

PART I

PART I – Appendix

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PART I

1 Appendix A – Detailed Drawings

Note: The Detailed Drawings are presented in 11" x 17" print format
in a separate file.

PART I

2 Appendix B – Particular Specifications

PART I**2 Appendix B – Particular Specifications****Preface**

The materials described in the following particular specifications are to be used exclusively, subject to items 1.0 and 2.0 noted below.

1.0 Manufactured Materials

Strictly observe all manufacturers' instructions. Ensure that the manufacturers' instructions are available at the site. Incompatible materials shall not be mixed (for example, metric and imperial drainage systems). Where proprietary materials are specified on the drawing and the bills of quantities the phrase "or equal approved" shall be deemed to be included.

2.0 Alternative Materials

"Or equal approved" means that products other than those specified may be used provided that the Contractor satisfies the Architect as to their suitability and obtains his written approval. The Architect reserves the right to insist on the specified product if such approval is not given.

PART I

2 Appendix B – Particular Specifications

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- 1) Light Fixtures**
- 2) HVAC**
- 3) Fire Alarm System**
- 4) Suspended Ceilings**
- 5) Roof Drains**
- 6) Miscellaneous**

PART I

2 Appendix B – Particular Specifications

1) Light Fixtures

BRONX

Corner mounted LED



5 YR

IP54



Features:

- Robust steel, corner mounted LED solution
- Choice of two sizes to suit most applications
- White, grey or black body colour options
- Driver gear options of DALI, Emergency and Ready2Mains dimming available
- CRI: Ra>80
- Up to 66 lumens per Watt efficacy
- 50,000 hours lifetime (L70/B50)

Construction:

- Steel body finished in white (RAL 9016)
- Supplied with micro-linear frosted diffuser
- Supplied as standard with neutral white (4000K) LED

Options:

- HFR - High frequency analogue dimming
- HFD - Digital dimmable version
- HFSD - Dimmable microwave movement sensor
- M3 - 3 hours integrated emergency
- AST - Emergency self test
- WW - Warm white (3000K)
- B - Black (RAL 9005)
- Gy - Grey (RAL 9006)



BRONX

Corner mounted LED

Order Codes

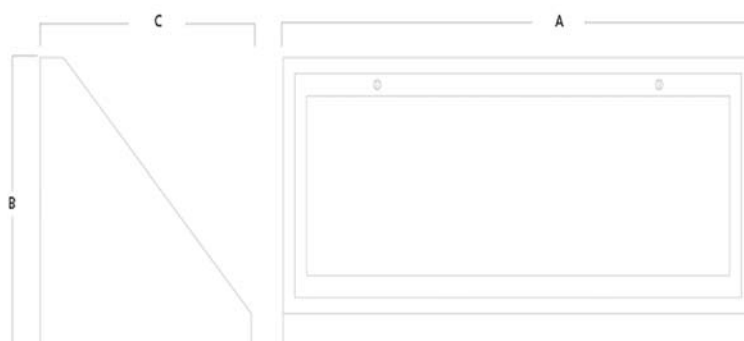
All dimensions are in millimetres

Order code	Description	Lumens (lm)	Total power (W)	Efficacy (lm/W)	Weight (kg)
BX42330NW	50W - 4000K	3300	50	66	14.2
BX52500NW	75W - 4000K	4900	75	65	16.8

Dimensions

All dimensions are in millimetres

Order code	A	B	C
BX42330NW	1260	205	205
BX52500NW	1530	205	205



Installation instructions:

Wall mounting via rear mounting holes

To specify:

Steel, corner mounted as per Tamlite BRONX range

Please Note: Order codes listed are for standard (non-emergency) versions only. For all other gear options, please contact Tamlite Lighting.



Tamlite Lighting

EXITBOX LED

Slim profile LED Exit box

Product Data Sheet

MPA-3 - TYPE 'E' FIXTURE



- Features:**
- Versatile exit box
 - High lumen output (115 lumens)
 - Low maintenance LED
 - Wide range of european format legends
 - integrated battery charge indicator
 - Custom made legends available to special order



- Construction:**
- Supplied with high output LEDs
 - Steel white painted body
 - Polycarbonate diffuser for use on escape routes
 - Quality Nickel Cadmium (NiCad) batteries
 - Designed for easy installation through 20mm cable entry or BESA box mounting



- To Specify / Order:** LED emergency exit box complete with standard legend panel (please specify) as per Tamlite 'EXITBOX LED' range

- Options:**
- EURO3Running man down arrow legend
 - EURO2Running man left arrow legend
 - EURO1Running man right arrow legend

MPA-3 - TYPE 'E' FIXTURE

Order Codes

All dimensions are in millimetres

Order Code	Availability	Lamp	Lumen output	Operating mode	Dim A	Dim B	Dim C
EBLED8NM3		LED array	115 lm	Non-maintained	360	180	88
EBLED8M3		LED array	115 lm	Maintained	360	180	88

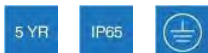
Please Note: Order codes listed are for standard (non-emergency) versions only. For all other gear options, please contact Tamlite Lighting.



Tamlite Lighting Technical Department.
Tel: 01952 292441 Fax: 01952 292155
e-mail: technical@tamlite.co.uk

METRO

Exterior LED bulkhead



Features:

Modern LED bulkhead

High efficiency LED package ideal for perimeter lighting

Integral emergency version also available

Ideal for through conduit installation

CRI: Ra>80

Up to 70 lumens per Watt efficacy

50,000 hours lifetime (L70/B50)

Construction:

Die-cast aluminium body finished in black (RAL 9011)

Polycarbonate front cover and opal diffuser

Integral driver

Supplied as standard with neutral white (4000K) LED

Options:

PC - Photocell

HFS - Microwave movement sensor

HFSD - Dimmable microwave movement sensor

M3 - 3 hours integrated emergency

METRO

Exterior LED bulkhead

Order Codes

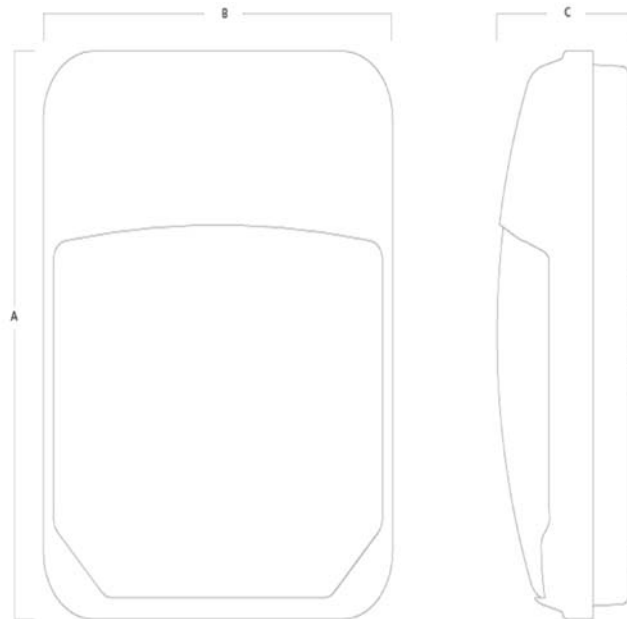
All dimensions are in millimetres

Order code	Description	Lumens (lm)	Total power (W)	Efficacy (lm/W)	Weight (kg)
MET160NW	23W - 4000K	1600	23	70	1.12

Dimensions

All dimensions are in millimetres

Order code	A	B	C
MET160NW	307	257	95



Installation instructions:

Fixed via 2 rear mounting holes and wired to 3 pole connection block via rear cable entry

To specify:

LED bulkhead as per Tamlite METRO range

Please Note: Order codes listed are for standard (non-emergency) versions only. For all other gear options, please contact Tamlite Lighting.

PART I

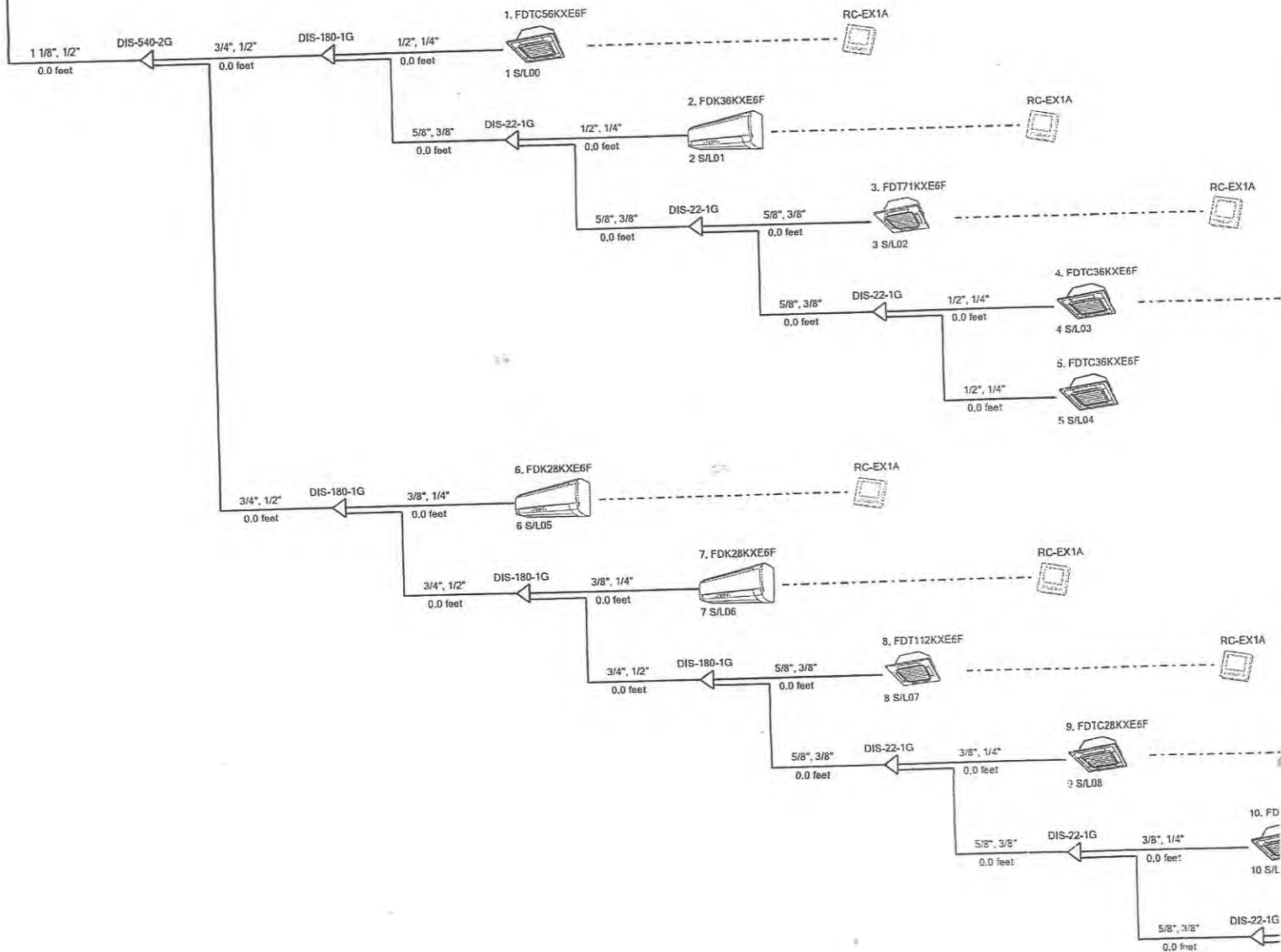
2 Appendix B – Particular Specifications

2) HVAC



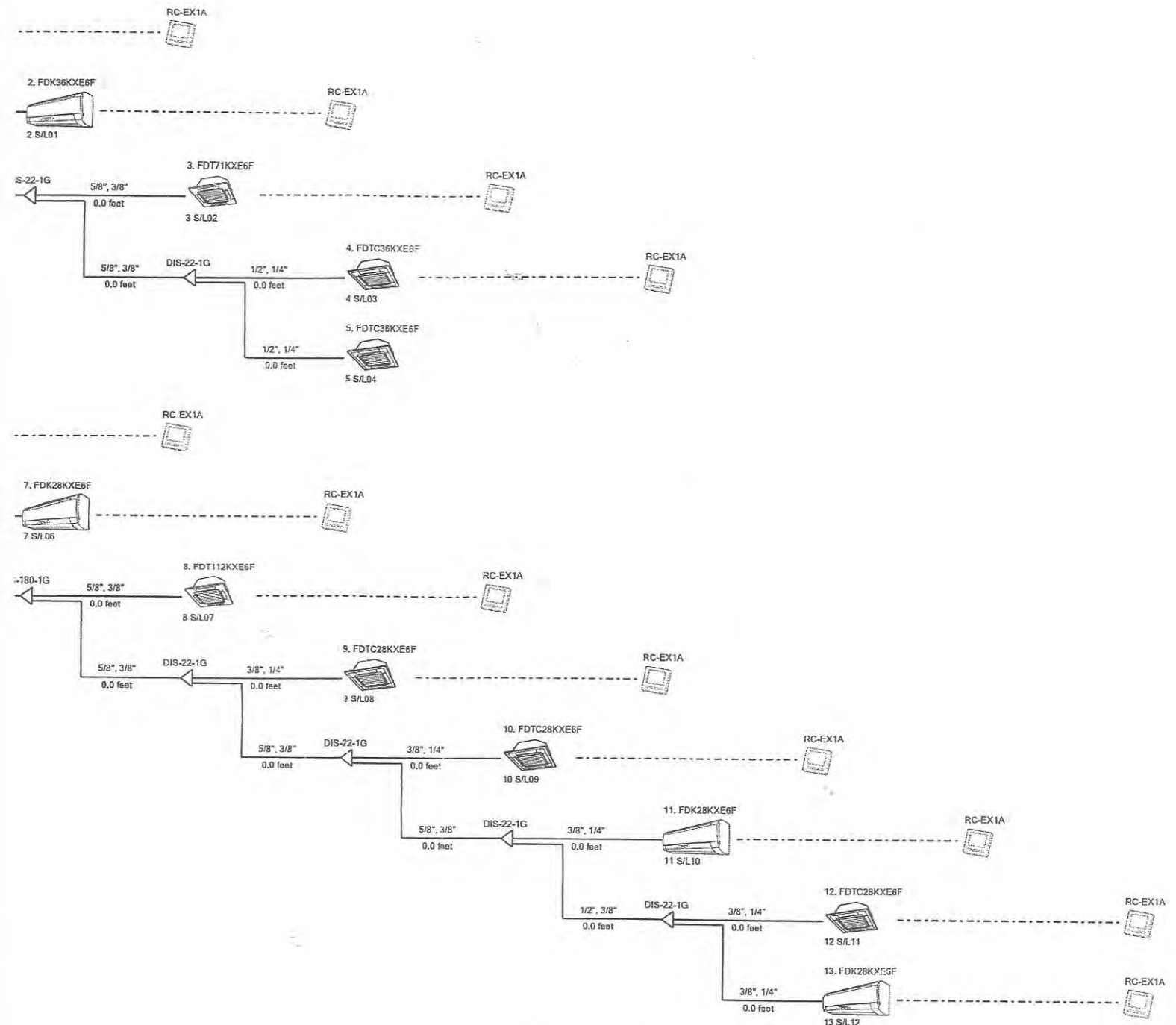
MPA-3 VRF SCHEMATIC LAYOUT-PART 1

Proj
Proj
Sys
Des
Tot
Tot
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Div
Ad



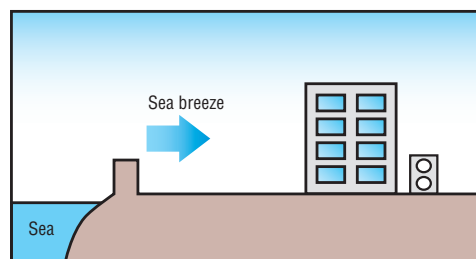
Project : Montsrrat Port Authority
 Project Ref : M--0-1-1 / M-02
 System : Default System 0
 Design Conditions: 73.4°F DB, 64.4°F WB / 95.0°F DB
 Total Pipe Run : 0.0 feet of 3281.0 feet
 Total Connected Indoor Units : 13
 Total Actual Cooling : 170660 BTU/h / 109810 BTU/h
 Total Required Cooling : 0 BTU/h / 0 BTU/h
 Connected Capacity : 543 / 728
 Diversity Factor : 0%
 Additional Refrigerant : 13.0 lb

MPA-3 VRF SCHEMATIC LAYOUT-PART 1



KX6 Corrosion Protection Treatment series 4~48HP (11.2kW~136.0kW)

Corrosion Protection Treatment series are available with special coating applied for not only sheet metals but also small parts in order to prevent salt corrosion caused by sea breeze in area along coast line (Within approximately 500m from coast line).



Model No.	Nominal Cooling Capacity
FDCS112KXEN6	11.2kW (220V)
FDCS140KXEN6	14.0kW (220V)
FDCS155KXEN6	15.5kW (220V)
FDCS224KXE6M	22.4kW (220V)
FDCS280KXE6M	28.0kW (220V)
FDCS335KXE6M	33.5kW (220V)
FDCS335KXE6M-K	33.5kW (220V)
FDCS400KXE6M	40.0kW (220V)
FDCS450KXE6M	45.0kW (220V)
FDCS504KXE6M	50.4kW (220V)
FDCS560KXE6M	56.0kW (220V)
FDCS560KXE6M-K	56.0kW (220V)
FDCS615KXE6M	61.5kW (220V)
FDCS680KXE6M	68.0kW (220V)

Model No.	Nominal Cooling Capacity
FDCS112KXES6	11.2kW (380V)
FDCS140KXES6	14.0kW (380V)
FDCS155KXES6	15.5kW (380V)
FDCS224KXE6G	22.4kW (380V)
FDCS280KXE6G	28.0kW (380V)
FDCS335KXE6G	33.5kW (380V)

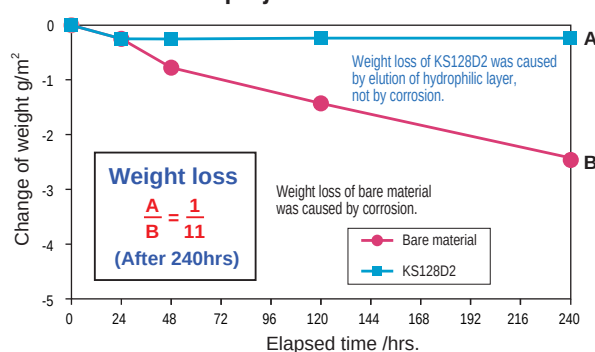
MPA-3-VRF OUTDOOR UNIT

- Combination systems: 26~48HP (73.5kW~136.0kW) are the same as that of the standard KX6 series showed on previous pages.
- Specifications and Dimensions are the same as that of the standard KX6 series showed on previous pages.
- Non-CE Marking models.

Corrosion resistance performance of high anticorrosion fin

Comparison of weight loss by corrosion

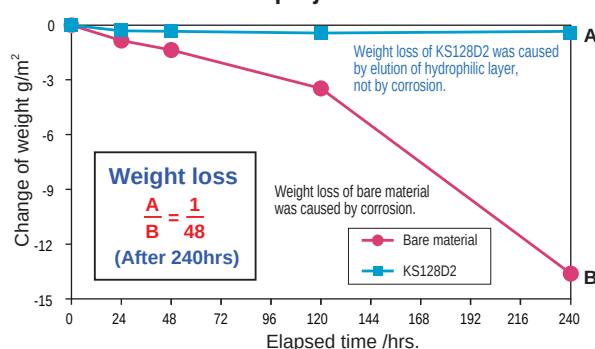
Neutral salt water spray test



<Test conditions>

JIS Z2371
NaCl concentration : 50g/L
pH : 6.5~7.2
temperature : 35°C

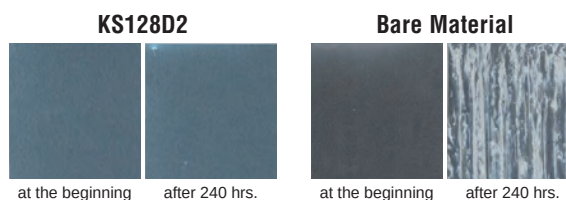
Acetic acid salt water spray test



<Test conditions>

JIS Z2371
NaCl concentration : 50g/L
pH : 3.1~3.3 (adjusted with acetic acid)
temperature : 35°C

Appearance comparison before and after acetic acid salt water spray test





For outside sheet metals, Cation electrodeposition coating is used for undercoat plus polyester powder coating or acrylic backed coating for top coat and corrosion protection is applied for heat exchanger, welded parts, fan guard, fin guard and other major parts.

Preventing corrosion by salt damage or sulfurous acid gas has made service life of KX6 series longer while its exterior appearance has been greatly improved.

Durability of KX6 series for anticorrosion is about two times that of standard outdoor units under the same conditions.

Additional treatment from the standard series

*FDCS335KXE6M-K, FDCS560KXE6M-K (For combination)

		4~12HP	12~20*·14~24HP
Exterior panel		undercoat: Cation electrodeposition coating topcoat: polyester powder coating or acrylic baked coating	undercoat: Cation electrodeposition coating topcoat: acrylic baked coating
Base plate		undercoat: Cation electrodeposition coating topcoat: polyester powder coating or acrylic baked coating	undercoat: Cation electrodeposition coating topcoat: acrylic baked coating
Drain pan		_____	undercoat: Cation electrodeposition coating topcoat: acrylic baked coating
Fan motor		application of anticorrosion compound	
Fan motor base	4~6HP	_____	application of anticorrosion compound
	8~12HP	application of anticorrosion compound	
Heat exchanger	Fin	Precoated Aluminum Blue Fins in high anticorrosion specification	Precoated Aluminum Blue Fins in high anticorrosion specification
	pipe	application of anticorrosion compound	application of anticorrosion compound
	Side plate	application of anticorrosion compound	application of anticorrosion compound
Compressor		application of anticorrosion compound	
Accumulator		application of anticorrosion compound	
Receiver		application of anticorrosion compound	
Control box	4~6HP	_____	galvanized steel sheet + undercoat: Cation electrodeposition coating + topcoat: acrylic baked finish
	8~12HP	application of anticorrosion compound	
Baffle plate	4~6HP	_____	_____
	8~12HP	application of anticorrosion compound	
Service valve bracket	4~6HP	_____	galvanized steel sheet + undercoat: Cation electrodeposition coating + topcoat: acrylic baking finish
	8~12HP	application of anticorrosion compound	
Screw tap for exterior panel		zinc coating + chromate treatment + fluorine coating	zinc coating + chromate treatment + fluorine coating
Screw tap for inside of exterior panel		zinc coating + chromate treatment + fluorine coating	zinc coating + chromate treatment + fluorine coating

Corrosion protection treatment complies with regulation of The Japan Refrigeration and Air Conditioning Industry Association

Caution

Even if the outdoor unit is protected with the anti-salt damage treatment, it cannot be perfectly free from rusting.

The following points should be kept in mind during installation and maintenance of the outdoor units.

Installation

- (1) When installing the outdoor unit close to the coastal area, provide a windbreak to protect it from direct sea breeze and salt water splash.
- (2) Select a well-drained place to install.
- (3) If any scratch or damages occurred on the outdoor unit during installation, repair it carefully.

Maintenance

- (1) Clean salt grains on the outdoor unit with fresh water periodically.
- (2) Apply rust preventive at regular intervals for maintenance depending on the conditions at the installation place (consulting with the withstanding capacity).
- (3) Confirm reset of screw tap after maintenance, if missing it may cause corrosion occurred from the hole of screw tap.
- (4) During prolonged non operation periods, protect the unit with covering.

Indoor units

Ceiling Cassette -4way-FDT

Model No.

FDT28KXE6F	FDT90KXE6F
FDT36KXE6F	FDT112KXE6F
FDT45KXE6F	FDT140KXE6F
FDT56KXE6F	FDT160KXE6F
FDT71KXE6F	



Remote control (option)

Wired



RC-EX1A RC-E5 RCH-E3

Wireless



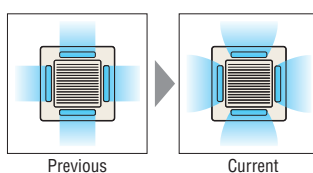
RCN-T-36W-E

Individual flap control system

According to room temperature conditions, four directions of air flow can be controlled by individual flap as preferred. Individual flap control is available even after installation.



Due to optimization of outlet design of air flow with our new advanced technology, sufficient air flow is secured and long reach of air flow is realized.



Previous

Current

The thinnest design

Thanks to new design of heat exchanger changed from 2 parts to 1 part, the height of indoor unit is reduced drastically. Furthermore applying DC fan motors to FDT models, the highest energy efficiency level, reduction of weight and significant compact design are realized.

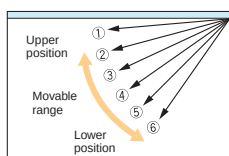
Shape of Heat exchanger



Flap control system

Selection of flap position is possible. Individual flaps can be set at different angles.

* RCH-E3 is not applicable to the individual flap control system and the flap control system.



for person who is far from the indoor unit



for both persons who are feeling hot or cold



can cool both the kitchen and the guests

Specifications

Item	Model	FDT28KXE6F	FDT36KXE6F	FDT45KXE6F	FDT56KXE6F	FDT71KXE6F	FDT90KXE6F	FDT112KXE6F	FDT140KXE6F	FDT160KXE6F
Nominal cooling capacity	kW	2.8	3.6	4.5	5.6	7.1	9.0	11.2	14.0	16.0
Nominal heating capacity	kW	3.2	4.0	5.0	6.3	8.0	10.0	12.5	16.0	18.0
Power source		1 Phase 220-240V, 50Hz / 220V, 60Hz								
Power consumption	Cooling	0.03-0.03 / 0.03			0.04-0.04 / 0.04	0.08-0.08 / 0.08		0.15-0.15 / 0.15	5 / 0.15	
	Heating	0.03-0.03 / 0.03			0.04-0.04 / 0.04	0.08-0.08 / 0.08		0.15-0.15 / 0.15	5 / 0.15	
Sound power level	dB(A)	53			60	64	65	—	—	—
Sound pressure level ※	dB(A)	Hi:33 Me:31 Lo:30					Hi:40 Me:37 Lo:35		Hi:42 Me:40 Lo:37	Hi:43 Me:41 Lo:38
Exterior dimensions H x W x D	mm	Unit:246x840x840 Panel:35x950x950					Unit:298x840x840		Panel:35x950x950	
Net weight	kg	Unit:22 Panel:5.5			Unit:24 Panel:5.5		Unit:27 Panel:5.5		Panel:5.5	
Air flow ※	m³/min	Hi:18 Me:16 Lo:14					Hi:27 Me:24 Lo:20		Hi:30 Me:27 Lo:23	
Outside air intake		Possible								
Panel		T-PSA-3BW-E								
Air filter, Q'ty		Pocket Plastic net x1 (Washable)								
Remote control(option)		wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-T-36W-E								
Installation data Refrigerant piping size	mm(in)	Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8")	Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")			Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")				

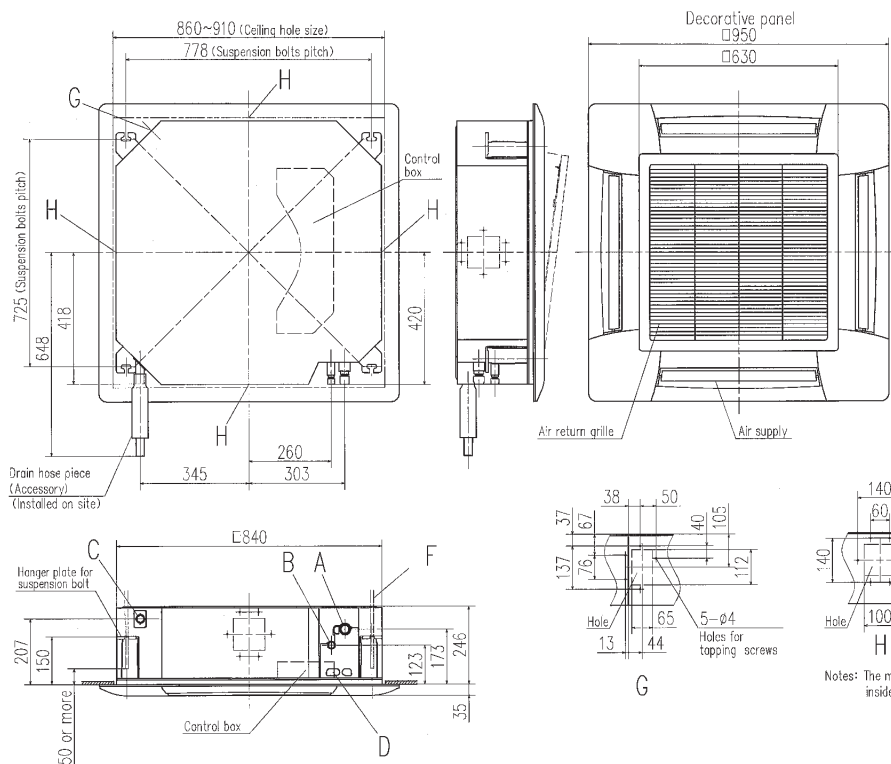
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

* Powerful-Hi can be selected. Sound pressure level: FDT28/36/45 37dB(A), FDT56 39dB(A), FDT71 46dB(A), FDT90/112/140/160 51dB(A). Air flow: FDT28/36/45/56 20m³/min, FDT71 28m³/min, FDT90/112/140/160 37m³/min.

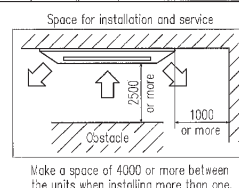
Dimensions

All measurements in mm.

FDT28KXE6F, 36KXE6F, 45KXE6F, 56KXE6F, 71KXE6F

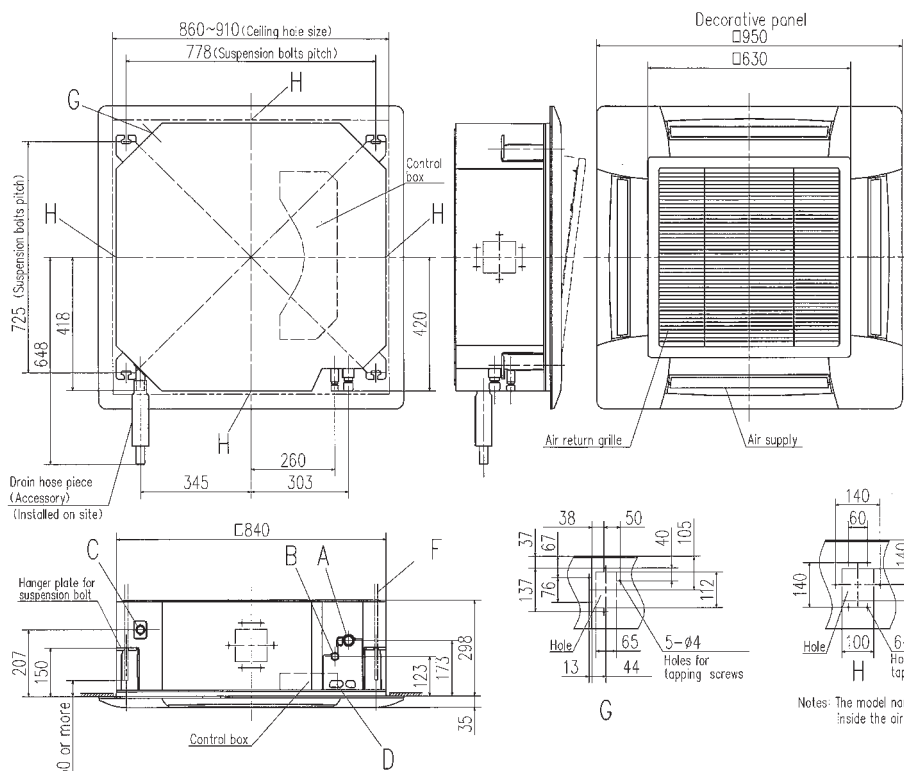


Symbol	Model	Content
	FDT28KXE6F, 36KXE6F, 45KXE6F, 56KXE6F, 71KXE6F	
A	Gas piping	φ15.88 (5/8") (Flare)
B	Liquid piping	φ9.52 (3/8") (Flare)
C	Drain piping	VP25 (Ø1.32)
D	Hole for wiring	
F	Suspension bolts	(M10 or M8)
G	Outside air opening for ducting	(Knock out)
H	Air outlet opening for ducting	(Knock out)

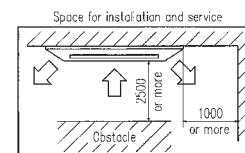


Make a space of 4000 or more between the units when installing more than one.

FDT90KXE6F, 112KXE6F, 140KXE6F, 160KXE6F



Symbol	Model	Content
	FDT90KXE6F, 112KXE6F, 140KXE6F, 160KXE6F	
A	Gas piping	φ15.88 (5/8") (Flare)
B	Liquid piping	φ9.52 (3/8") (Flare)
C	Drain piping	VP25 (Ø1.32)
D	Hole for wiring	
F	Suspension bolts	(M10 or M8)
G	Outside air opening for ducting	(Knock out)
H	Air outlet opening for ducting	(Knock out)



Make a space of 5000 or more between the units when installing more than one.

Ceiling Cassette -4way Compact (600x600mm)- FDTC

Model No.

FDT15KXE6F
FDT22KXE6F
FDT28KXE6F
FDT36KXE6F
FDT45KXE6F
FDT56KXE6F

Fits into standard
600 x 600 ceiling



Remote control (option)

Wired



Wireless



RC-EX1A RC-E5 RCH-E3 RCN-TC-24W-ER

Taking OA (Outside Air) into inside

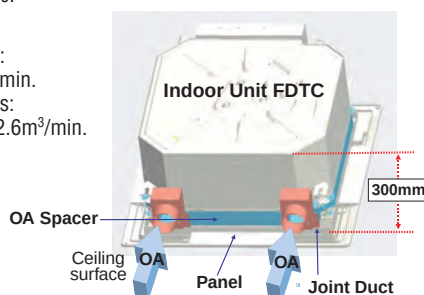
OA Spacer TC-OAS-E (option)

Joint Duct TC-OAD-E (option)

Utilizing OA spacer which comes as optional equipment, outside air can be taken inside.

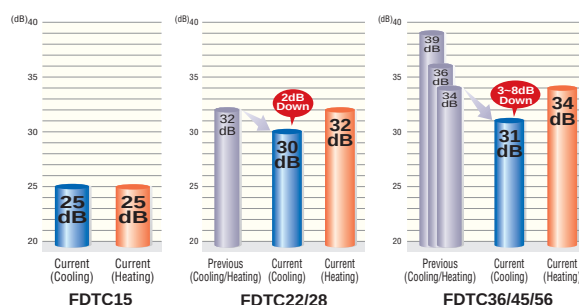
Using 1 joint duct:
OA up to 1.3m³/min.

Using 2 joint ducts:
OA from 1.3 to 2.6m³/min.



Quiet operation (Sound pressure level in the Lo mode.)

The industry's lowest sound pressure level:25dB(A) of FDT15KXE6F was achieved by Optimizing fan speed and distributor size.



Individual flap control system

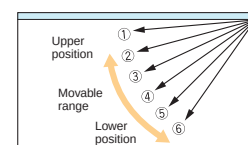
According to room temperature conditions, four directions of air flow can be controlled by individual flap as preferred. Individual flap control is available even after installation.



Flap control system

Selection of flap position is possible. Individual flaps can be set at different angles.

* RCH-E3 is not applicable to the Individual flap control system and the flap control system.



Specifications

Item	Model	FDT15KXE6F	FDT22KXE6F	FDT28KXE6F	FDT36KXE6F	FDT45KXE6F	FDT56KXE6F
Nominal cooling capacity	kW	1.5	2.2	2.8	3.6	4.5	5.6
Nominal heating capacity	kW	1.7	2.5	3.2	4.0	5.0	6.3
Power source		1 Phase 220-240V, 50Hz / 220V, 60Hz					
Power consumption	Cooling	0.02-0.02 / 0.02		0.03-0.03 / 0.03		0.05-0.05 / 0.05	
	Heating	0.02-0.02 / 0.02		0.03-0.03 / 0.03		0.05-0.05 / 0.05	
Sound power level	dB(A)	56			58	60	
Sound pressure level ※	Cooling	Hi:32 Me:28 Lo:25	Hi:35 Me:33 Lo:30	Hi:38 Me:36 Lo:31	Hi:40 Me:37 Lo:31	Hi:45 Me:39 Lo:31	
	Heating	Hi:32 Me:28 Lo:25	Hi:35 Me:33 Lo:32	Hi:38 Me:36 Lo:34	Hi:40 Me:37 Lo:34	Hi:45 Me:39 Lo:34	
Exterior dimensions H x W x D	mm	Unit:248x570x570 Panel:35x700x700					
Net weight	kg	Unit:14 Panel:3.5			Unit:15 Panel:3.5		
Air flow ※	Cooling	Hi:7 Me:5.5 Lo:4.5	Hi:9.5 Me:8.5 Lo:7	Hi:10 Me:9 Lo:7	Hi:11 Me:9 Lo:7	Hi:13 Me:10 Lo:7	
	Heating	Hi:7 Me:5.5 Lo:4.5	Hi:9.5 Me:8.5 Lo:8	Hi:10 Me:9 Lo:8	Hi:11 Me:9 Lo:8	Hi:13 Me:10 Lo:8	
Outside air intake		Possible with OA Spacer TC-OAS-E & Joint Duct TC-OAD-E					
Panel		TC-PSA-25W-E					
Air filter, Q'ty		Pocket Plastic net x1 (Washable)					
Remote control(option)		wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-TC-24W-ER					
Installation data		Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8")				Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")	

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.

2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

※ Powerful-Hi can be selected. Sound pressure level: FDT15 34dB(A), FDT22/28 44dB(A), FDT36 46dB(A), FDT45 48dB(A), FDT56 49dB(A). Air flow: FDT15 8m³/min, FDT22/28 12m³/min, FDT36 13m³/min, FDT45 15m³/min, FDT56 16m³/min.

MPA-3-VRF INDOOR WALL MTD UNITS

Wall Mounted FDK

Model No.

FDK22KXE6F
FDK28KXE6F
FDK36KXE6F
FDK45KXE6F
FDK56KXE6F
FDK71KXE6F



FDK22~56



FDK71

Remote control (option)

Wired



RC-EX1A



RC-E5



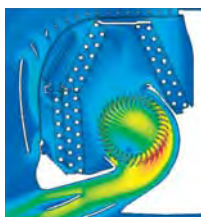
RCH-E3

Wireless



RCN-K-E : FDK22~56
RCN-K71-E : FDK71

Innovative Design



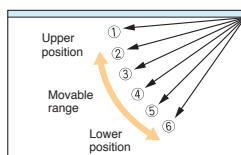
Fast ← → Slow
Colors in the figure show the air speed.

FDK models adopt the air flow design that's proven to minimise resistance in a CFD analysis to achieve uniform air conditioning to the furthest corners of the room.

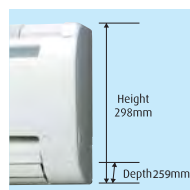
Flap control system

Selection of flap position is possible. A flap can be set at different angles.

*RCH-E3 is not applicable to the flap control system.



Installation Workability



The slimmer design allows easy & neat installation even in tight spaces.

Improved Maintainability

Also included is an easy clean mechanism where the front panel is opened/closed simply from the bottom to easily access the detachable filters.

Specifications

Item	Model	FDK22KXE6F	FDK28KXE6F	FDK36KXE6F	FDK45KXE6F	FDK56KXE6F	FDK71KXE6F
Nominal cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.1
Nominal heating capacity	kW	2.5	3.2	4.0	5.0	6.3	8.0
Power source				1 Phase 220-240V, 50Hz / 220V, 60Hz			
Power consumption	Cooling		0.05-0.05 / 0.05		0.05-0.05 / 0.05		0.09-0.09 / 0.09
	Heating		0.04-0.04 / 0.04		0.05-0.05 / 0.05		0.09-0.09 / 0.09
Sound power level	dB(A)	57			60		
Sound pressure level ※	Cooling	Hi:35 Me:33 Lo:31		Hi:41 Me:35 Lo:31	Hi:42 Me:37 Lo:33	Hi:46 Me:42 Lo:37	Hi:47 Me:43 Lo:39
	Heating	Hi:35 Me:33 Lo:31		Hi:39 Me:35 Lo:31	Hi:42 Me:37 Lo:33	Hi:46 Me:42 Lo:37	Hi:47 Me:43 Lo:39
Exterior dimensions H x W x D	mm			298 x 840 x 259			318 x 1098 x 248
Net weight	kg	12			12.5	13	15.5
Air flow ※	m³/min	Hi:8 Me:7 Lo:6		Hi:10 Me:9 Lo:7	Hi:11 Me:9 Lo:7	Hi:14 Me:12 Lo:10	Hi:21 Me:18 Lo:15
Outside air intake				Not possible			
Air filter, Q'ty				Polypropylene net x2 (Washable)			
Remote control(option)		wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-K-E (for FDK22~56), RCN-K71-E (for FDK71)					
Installation data	mm(in)	Liquid line:ø6.35(1/4")			Liquid line:ø6.35(1/4")		Liquid line:ø9.52(3/8")
Refrigerant piping size		Gas line:ø9.52(3/8")			Gas line:ø12.7(1/2")		Gas line:ø15.88(5/8")

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.

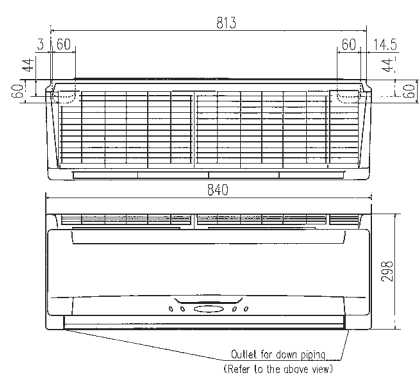
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

※ Powerful-Hi can be selected. Sound pressure level: FDK22/28 38dB(A), FDK36 48dB(A)(Cooling)&42dB(A)(Heating), FDK45 48dB(A)(Cooling)&43dB(A)(Heating), FDK56 48dB(A)(Cooling)&47dB(A)(Heating), FDK71 48dB(A). Air flow: FDK22/28 11m³/min, FDK36/45 15m³/min, FDK56 16m³/min, FDK71 24m³/min.

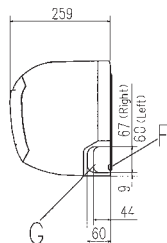
Dimensions

All measurements in mm.

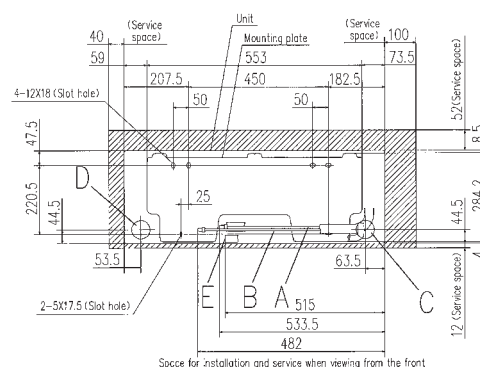
FDK22KXE6F, 28KXE6F, 36KXE6F, 45KXE6F, 56KXE6F



Note (1) The model name label is attached on the underside of the panel.

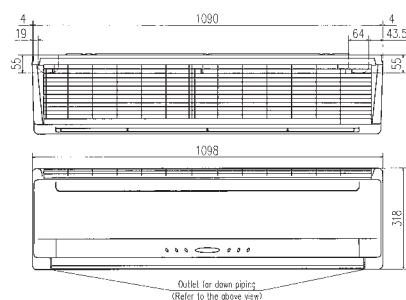


Symbol	Model	Content
A	Gas piping	FDK22KXE6F: 28KXE6F: 36KXE6F: 45KXE6F: 56KXE6F: $\phi 9.52 (3/8")$ (Floor) $\phi 12.7 (1/2")$ (Floor)
B	Liquid piping	$\phi 6.35 (1/4")$ (Floor)
C	Hole on wall for right rear piping	($\phi 65$)
D	Hole on wall for left rear piping	($\phi 65$)
E	Drain piping	VP 6 (D. 16)
F	Outlet for wiring	
G	Outlet for piping (on both side)	

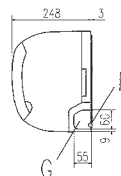


Space for installation and service when viewing from the front

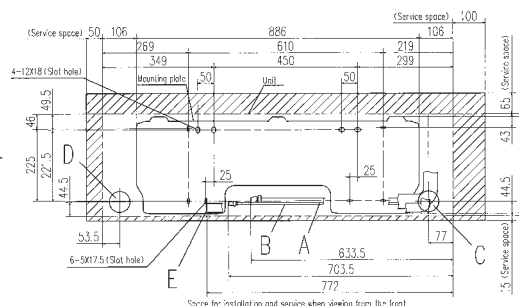
FDK71KXE6F



Note (1) The model name label is attached on the underside of the panel.



Symbol	Content
A	Gas piping
B	Liquid piping
C	Hole on wall for right rear piping
D	Hole on wall for left rear piping
E	Drain piping
F	Outlet for wiring
G	Outlet for piping (on both side)



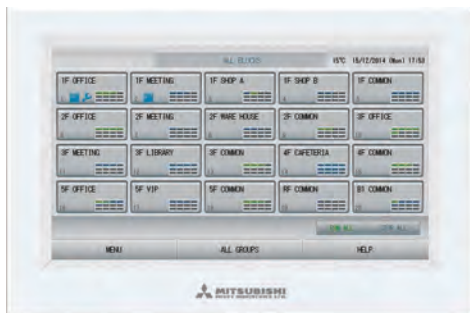
Space for installation and service when viewing from the front

MPA-3-VRF CENTRAL CONTROL UNIT

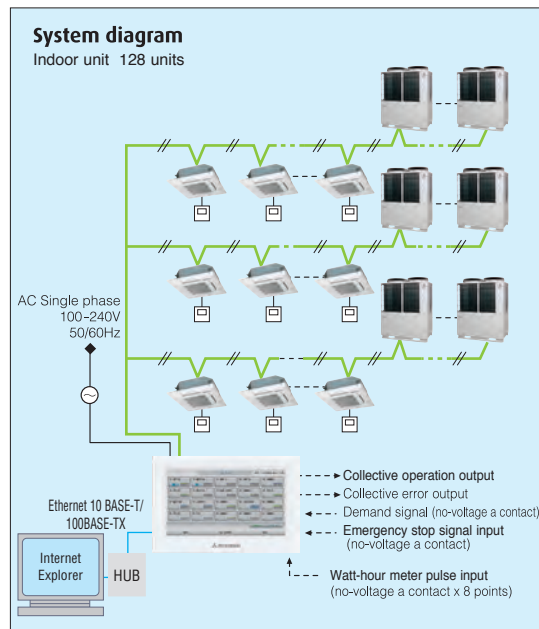
<Central Control> SC-SL4-AE/BE

MHI introduces the full colour touch screen central control SC-SL4-AE/BE, with 9 inch interactive LCD display. Offers control, monitoring, scheduling and service/maintenance functions for up to 128 indoor units. Control with PC is available by use of internet explorer.

Indoor units can be controlled, scheduled, monitored and either individually, as groups or as blocks of groups with the following functions:



Control	Monitoring	Scheduling	Administration/Service
Run/Stop / Home leave	Operating state	Yearly schedule	Block definition, Floor layout
Mode (cool/heat/fan/dry/Auto)	Mode	Today's schedule	Group definition
Set temperature	Set temperature	Detailed daily schedule	Unit definition
Operation permitted/prohibited	Room temperature	Season setting	Time and date setting
Fan speeds	Operation permitted/prohibited		Alarm history
Air direction	Fan speed		Energy consumption calculation period
Filter sign reset	Air direction		Energy consumption, cumulative operation time
Demand control (3 steps)	Filter sign		Flap control setting
Emergency stop	Maintenance (1, 2 or back-up) Outdoor air temperature		Operation data monitoring Data logging (Run / Stop set temperature , room temperature , outdoor air temperature)



PC requirements: Windows Vista or Windows 7, 8.1
Monitor resolution 1280 x 1024 or more.
Web browser requirements: Internet Explorer 9, 11

Schedule setting

For each group

Schedule settings for each group are possible. The RUN/STOP/HOME LEAVE time, operation mode, remote control Lock/Unlock setting, temperature setting, energy setting, and silent mode can be set up to 16 times per day.



Yearly Schedule

Schedule settings for a year are also possible. The weekday, holiday, special day 1 or special day 2 can be selected and set.



Operation time history

Possible to check operation time history for cooling and heating separately.

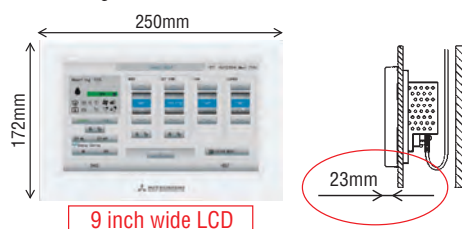


Alarm history

A maximum of 300 records is displayed for the history of error occurrence and restoration in the unit of air-conditioner. It is possible to output the history data to a CSV data file.

High visibility

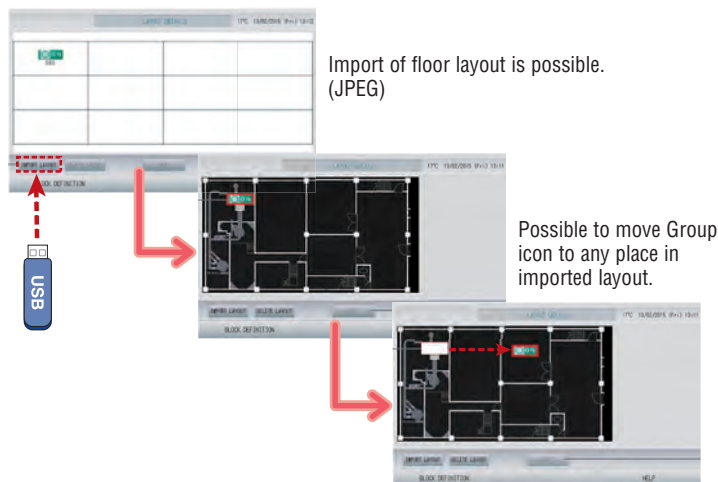
Increasing in size from 7 to 9 inches



Contrast between five colors for icon display and black light base screen has achieved high visibility.

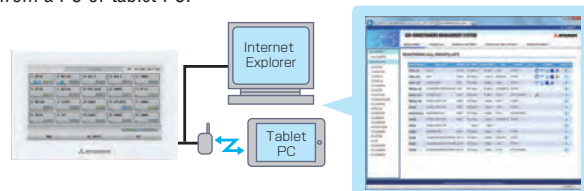
Green : in operation
Blue : stop
Red : error
Yellow : communication error
Gray : no groups

Block layout function

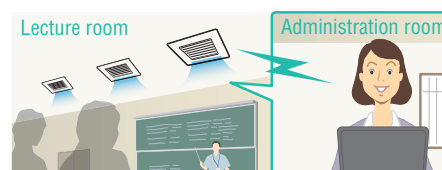


Web function

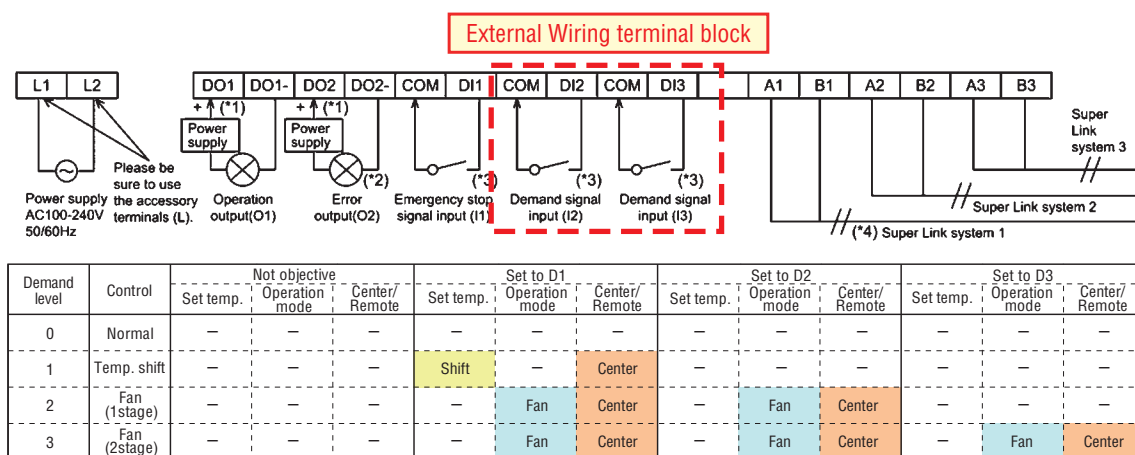
You can monitor and control up to 128 indoor units (Max.128 groups) from a PC or tablet PC.



<Example>
Monitoring and operating air-conditioners in a lecture room of a university



3 levels of demand control from 2 external inputs



Demand level 1 – Any indoor unit set to D1 (Demand level 1) has its temperature set point shifted by +2°C in cooling mode or -2°C in heating mode and cannot be operated from the local remote controller

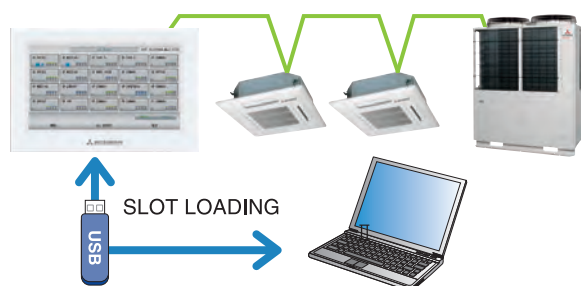
Demand level 2 – Any indoor unit set to D1 or D2 switch to fan only mode and cannot be operated from the local remote controller

Demand level 3 – Any indoor unit set to D1 or D2 or D3 switch to fan only mode and cannot be operated from the local remote controller

Electric power calculation function:

(for SC-SL4-BE only)

SC-SL4-BE gives electric power consumption data (kWh) for each indoor unit, each group, each SUPERLINK system, and each watt-hour meter input.



	SC-SL4-BE
Export data by	USB / LAN
Calculation software	Included
Watt-hour meter pulse input (Maximum)	8
Max connectable indoor units	128

Item	Model	SC-SL4-AE/SC-SL4-BE
Ambient temperature during use		0 ~ 40°C
Power supply		1 Phase 100-240V 50/60Hz
Power consumption		9W
External dimensions (Height x Width x Depth)		172mm x 250mm x 23 (+70) mm
Net weight		2.0kg
Number of connectable units (indoor units)		up to 128 units
LCD touch panel		Colour LCD, 9 inches wide
Inputs	SL (Superlink) signal inputs	1 system (Super link-II)
	Watt-hour meter pulse input*	8-point, pulse width 80ms or more
	Emergency stop signal input*	1 point, non-voltage a contact input continuous input (closed, forced stop)
	Demand signal input*	2 point, non-voltage a contact input continuous input (closed, demand control)
Outputs	Operation output	1 point, maximum rated current 40mA, DC24 V All units stop; Open, any unit operating; Close
	Error output	1 point maximum rated current 40mA, DC24 V Normal; closed. If even one unit is abnormal; Open

* The receiving side power supply is DC 12V (10mA).

The air conditioning charges calculations of this unit are not based on OIML, the international standard.

SC-SL1N-E

Start/stop control of up to 16 indoor units either individually or collectively.

Simple centralised control.

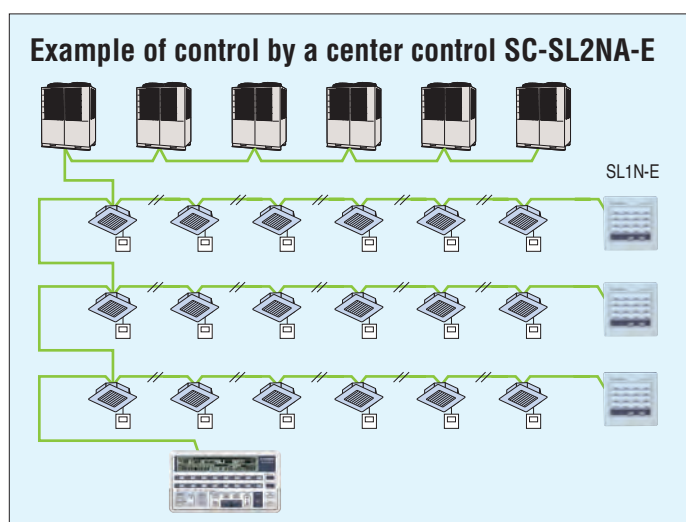
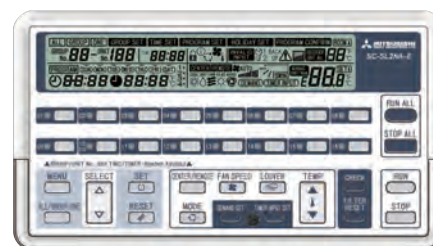
1. The SC-SL1N-E is connected to the Superlink-II network via 2-core, non-polar wires ('AB' connection).
2. It will monitor and control the start/stop function of up to 16 units, with the sixteen operation button.
3. The unit or group numbers in operation or in need of service are displayed with an LED.
4. Collective start/stop is also available through the simultaneous on/off button.
5. Up to 12 SC-SL1N-E units can be connected to a Superlink-II network (consisting of up to 128 indoor units).
6. If a power failure occurs, the SC-SL1N-E will resume the operation of the system according to a stored operation condition, once power is restored.



SC-SL2NA-E

Central control of up to 64 indoor units including weekly timer function as standard.

1. The SC-SL2NA-E is connected to the Superlink-II network via 2-core, non-polar wires ('AB' connection).
2. It will monitor and control the start/stop function of up to 16 units, or 16 groups of units, with the sixteen operation buttons.
3. It also monitors and controls the following functions for individual units, groups of units or the complete network: operation mode, set point temperature, return air temperature, louvre position, error code. Air flow and center lock function.
4. The unit or group numbers in operation or in need of service are displayed with an LCD.
5. Collective start/stop is also available through the simultaneous on/off button.
6. If a power failure occurs, the SC-SL2NA-E will resume the operation of the system according to a stored operation condition, once power is restored.
7. The SC-SL2NA-E can be connected to an external timer to facilitate timed on/off cycles.



An SC-SL2NA-E performs the start/stop control, monitoring and mode setting of up to 64 units. It is a high quality air conditioner control system that allows up to 64 indoor units to be freely grouped into 1 to 16 groups.

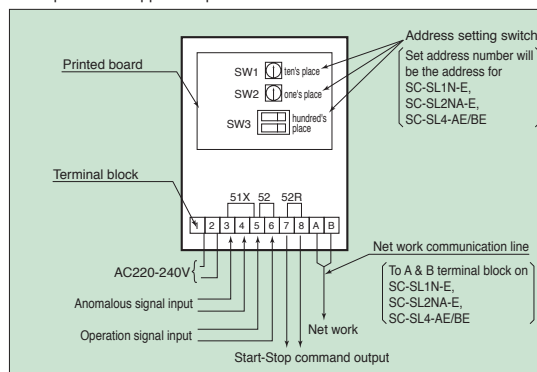
It allows not only the start/stop control but also the monitoring, display of operation statuses such as in operation or in need of service and mode setting such as switching of operation modes of connected units collectively, by group or individually.

• Outer dimensions: H120 x W215 x D25+35* mm.

35* is the measurement including the part contained in a recess.

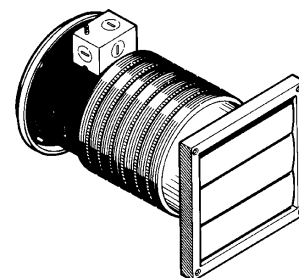
SC-GIFN-E Interface kit

- Applicable products
Ventilation fan, Air purifier
- By using SC-GIFN-E together with central control such as SC-SL1N-E, SC-SL2NA-E and SC-SL4-AE/BE, you can start-stop, operate & monitor the operation of applicable products.



Note: Please consult dealer for combination of center controls and BMS interface units.

MODEL 512MEX THROUGH-WALL UTILITY FAN



Economy, versatility and performance in a thru-the-wall ventilator.

FEATURES

INTERIOR GRILLE:

- White polymeric complements any décor

MOTOR:

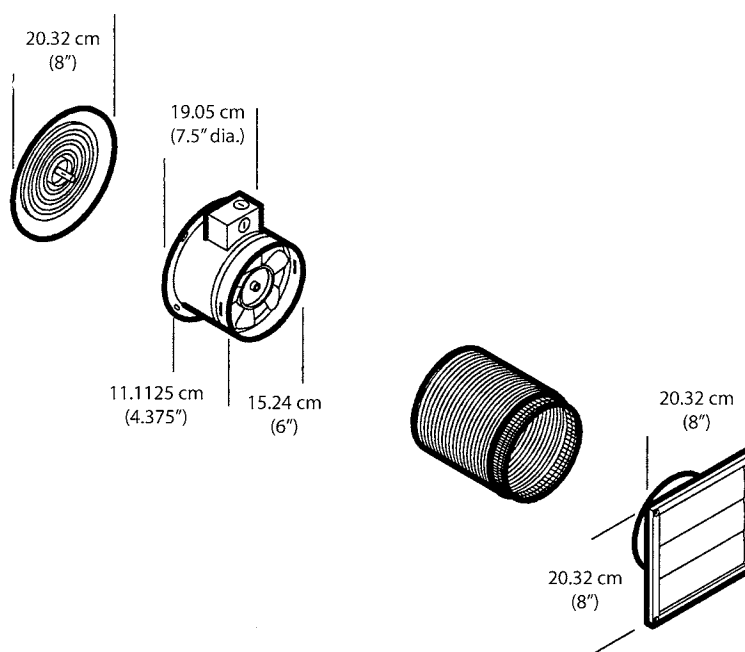
- Plug-in, thermally protected, permanently lubricated
- Quiet, durable polymeric blade
- Motor assembly features fast, easy “twist-lock” installation

HOUSING:

- Steel housing finished with electrically-bonded epoxy paint
- Can be installed in outside walls from 5-1/4” to 10” thick (walls less than 6” thick will not use the 6” dia. flexible duct)
- Use with variable speed control or wall switch

EXTERIOR WALL CAP:

- Louvered white polymeric material
- Integral birdscreen
- 6” dia. flexible ducting included

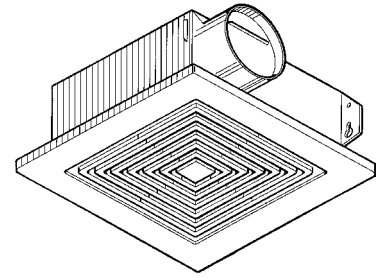


PRODUCT DETAILS

Model	CFM	Sones	Amps	Volts	Hz	Duct	Individual Carton			
							Weight (kg)	Length (cm)	Width (cm)	Height (cm)
512MEX	90	3.5	1.00	240	50/60	—	1.50	21.59	21.59	25.40

Sones are estimates only. Amps are rated at a total connected load.

MODEL 671EX CEILING/WALL MOUNT EXHAUST FAN



Simple installation and dependability make this odor and moisture removing fan a real value.

FEATURES

GRILLE:

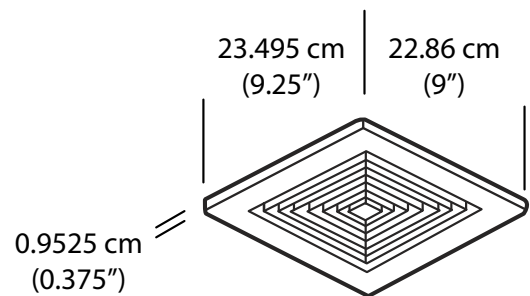
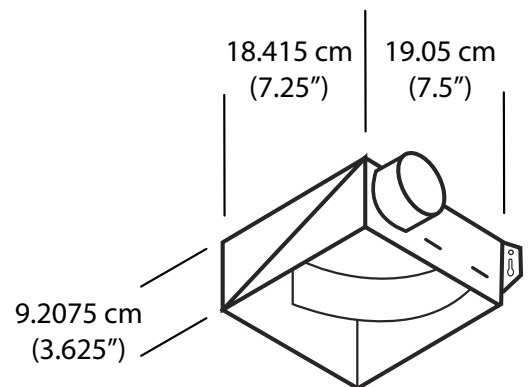
- White polymeric – blends well with any décor
- Torsion spring grille mounting – no tools necessary

BLOWER:

- Plug-in, permanently lubricated motor
- Broan-designed polymeric blower wheel
- Snap in/out motor assembly for easy cleaning – no screws to drive or drop

HOUSING:

- Compact, 25-gauge galvanized steel – attaches easily to wall or ceiling joists
- Double strength mounting flanges with keyhole slots
- Removable wiring cover – make connections away from tight corners
- No electrical knockout to remove
- Polymeric duct fitting with tapered sleeve for easy, positive duct connection
- Quiet polymeric damper prevents cold backdrafts – no metallic clatter

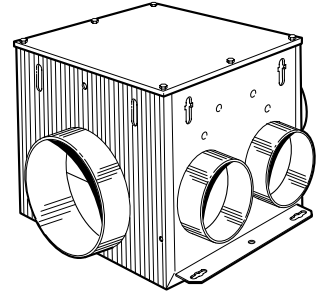


PRODUCT DETAILS

Model	CFM	Sones	Amps	Volts	Hz	Duct	Individual Carton			
							Weight (kg)	Length (cm)	Width (cm)	Height (cm)
671EX	70	6.0	1.15	220/240	50/60	3" Rd	2.04	25.40	12.70	25.40

CFM rated @ 0.1" Ps. Sones are estimates only. Amps are rated at a total connected load.

MODEL MP200EX MULTI-PORT IN-LINE VENTILATOR



Improves overall indoor air quality throughout all levels of the house.

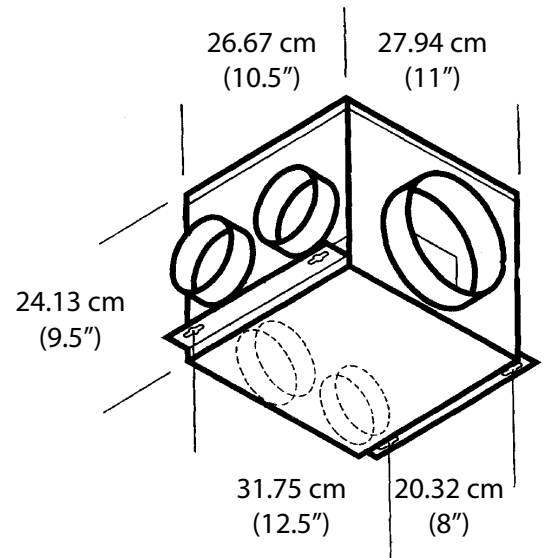
FEATURES

BLOWER:

- High pressure, centrifugal blower accommodates many ducting configurations
- Motors designed for continuous operation
- Permanently lubricated motor assures worry-free operation
- Permanent Split Capacitor (PSC) motor used for quiet operation and low power consumption
- Plug-in motor rated at 220/240 VAC, 50/60 Hz operation

HOUSING:

- Rugged 20-gauge steel housing finished with electrically-bonded epoxy paint
- May be installed in virtually any orientation – ceiling, wall, or floor
- In-Line installation assures quiet operation
- Easily removable panel permits quick access to blower for cleaning and servicing without disturbing ductwork
- Four (4) 10.16 cm round inlets and 15.24 cm round outlet for easy duct connections
- All wiring and ductwork can be connected from the outside of the housing – no need to remove access panel or blower

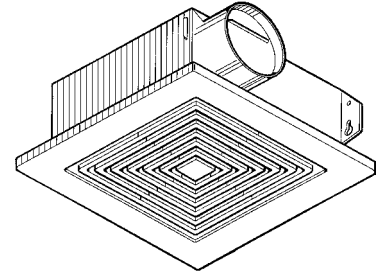


PRODUCT DETAILS – SEE REVERSE SIDE FOR ADDITIONAL PERFORMANCE RATINGS

Model	CFM*	Amps	Volts	Hz	RPM	Individual Carton			
						Weight (kg)	Length (cm)	Width (cm)	Height (cm)
MP200EX	171	0.5	240	50	2710	7.26	35.54	38.10	30.02

*CFM rated @ 0.2" Ps.

MODEL 688EX CEILING/WALL MOUNT EXHAUST FAN



Simple installation and dependability make this odor and moisture removing fan a real value.

FEATURES

- UL Listed for use over bathtubs and showers when connected to a GFCI protected branch circuit

GRILLE:

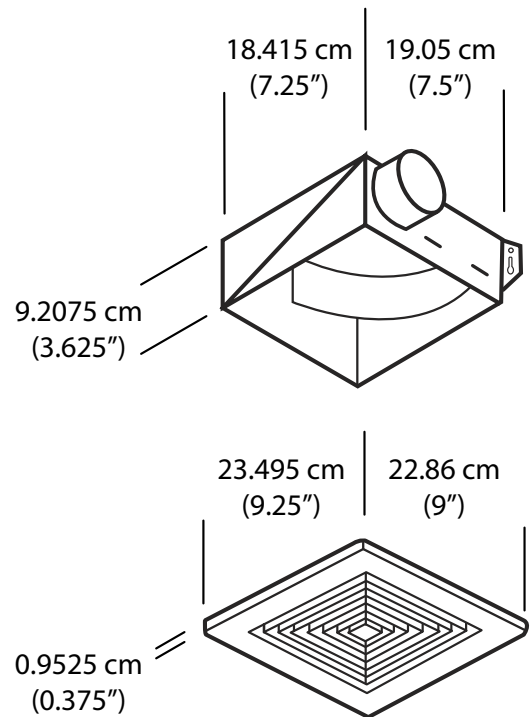
- White polymeric – blends well with any décor
- Torsion spring grille mounting – no tools necessary

BLOWER:

- Plug-in, permanently lubricated motor
- Broan-designed polymeric blower wheel
- Snap in/out motor assembly for easy cleaning – no screws to drive or drop

HOUSING:

- Compact, 25-gauge galvanized steel – attaches easily to wall or ceiling joists
- Double strength mounting flanges with keyhole slots
- Removable wiring cover – make connections away from tight corners
- No electrical knockout to remove
- Polymeric duct fitting with tapered sleeve for easy, positive duct connection
- Quiet polymeric damper prevents cold backdrafts – no metallic clatter

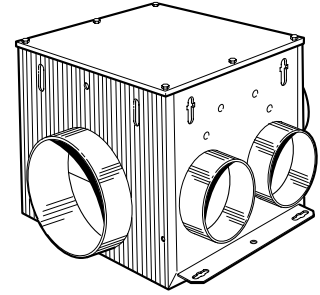


PRODUCT DETAILS

Model	CFM	Sones	Amps	Volts	Hz	Duct	Individual Carton			
							Weight (kg)	Length (cm)	Width (cm)	Height (cm)
688EX	50	4.0	0.70	240	50/60	3" Rd	2.27	25.40	12.70	25.40

CFM rated @ 0.1" Ps. Sones are estimates only. Amps are rated at a total connected load.

MODEL MP140EX MULTI-PORT IN-LINE VENTILATOR



Improves overall indoor air quality throughout all levels of the house.

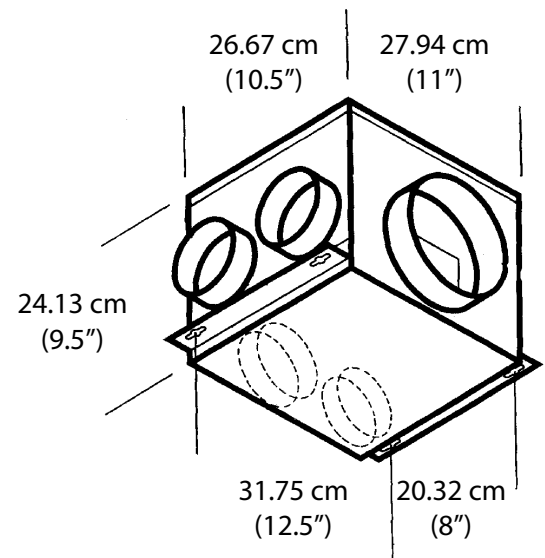
FEATURES

BLOWER:

- High pressure, centrifugal blower accommodates many ducting configurations
- Motors designed for continuous operation
- Permanently lubricated motor assures worry-free operation
- Permanent Split Capacitor (PSC) motor used for quiet operation and low power consumption
- Plug-in motor rated at 220/240 VAC, 50/60 Hz operation

HOUSING:

- Rugged 20-gauge steel housing finished with electrically-bonded epoxy paint
- May be installed in virtually any orientation – ceiling, wall, or floor
- In-Line installation assures quiet operation
- Easily removable panel permits quick access to blower for cleaning and servicing without disturbing ductwork
- Four (4) 10.16 cm round inlets and 15.24 cm round outlet for easy duct connections
- All wiring and ductwork can be connected from the outside of the housing – no need to remove access panel or blower



PRODUCT DETAILS – SEE REVERSE SIDE FOR ADDITIONAL PERFORMANCE RATINGS

Model	CFM*	Amps	Volts	Hz	RPM	Individual Carton			
						Weight (kg)	Length (cm)	Width (cm)	Height (cm)
MP140EX	138	0.3	240	50	2725	7.26	35.54	38.10	30.02

*CFM rated @ 0.2" Ps.