input contact
- Relay board with alarms
- GenSet contact
- EPO contact
- USB
- Remote Monitoring Panel
- Battery Temperature Sensor for Temperature compensated charging
- JBUS, PROFIBUS Local connection
- SNMP IT Manager monitoring
- Environment sensors for Data Centers (Humidity, Temperature, Smoke, etc.)
- GSM, Telnet, GPRS communication

- PC & Server shutdown
- · Web page remote monitoring
- Building management system
- E-mail alarm reporting
- Remote monitoring 24/7 technical Service





Features

- Three Level Technology
- Output Power Factor 1 (kVA=kW)
- On Line-Double Conversion Technology (Class VFI-SS-111)
- IGBT PWM Rectifier & Inverter Technology
- Multi Processor Digital Control
- High Efficiency up to 96%
- Higher efficiency with eco-mode (up to 98%)
- Low Input Current THD (≤3%)
- High Input Power Factor (>0.99)
- Low output voltage THD (≤2%)
- Short response time (≤2ms)
- Automatic soft-start
- Cold start
- Dual Input
- Advanced Battery Management
- DC/DC Charger/Booster
- Flexible battery count
- Wide Input Voltage Range
- Variable input low voltage depending on loading percentage (up to -36%)
- Short Circuit, Overload, Lightning and Surge Protection
- Paralellable Modules up to 8 units
- Intelligent redundancy management (n, n+1 and n+x)
- 256 Real Time Event Log with Detailed Parameters
- Static & Manual Bypass Operation
- Small Footprint and Easy Maintenance
- Data analyzing over user interface
- Advanced Communication Capabilities
- Remote monitoring and management software
- Perfect Generator Compatibility
- Programmable dry contacts

TM

Nominal power (WA) 10 15 20 30 40 60 80	Model	EST 3310X	EST 3315X		EST 3320X		EST 3330X	EST 3340X	EST 3360X		EST 338	юх
Tree Lovel On-June doubble conversation VP+3.11	Nominal power (kVA)	10 15 20 30 40 60								80		
Sinsardian Sin	General											
Injust Injus	Technology	Three Level On-Line double conversation VFI-111										
Input Inpu	Waveform											
Input Voltage 180, 400, 415 V 3Ph-N+PE Input (Protenting MS 000 octoor) 4.56 56 Hz Voltage Tolerance (KS00 loce) (-20% (Architecture	Stand Alone or Distributed Parallel up to 8 units										
Input Proper Park 14-565 Hz 1-2076 1-207	Input											
Violage Osterance (%10 load) (.38)% (+20)% Osterance (%10 load) (.38)% (+20)% (+20)% Osterance (%10 load) (.38)% (+20)% (+20)% Osterance (%10 load) (.38)% (+20)% (+20)% (+20)% Osterance (%10 load) (.38)% (+20)% (+20)% (+20)% (+20)% Osterance (%10 load) (.38)% (+20	Input voltage				380, 40	00, 4	415 V 3Ph	+N+PE				
Violage Tolerance (%40 loads)	Input frequency					4	5-65 Hz					
Injust Course Harmonic+*	Voltage Tolerance (%100 load)					(-20)% (+20)%					
Injust Current Harmonic ** S3K	Voltage Tolerance (%40 load)					(-36)% (+20)%					
Output Voltage Output Voltage Tolerance	Input Power Factor		>0,99									
Output Voltage Tolerance	Input Current Harmonic**						≤3%					
Output Notlage Tolerance +15% Overall Efficiency Up to 98;6% (Herit load) Cess Factor 3:1 Econnode Efficiency Up to 98,5%	Output											
Seption Sept	Output voltage				380, 40	00, 4	115 V 3Ph	+N+PE				
Section Strictor Strictor Stock Strictor Stock							+1%					
Econode Efficiency S0/60Hz +0.01 fire run in Adjustable from LCD Parel Trequency S0/60Hz +0.01 fire run in Adjustable from LCD Parel Trequency S0/60Hz +0.01 fire run in Adjustable from LCD Parel Trequency S0/60Hz +0.01 fire run in Adjustable from LCD Parel Trequency S0/60Hz +0.01 fire run in Adjustable from LCD Parel Trequency S0/60Hz +0.01 fire run in Adjustable from LCD Parel Trequency S0/60Hz +0.01 fire run in Adjustable from LCD Parel Trequency S0/60Hz +0.01 fire run in Adjustable from LCD Parel Trequency S0/60Hz +0.01 fire run in Adjustable run in Research Parel Trequency S0/60Hz +0.01 fire run in Research Parel Trequency S0/60Hz +	Overall Efficiency*5 (AC-AC)				Up 1	to 96	5% (Half lo	ad)				
Naminal Output Frequency	Crest Factor						3:1					
State Stat	Ecomode Efficiency					Up	to 98,5%					
## Space	Nominal Output Frequency				50/ 60Hz +0,01 fre	e rui	n (Adjustal	ole from LCD	Panel)			
Sypass Sulit in Automatic and Maintenance Bypass Sulit in Au	Output Power Factor				1.0	(0.9	/0.8 optio	nal)				,
Spring S	THD of Output Voltage						<2%				M	7
Value Val	Bypass										7	
Transfer Time	Bypass				Built in Automa	atic a	and Mainte	nance Bypas	S			
Settern Set	Voltage Tolerance						±10%				7	
Battery Type	Transfer Time											
Battery Type Battery Test Battery Test Battery Cange Time Communication LCD Display Communication Ports (Optional) Battery Temperature Sensor Contact Communication Communication Ports (Optional) Battery Temperature Sensor Contact Communication Communication Available Ferrigency Power Off (Epo) Charger Capacity 1.0 Model (max) 0.9 0.8 Model (max) 1.0 Model (max) 1.0 Model (max) 1.0 Model (with charge card option – max) 2.0 9.0.8 model (with charge card option – max) With Internal Battery 2.0 Poe 127 (7,986) 122 + 051 127 127 128 129 129 129 129 129 129 129 129 129 129	Overload Capability				150	0% le	oad 1 minu	ute				
Battery Type Battery Test Battery Test Battery Cange Time Communication LCD Display Communication Ports (Optional) Battery Temperature Sensor Contact Communication Communication Ports (Optional) Battery Temperature Sensor Contact Communication Communication Available Ferrigency Power Off (Epo) Charger Capacity 1.0 Model (max) 0.9 0.8 Model (max) 1.0 Model (max) 1.0 Model (max) 1.0 Model (with charge card option – max) 2.0 9.0.8 model (with charge card option – max) With Internal Battery 2.0 Poe 127 (7,986) 122 + 051 127 127 128 129 129 129 129 129 129 129 129 129 129	Battery											
Battery Test Battery Charge Time Communication LCD Display Communication Ports (Optional) Battery Temperature Sensor Contact Emergency Power Off (Epo) Available Charger Capacity 1.0 Model (max) 0.9 .0.8 Model (with charge card option — max) Battery Temperature External Cabinet with 13A Charger Option External Cabinet with 13A Charger Option Battery Temperature Battery Temperature Battery Temperature Battery Temperature Galvanic Isolation Transportmer, Remote Monitoris panel Galvanic Isolation Transportmer, Remote Monitoris panel Table					VRLA-AG	M /	GEL / NiCo	d / Li-ion				
Settery Charge Time												
Communication Cipsipaly Communication Ports (Optional) RS485, Gerset, SNMP, GSM Modem, Relay Contacts, Input Contacts, Modbus and USB Stery Temperature Sensor Contact Available Stery Temperature Sensor Contact Stery Temperature Sensor S												
CDD Display R5485, Genset, SNMP, GSM Modem, Relay Contacts, Input Contacts, Modbus and USB Statery Pemperature Sensor Contact Substitution Ports (Optional) R5485, Genset, SNMP, GSM Modem, Relay Contacts, Input Contacts, Modbus and USB Substitution Ports (Optional) Substi												
Seatery Temperature Sensor Contact Sensor Se					Graphical I	cd s	creen. Led	bar status				
Available Sentery Temperature Sensor Contact Sensor												
Emergency Power Off (Epo) Series (Optional) Selvanic Isolation Transformer, Remote Monitoring Panel Selvanic Isolation Transformer, Remote Monitoring Panel Isolation Transformer, Table Transformer, Table Transformer, Table Tr						/			,			
Calesories (Optional) Cale	Contact					A			•			
Charger Capacity					Salvanic Isolation Tra	nefo		ote Monitorir	ng Panel			
1.0 Model (max) 1/4A 4A/ 13A 0.9, 0.8 Model (max) 1/4A 4A 13A 13A Battery Quantity With Internal Battery 20 pcs 12V 7/98h 80 ** 2 p					adivariic isolation ma	11510	illei, Keil	ote Monitorn	ig ratiet			
0.9, 0.8 Model (max)							121					
0.9, 0.8 model (with charge card option − max) Mattery Quantity 20 pcs 12V 7/9kh 32 + pcs 12V 32 pcs 12V 7/9kh 60 + pcs 12V 7/9kh 60 + pcs 12V 7/9kh 60 + pcs 12V 7/9kh 60 + pcs 12V 7/9kh 60 + pcs 12V 7/9kh 60 + pcs 12V 18kh 60 + pcs 12V		1/10			44		ISA			1:	λ .	
## Desired Properties Physical Physical	· · · · · · · · · · · · · · · · · · ·	1/48			44	7				10	DA .	
With Internal Battery 20 pcs 12V 7/9kb 32° pcs 12V 7/9kb 20° 7/9kb 32° ** pcs 12V 7/9kb 60°* 20° 12V 7/9kb 60°* 20° 12V 12kb 60°* 20°	option – max)	4A/13A					13	ВА				
With Internal Battery 20 pcs 12V 798h 32° pcs 12V 798h 60°3 pcs 12V 798h 60°3 pcs 12V 188h 60°4 p	Battery Quantity					_		2v20** post 2V	T			
Option 30-40 pcs (Default 30 pcs) External Cabinet with 13A Charger Option 30-46 pcs Physical Dimensions H x W x D (mm) 800 x 300 x 700 990 x 300 x 850 1200 x 430 x950 1200 x 430 x950 1200 x 430 x950 Note Weight (kg) 48 51 65 71 90 115 120 x 430	With Internal Battery	20 pcs 12V 7/9Ah 32* 7/9Ah	pcs 12V 32 p	cs 12V 9Ah	32** pcs 12V 7/9Ah 60*3 pcs 12V 7/9Ah	2	2x30 pcs 12V 7/9Ah	7/9Ah 40*3 pcs 12V 18Ah				
Option 30-46 pcs Physical Dimensions H x W x D (mm) 800 x 300 x 700 990 x 300 x 850 1200 x 430 x950 1200 x 430 x950 Net Weight (kg) 48 51 65 71 90 115 125 135 140 Environment Operating temperature (°C) 0°C - 40°C 50°C + 40°C 50°C	5				30-40	pcs	(Default 3	0 pcs)				
Dimensions H x W x D (mm) 800 x 300 x 700 990 x 300 x 850 1200 x 430 x950 1200 x 430 x950 Net Weight (kg) 48 51 65 71 90 115 125 135 140 Environment Operating temperature (°C) O°C - 40°C Storage Temperature Proposed Temp. To Extend Battery Life Life Station Humidity (%) < 95% not condensing						30)-46 pcs					
Net Weight (kg) 48 51 65 71 90 115 125 135 140 Environment Operating temperature (°C) 0°C - 40°C -15°C/+ 55°C -15°	Physical											
Environment Operating temperature (°C) 0°C - 40°C Storage Temperature -15°C/+ 55°C Proposed Temp. To Extend Battery Life 20 - 25°C Relative Humidity (%) < 95% not condensing	Dimensions H x W x D (mm)	800 x 30	00 x 700		990 x 300 x 8	350		1200 x 4	430 x950	12	200 x 430	x950
Operating temperature (°C) 0 °C - 40 °C Storage Temperature -15 °C/+ 55 °C Proposed Temp. To Extend Battery Life 20 - 25 °C Relative Humidity (%) < 95% not condensing Noise (at 1 meter) <55 dBA <58 dBA <60 dBA Protection Class IP 20 Standard	Net Weight (kg)	48	51		65		71	90	115	125	135	140
Storage Temperature15 °C/+ 55 °C Proposed Temp. To Extend Battery Life 20 - 25 °C Relative Humidity (%) Noise (at 1 meter) Protection Class Standard 15 °C/+ 55 °C 20 - 25 °C	Environment											
Proposed Temp. To Extend Battery Life 20 - 25 °C Relative Humidity (%) < 95% not condensing	Operating temperature (°C)					0°0	C - 40°C					
Proposed Temp. To Extend Battery Life 20 - 25 °C Relative Humidity (%) < 95% not condensing												
Relative Humidity (%) < 95% not condensing Noise (at 1 meter) <55 dBA	<u> </u>	20 - 25°C										
Noise (at 1 meter) <55 dBA <58 dBA <60 dBA Protection Class IP 20 Standard						20	- ∠5 °C					
Protection Class IP 20 Standard	Relative Humidity (%)				< 95	5% n	ot condens	sing				
Standard	Noise (at 1 meter)		<55 dBA					<58 dBA			<60	dBA
	Protection Class						IP 20					
Reference Product Standards EN 62040-1-1 (Safety), EN 62040-2 (EMC), EN 62040-3 (Performance)	Standard											
	Reference Product Standards		El	۱ 620 م	40-1-1 (Safety), EN 6	204	0-2 (EMC)	EN 62040-3	(Performano	e)		

Model	EST33100X	EST33120X	EST33160X	EST33200X	EST33250X	EST33300X	EST33400X	EST33500X			
Nominal power (kVA)	100	120	160	200	250	300	400	500			
General			'								
Technology	Three Level On-Line double conversation VFI-111										
Waveform		Sinusoidal									
Architecture		Stand Alone or Distributed Parallel up to 8 units									
Input					·						
Input voltage		380, 400, 415 V 3Ph+N+PE									
Input frequency		45-65 Hz									
Voltage Tolerance (%100 load)	(-20)% (+20)%										
Voltage Tolerance (%40 load)		(-36)% (+20)%									
Input Power Factor	>0,99										
Input Current Harmonic**											
Output											
Output voltage				380, 400, 41	5 V 3Ph+N+PE						
Output Voltage Tolerance		+1%									
Overall Efficiency* (AC-AC)		Up to 96% (Half load)									
Crest Factor		3:1									
Ecomode Efficiency		Up to 98,5%									
Nominal Output Frequency		Up to 98,5% 50/ 60Hz +0,01 free run (Adjustable from LCD Panel)									
Output Power Factor			00/ 00112	-	-	LOD T driety	TM				
THD of Output Voltage		1.0 (0.9/0.8 optional) <2%									
Batteries				·•	-70			7			
Battery Type	T .			VRLA-AGM / GE	L / NiCd / Li-ion			7			
Battery Test					or Manual						
Battery Charge Time					n-8h						
Bypass				101	1-011						
Bypass			Ruilt i	n Automatic and	l Maintenance F	Rynass					
Voltage Tolerance			Ballet		0%	уризэ					
Transfer Time					ms						
Overload Capability					d 1 minute						
Communication				13070 1000	a i minute						
LCD Display			G	aphical lcd scre	en Led har etat	TIE .					
Communication Ports (Optional)		PS/185 Ger	_				hue and USB				
Battery Temperature Sensor		RS485, Genset, SNMP, GSM Modem, Relay Contacts, Input Contacts, Modbus and USB									
Contact	Available										
Emergency Power Off (Epo)		Yes									
Accessories (Optional)			Galvanic Isol	ation Transform	er, Remote Mor	nitoring Panel					
Physical											
Dimensions H x W x D (mm)			1300x 540 x 96	0		1	900 x 1250 x 7	75			
Net Weight (kg)	205	210	220	260	292	635	680	890			
Ambient conditions								1			
Operating temperature (°C)				0°C -	40°C						
Storage Temperature		0°C - 40°C -15°C/+ 55°C									
Proposed Temp. To Extend											
Battery Life				20 -	25°C						
Relative Humidity (%)				< 95% not	condensing						
Noise (at 1 meter)		<62 dBA				<6 5dBA					
Protection Class				IP	20						
Compliance											
Reference Product Standards		EN (62040-1-1 (Safe	ety), EN 62040-2	2 (EMC), EN 620)40-3 (Performa	ance)				

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