

# Infra Guard

Rack Sensor System



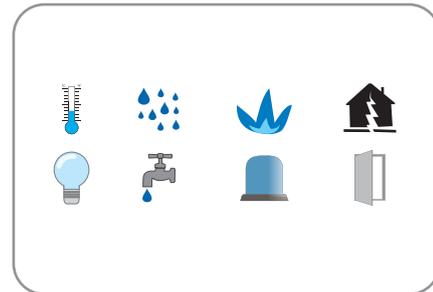
For mission critical data centers, the ability to remotely manage the IT rack environment is vital. Environmental issues to your racks, including high temperature & humidity, smoke, water leakage, physical threats, unauthorized door access, power and cooling inefficiencies can have a significant impact on the performance of the operations.

**InfraGuard** provides an environmental monitoring solution to secure high levels of data center operational stability and flexibility. It also gives a free integrated platform for today's data centers. User can remotely manage the environment and conditions in racks via IP. This can help reducing manpower and travel costs by negating the need for staff to actually be at the rack location.

## Key Benefits

### >>> Variety of Sensors / Peripherals

Getting instant notification of various environmental fluctuations, InfraGuard offers a variety of environmental sensors.



### >>> Integrated PDUs / Fan Units

In order to enhance the functionality, the InfraGuard remote management supports the integration to intelligent Switched / Monitored PDUs and Fan Units. Up to 1920 x kWh PDU and same quantity of Fan Units can be remotely managed by the management software.



### >>> Scalable Flexibility

Multi ports for some critical sensors / peripherals / devices on control box are available. Users can apply "One Box One Rack" in order to achieve the optimum environmental management, or "One Box Two Racks" for cost efficient setup.

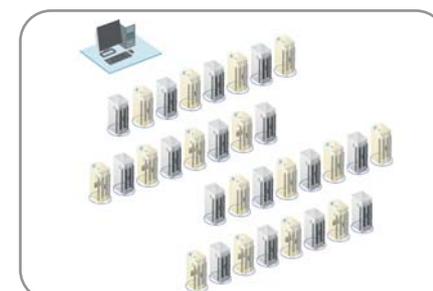


### >>> High Density of Environmental Management

The free management software IGM-03 supports up to 30 x IP.

Up to 16 x InfraGuard control box can be connected by daisy chain and remotely access by one single IP.

Under "One Box Two Racks" scenario, environmental remote management up to 960 racks can be achieved.



Control box consolidates the integrated sensors and devices.

Up to 16 x Control box can be connected by daisy chain for IP remote access.

InfraGuard offers two control box models with same integrated sensor and device I/O.



### EC Box 300M - Master control box ( 1st Level )



### EC Box 300 - Slave control box ( 2nd - 16th Level )

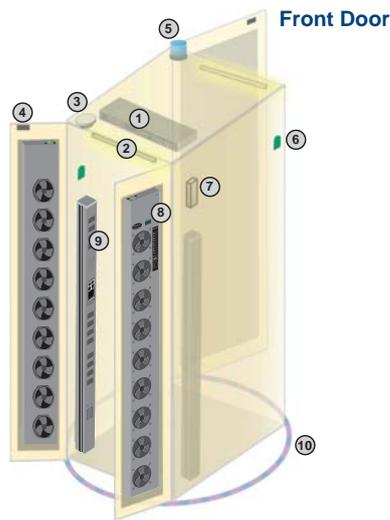


	EC-300M ( Master Box )	EC-300 ( Slave Box )
Daisy Chain	1st Level	2nd - 16th Level via Master Box
SNMP	✓	
LAN Port	✓	✗
Daisy Chain Port - LINK	✗	✓
Daisy Chain Port - OUT	✓	✓
Dual Power Input Option	✓	✓
Temperature LED	✓	✓
Temp-Humid Sensor	2	2
Smoke / Shock Sensor	2	2
Water Sensor	2	2
Door Sensor	4	4
LED Light Bar	2	2
LED Flashing Beacon	1	1
Alarm Board	1	1
Integrated PDU	4 ( daisy chain )	4 ( daisy chain )
Integrated Fan Unit	4 ( daisy chain )	4 ( daisy chain )
Product Dimension ( W x D x H )	400 x 135 x 39.7 mm / 15.7 x 5.3 x 1.6 inch	
Packing Dimension ( W x D x H )	557 x 367 x 98 mm / 21.9 x 14.4 x 3.9 inch	
Net Weight	1.06 kgs / 2.3 lbs	
Gross Weight	2.2 kgs / 4.8 lbs	
Power Consumption	Auto-sensing 100 to 240VAC, 50 / 60Hz, Max. 48 Watt	
Operating Temperature	0 to 55°C Degree	
Storage Temperature	-5 to 60°C Degree	
Relative Humidity	5~90%, non-condensing	
Mounting	1U Rackmount	
Safety Regulatory	FCC & CE certified	
Environmental	RoHS2 & Reach compliant	

In One Box - One Rack connection, complete range of integrated sensors and devices can be applied to the rack. Multiple sensors / integrated devices can be applied to one single rack in order to achieve the optimum environmental monitoring conditions.



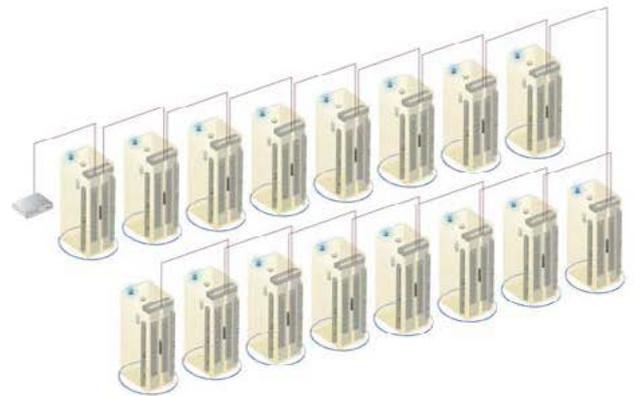
## Suggested Sensors / Devices Allocation



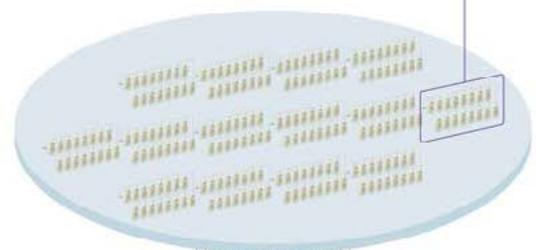
Item	Rack
① EC Box	1
② LED Light Bar	2
③ Smoke Sensor	1
④ Door Sensor	2
⑤ Flashing LED Beacon	1
⑥ Temp. & Humid. Sensor	2
⑦ Shock Sensor	1
⑧ Fan Unit	2
⑨ PDU	2
⑩ Water Sensor	1

## Rack Level Connection

- EC 300M as the 1st level master EC box
- The EC box can be cascaded up to 16 levels
- Only 1 x IP for 16 x EC box remote access

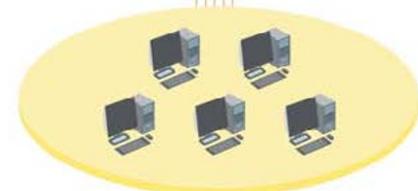


- Daisy chain by Cat5/6 cable
- Max. distance between 2 EC box is 20M
- Max. distance in a daisy chain group up to 300M



IGM-03 supports 30 x IP address ;  
 480 x EC box ;  
 1920 x Integrated kWh PDU ;  
 1920 x Integrated Cooling Fan Unit ;  
 Thousands of Environmental Sensors

Remote access by  
 web-based GUI  
 from anywhere  
 around the world

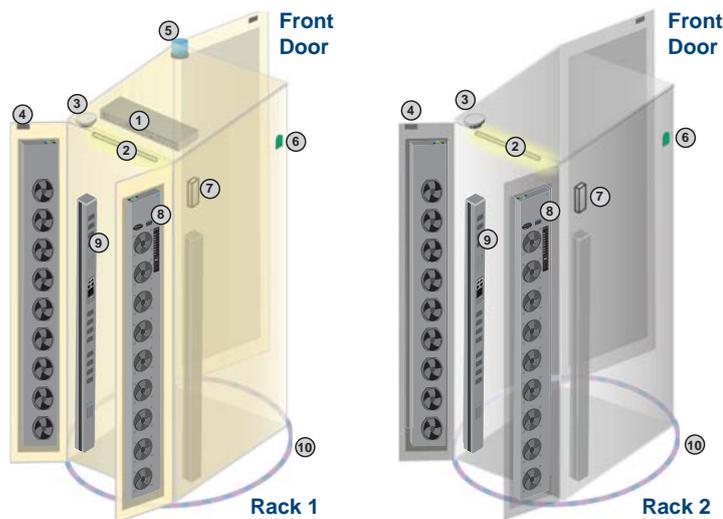


5 x concurrent user for remote management

EC Box provides multi-ports for some critical sensors / devices. It means that enables user to share the control box and some duplicated sensors / devices to two racks. A cost efficient environmental management can be achieved.



## Suggested Sensors / Devices Allocation

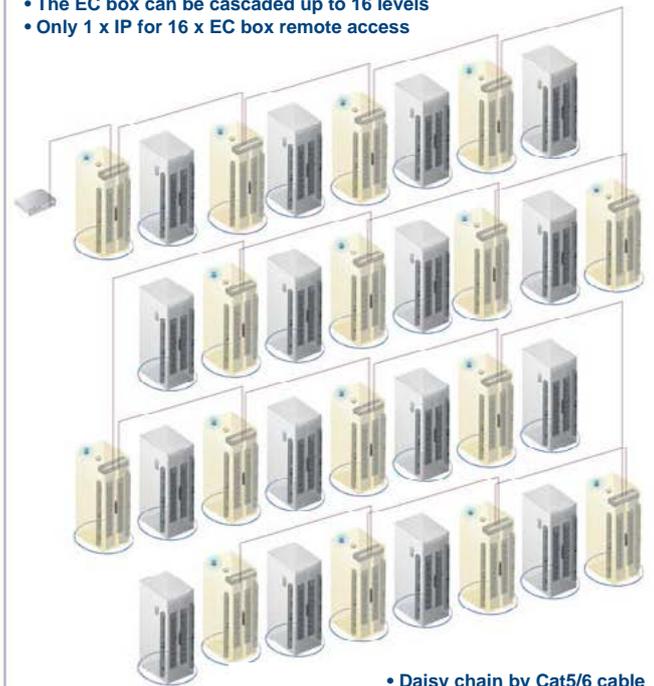


Item	Rack 1	Rack 2
① EC Box	1	-
② LED Light Bar	1	1
③ Smoke Sensor	1 *	1 *
④ Door Sensor	2	2
⑤ Flashing LED Beacon	1	-
⑥ Temp. & Humid. Sensor	1	1
⑦ Shock Sensor	1 *	1 *
⑧ Fan Unit	2	2
⑨ PDU	2	2
⑩ Water Sensor	1	1

\* either smoke sensor or shock sensor

## Rack Level Connection

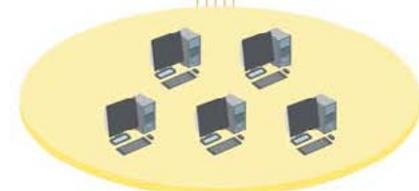
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web-based GUI  
from anywhere  
around the world



5 x concurrent user for remote management

To maintain an optimum operation conditions in data center, getting instant notification of various environmental fluctuations is vital.

**InfraGuard** offers a wide range of sensors for a complete environmental monitoring, including temperature, humidity, smoke, shock, water leakage and rack access.

Peripherals such as LED light bar and flashing LED beacon, are designed for use with the sensors in order to allow a local environmental monitoring.



### Temp. + Humid. Sensor



- One sensor for temperature & humidity
- Low profile and light weight design with a magnetic base for easy affixing to rack

**Part no. :**  
**IG-TH01-2M** with 2M cord  
**IG-TH01-4M** with 4M cord

### Temp. Sensor



- Detection for temperature
- Low profile and light weight design with a magnetic base for easy affixing to rack

**Part no. :**  
**IG-T01-2M** with 2M cord  
**IG-T01-4M** with 4M cord

### Water Sensor



- Fluid leakage detection
- 5M rope round the rack bottom to detect any fluid flowing to the rack area
- IP65 cable joint connectors provided

**Part no. :**  
**IG-W01-3M** with 3M cord

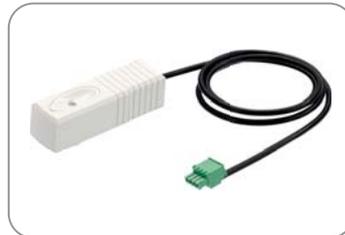
### Smoke Sensor



- Safely operated smoke detection

**Part no. :**  
**IG-S01-1M** with 1M cord  
**IG-S01-3M** with 3M cord

### Shock Sensor



- Alert the physical vibration on the rack

**Part no. :**  
**IG-V01-1M** with 1M cord  
**IG-V01-3M** with 3M cord

### LED Beacon



- Highly visible for alerting user to alarm status

**Part no. :**  
**IG-FB03-1M** with 1M cord  
**IG-FB03-3M** with 3M cord

### Inductive Door Sensor



- Light weight, mini size & adhesive
- No custom cutting required on doors
- Easy for existing rack retrofit or integration to new rack

**Part no. :**  
**IG-DSI-2M** with 2M cord  
**IG-DSI-4M** with 4M cord

### Mechanical Door Sensor



- Low cost
- Precise
- Cost efficient integration to new rack
- Custom cutting required on door

**Part no. :**  
**IG-DSW-2M** with 2M cord  
**IG-DSW-4M** with 4M cord

### LED Light Bar



- Auto ON / OFF by door sensor detection
- Manual ON / OFF by software remote
- Magnetic base for easy affixing to rack
- Dimension ( W x D x H ) : 20 x 300 x 12 mm

**Part no. :**  
**CLB-IX-002** with 2M cord  
**CLB-IX-003** with 3M cord

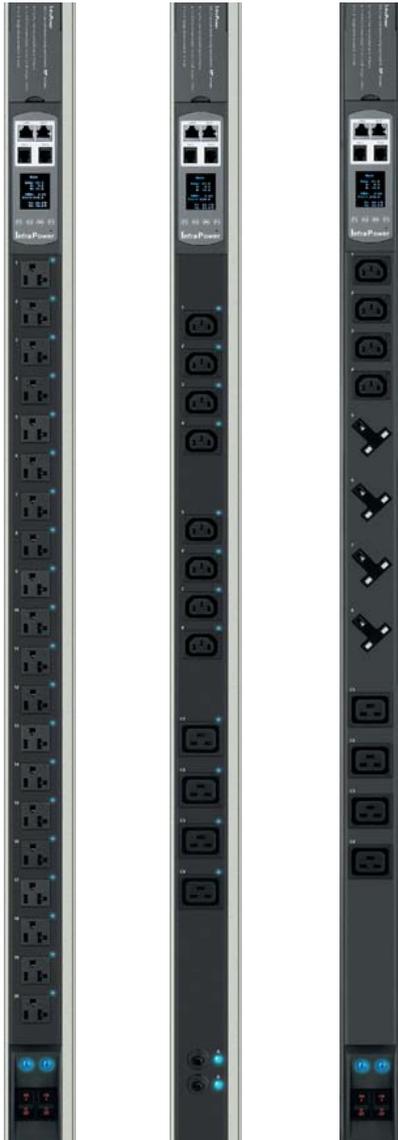
With today's increasing demand for power management solution, a complete suite of rack PDU models is required specifically to help data center IT managers meet their rapidly escalating power requirements.

**InfraPower®** intelligent PDU provides a power management solution from PDU Level to Outlet Level kWh monitoring. Switched models are also available for remote outlet switching on / off. Our PDUs are also offered in many sizes and configurations depending on voltage, current, outlet number and type of connections.



cUL certified for specific configurations

Details



InfraPower® PDU series for InfraGuard	WSi Switched	WS Switched	W Monitored
Outlet Measurement	✓		
Outlet Switch ON / OFF	✓	✓	
kWh Measurement	✓	✓	✓
Daisy-Chained PDU x 4 via EC Box	✓	✓	✓
Sensor Port x 2 ( Temp. + Humid )	✓	✓	✓
Hot-Swap Meter	✓	✓	✓
1.8" Color LCD Display	✓	✓	✓
SNMP Hardware	✓	✓	✓
Management Software	✓	✓	✓
Aggregate Amp Measurement	✓	✓	✓
Local Ammeter	✓	✓	✓
Hydraulic Type MCB Support	✓	✓	✓
Individually Fused Support	✓	✓	✓
Operating Temperature Range -5°C to 60°C	✓	✓	✓
Vertical & Rackmount PDU	✓	✓	✓
Multiple Outlet Configuration	✓	✓	✓
Tool-less Mounting	✓	✓	✓
Voltage : 110V / 208V / 230V	✓	✓	✓
Fuse / Circuit Breaker ( MCB ) Option	✓	✓	✓
Surge Protector Option	✓	✓	✓
EMI Filter Option	✓	✓	✓

Rackmount PDU



Field-Replaceable Meter

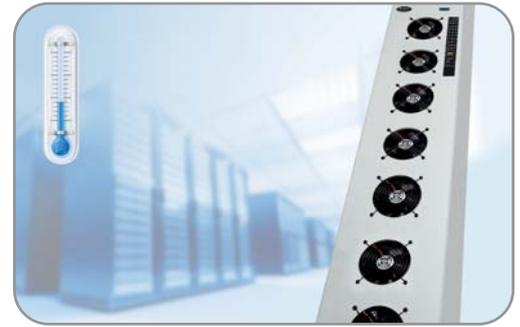


Sensor Port x 2 ( Temp. + Humid. )



The biggest challenge in today's data center is thermal management. Cooling the equipment in an enclosed rack has always been important.

**InfraCool** intelligent fan units are designed to have both local & remote management capabilities. Front panel LED and buttons allow the local monitoring and individual fan kit switch on / off. Moreover, fan speed can be adjusted automatically according to the temperature detected by the sensor. It provides adequate airflow and minimizes the operation cost for data center energy consumption.



[Details](#)



InfraCool	Door Mount Fan Panel		1U Rackmount Fan Tray		
Height	33U		1U		
Fan Number	6	9	3	6	9
Total CFM	648	972	324	648	972
Airflow	<p><i>Front Door Cool Air In</i></p> <p><i>Rear Door Hot Air Out</i></p>				
Temp. Port	✓		✓		
Temp. Sensor	✓		✓		
Control Panel :	✓		✓		
• Individual Fan On / Off	✓		✓		
• Alarm Temp. Setting	✓		✓		
• Unit CFM ( fan speed ) Setting	✓		✓		
• Temperature LED	✓		✓		
• Fan Status LED	✓		✓		
• CFM Status LED	✓		✓		

### Rackmount Fan Trays



### Auto Fan Speed Control



### Temp. Sensor Port x 1



InfraGuard Manager IGM-03 is a FREE environmental sensor management software to monitor up to 30 Master IP Groups remotely ( max. 16 EC box levels in each Master IP Group ), total 480 EC boxes. Each EC box can connect a variety of sensors to provide an environmental monitoring solution to secure high levels of data center operational stability and flexibility.

To enhance the functionality, up to 1920 x kWh PDU / Remote Fan Unit can be monitored through IGM-03 GUI as well. 5 concurrent user access are bundled for achieving the demand of multi-user / multi-tasking in nowadays' time-sharing data center operation.

Details



Master IP groups: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 [Scan] [Stop]

**EC Box Overview**  
 Master IP\_group no.: 01  
 Master Box name: default\_box\_name  
 Master Box IP address: 192.168.1.81

Box Level	Location	Setting	Sensor								PDU				Fan Unit				Door									
			S1	S2	S3	S4	S5	S6	S7	S8	P1	P2	P3	P4	F1	F2	F3	F4	D1	D2	D3	D4						
01	Rack_001	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
02	Rack_002	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
03	Rack_003	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
04	Rack_004	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
05	Rack_005	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
06	Rack_006	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
07	Rack_007	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
08	Rack_008	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
09	Rack_009	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10	Rack_010	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11	Rack_011	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
12	Rack_012	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13	Rack_013	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
14	Rack_014	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15	Rack_015	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16	Rack_016	⊙	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Auto data refresh:  [Refresh Icon] [Stop]

\* Press F11 to enlarge or diminish the screen

S1 : T / TH 1      S5 : Water 1  
 S2 : T / TH 2      S6 : Water 2  
 S3 : Smoke / Shock 1      S7 : Lamp 1  
 S4 : Smoke / Shock 2      S8 : Lamp 2

[Disabled Icon] : Disabled  
 [Connected Icon] : Connected  
 [Disconnected Icon] : Disconnected  
 [Alarm Icon] : Alarm  
 [Searching Icon] : Searching

Features	IGM-03
<b>Capacity</b>	
Master IP Group ( just 1 for 16 EC box levels )	30
EC Box Number	480
Concurrent User	5
<b>Device Overview</b>	
Status of Sensor, PDU, Fan Unit & Door	✓
Device Setting / Audio and Visual Output Setting	✓
<b>Sensor Peripheral</b>	
Status Monitoring	✓
Location of Sensor / Peripheral	✓
Temp-Humid Alarm Setting / Rising Alert Threshold Setting	✓
<b>PDU</b>	
Energy Consumption kWh / Amp Monitoring	✓
Outlet Level Measurement	✓
PDU Outlet Schedule	✓
Outlet Switch ON / OFF	✓
Amp Alarm Threshold Setting	✓
Amp Rising / Low Alert Threshold Setting	✓
Temp-Humid / Circuit Breaker Monitoring	✓
<b>Fan Unit</b>	
CFM & Temp. Monitoring	✓
Unit CFM ( fan speed ) Setting	✓
Auto CFM Control Setting	✓
Individual Fan Kit ON / OFF	✓
Fan Unit ON / OFF	✓
<b>Event Log / Report</b>	
System & Device Event	✓
Device Log / Reporting	✓



**Control Box**

<b>EC-300M</b>	Master control box - LAN port x 1 for remote over IP - Built-in SNMP - Daisy chain : 1st level
<b>EC-300</b>	Slave control box - Daisy chain : 2nd - 16th level
<b>ECP-4A</b>	Dual power input option, 4A@12V

**Management Software**

<b>IGM-03</b>	InfraGuard management software - Max. 30 master IP groups ( just 1 for 16 EC box levels ) - Max. 480 EC boxes - Max. 5 concurrent users - Package including CD key  * Free of charge
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**Sensor / Peripheral**

<b>IG-TH01-2M</b>	Temp. + Humid. sensor	w/ 2m cord
<b>IG-TH01-4M</b>	Temp. + Humid. sensor	w/ 4m cord
<b>IG-T01-2M</b>	Temp. sensor	w/ 2m cord
<b>IG-T01-4M</b>	Temp. sensor	w/ 4m cord
<b>IG-S01-1M</b>	Smoke sensor	w/ 1m cord
<b>IG-S01-3M</b>	Smoke sensor	w/ 3m cord
<b>IG-V01-1M</b>	Shock sensor	w/ 1m cord
<b>IG-V01-3M</b>	Shock sensor	w/ 3m cord
<b>IG-W01-3M</b>	Water sensor	w/ 3m Cat6 cable
<b>IG-DSI-2M</b>	Inductive door sensor, pair	w/ 2m cord
<b>IG-DSI-4M</b>	Inductive door sensor, pair	w/ 4m cord
<b>IG-DSW-2M</b>	Mechanical door sensor, pair	w/ 2m cord
<b>IG-DSW-4M</b>	Mechanical door sensor, pair	w/ 4m cord
<b>CLB-IX-002</b>	LED light bar	w/ 2m cord
<b>CLB-IX-003</b>	LED light bar	w/ 3m cord
<b>IG-FB03-1M</b>	LED beacon	w/ 1m cord
<b>IG-FB03-3M</b>	LED beacon	w/ 3m cord

**PDU**

**InfraPower Intelligent PDU :**

<b>WSi</b>	kWh switched PDU, outlet measurement
<b>WS</b>	kWh switched PDU
<b>W</b>	kWh monitored PDU

\* All PDUs above come with Temp. + Humid. sensor port x 2

Outlet :	Voltage :
US Nema	100-120VAC
IEC C13 / C19	200-250VAC / 208VAC
UK BS1363 + IEC	200-250VAC
GR Schuko + IEC	200-250VAC
FR French + IEC	200-250VAC

For details, please refer to <http://www.austin-hughes.com/infraguard/pdu-and-fan/pdu>

**Fan Unit**

**InfraCool Remote Fan Unit :**

<b>RF-33.6</b>	33U remote door mount fan panel w/ 6 fans
<b>RF-33.9</b>	33U remote door mount fan panel w/ 9 fans
<b>RF-1.3</b>	1U rackmount remote fan tray w/ 3 fans
<b>RF-1.6</b>	1U rackmount remote fan tray w/ 6 fans
<b>RF-1.9</b>	1U rackmount remote fan tray w/ 9 fans

\* All remote fan units above come with Temp. sensor x 1

For details, please refer to <http://www.austin-hughes.com/infraguard/pdu-and-fan/fan>

Founded in 1995, **Austin Hughes Electronics Ltd** is a design and manufacturing group that offers a broad range of solutions based around 19 inch rack mount technology. These solutions include InfraSolution remote access control and locking, InfraPower intelligent remote management power solutions, CyberView LCD Keyboard and KVM drawers & InfraCool intelligent remote cooling system.

**Austin Hughes** has ISO14001 and ISO9001 approved design, manufacturing, assembly and test facilities in Hong Kong and China. Austin Hughes supports a worldwide customer base, through its global locations in the Americas, EMEA and APAC and through its extensive authorized channel partner support network.

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