



# Installation, Operation and Maintenance Manual

## Unit: Mirage

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## 1 **Pre Installation**

### 1.1 Delivery Check

On receipt of delivery check the unit and packaging for any damage. Report any transport damage to Diffusion immediately, or within three working days.

Make sure that all ordered parts have been delivered. Any shortfall should be reported to Diffusion immediately.

### 1.2 Handling

The unit must be handled with care, to avoid damage to the grille and painted surfaces. Distortion of the chassis and damage to the internal components may occur as a result from impact.

### 1.3 Storage

Units should not be stacked. The units should be carefully stored under dry and dust free conditions in their packaging until required.

## 2 **Installation**

### 2.1 General

Make sure that the structure on which the unit will be suspended/mounted is capable of supporting the weight of the unit. The weight is shown on the G/A drawings.

The upper part of the unit can become hot; therefore keep 20mm from the mounting surface.

The unit must be positioned within the ceiling grid away from lights and other obstructions.

The unit should be positioned as near to the entrance/exit as possible to offer the most defence against the external conditions. Any dead area between the unit and entrance/exit may create problems with draughts etc. Please also ensure the fan discharge is located closest to the entrance/exit.

Access to the internal components, I.e. fans, coils, elements and controls can be made by removing the external grille which is secured by 4 or 6 ¼ turn screws.

### 2.2 Hanging the unit

Unit is to be suspended/mounted and levelled using four 8/10mm drop rods. Four integral fixing holes are located on the back panel of the unit for this purpose. The grille face is to be fitted flush with the ceiling.

Should the unit be fitted into a false ceiling the cut out sizes required are as follows:

1000 Unit: 552mm x 992mm  
1200 Unit: 552mm x 1192mm  
1500 Unit: 552mm x 1492mm  
1800 Unit: 552mm x 1792mm  
2000 Unit: 552mm x 1992mm

### 2.3 Pipe connections

Pipe connections are made through the side of the unit. Pipe sizes and inlet/exit points are detailed on G/A drawings/sales literature.

### 2.4 Electrical connections

The unit requires a 230v/1ph/50Hz or 415v/3ph/50Hz electrical supply that is terminated within the control box and should be connected in accordance with the wiring diagram and current IEE regulations. Remote controls should be wired in accordance with wiring diagram, to prevent transformer failure. Once all connections have been made the unit can be switched on and run via the remote switchplate. Cable entry points are detailed on the G/A drawings/sales literature.

**Warning: The unit must be earthed. Make sure that the mains supply you are working on is switched off.**

### **3 Operation**

#### 3.1 Unit operation

Electric Version: The unit shall be supplied with a remote control plate housing 2-speed/off and heat on/off switches. The unit can be used in ambient mode, by using the fans only setting. Should the airflow fail, or reduce to dangerously low levels due to obstruction or fan failure, the manual over heat safety cut out will operate. This cuts the electrical power to the heating elements and shuts them down, which prevents the unit from seriously over heating and becoming a safety hazard.

LPHW version: Supplied with a remote control plate housing 4 speeds/off.

Energy saving controls shall operate differently and a separate O&M manual can be provided on request.

#### 3.2 Safety Instructions

**Warning:**

**Do not insert any objects into the inlet or discharge openings.**

**Never block the inlet or discharge openings.**

**During operation the surface of the unit can become hot.**

**Make sure mains power supply is switched off, whilst working on the unit.**

**When the unit is switched off, residual heat will be present for a period of time, DO NOT remove the access panel or carry out any maintenance until the heat has dissipated sufficiently to a level where it is safe to do so.**

#### 3.3 Operation of options

Remote or return air Thermostats: To control electric heating on/off on electric version and fan on/off on LPHW version (Standard or Energy saving controls).

Low water temperature cut out: Provides automatic shutdown of the fan/motor when boilers have been switched off (standard controls only).

Summer/Winter switch (manual): Used in conjunction with the room thermostat and/or low water temperature cut out, this will allow the fan only to run for air movement (standard controls only).

BMS interface relay: 24vac relay and base.

Energy saving controls: Refer to controls O&M manual for details.

### **4 Maintenance and Servicing**

#### 4.1 Safety Instructions

**Warning: Before maintaining/servicing the unit:**

**Make sure mains power is switched off, (i.e. fused spur or main circuit breaker).**

**Wait until fans/motors have stopped rotation.**

**Allow the unit to cool down after operation.**

**Coil fins and elements fins can be sharp.**

**Use all necessary safety equipment required by current HSE legislation.**

## 4.2 General maintenance

Access to all the components can be made via the removable grille (1/4 turn screws).

**Removal of fan deck:** Remove filter (LPHW version) and unplug quick release fan connectors. Loosen the two side fixings (one either side of unit) and remove the two screws located on the underneath of the fan deck (please support deck as it will be free to swing down). Safety chains can now be released and the fan deck unhooked from side fixings.

**Removal of fan/motor:** The fan impeller can be released from the motor shaft by using 1/8 allen key (long type). Fan casing can be re-released by removing the four fixing screws through the fan deck. Motor can be released by removing the four fixing screws. Should the motor have two fans connected both impellers need to be released. Should the motor only require one motor shaft and the replacement is supplied with two shafts, the unused shaft can be removed with a hacksaw.

**Filter (if applicable):** Must be maintained at regular intervals. Exact intervals will be determined by environmental/building conditions.

**Fans:** Impeller blades should lightly brushed/cleaned at regular intervals, this is to remove any dust that has gathered. The fans have sealed for life bearings and therefore require no lubrication.

**LPHW Coils:** Fins should be lightly brushed/cleaned at regular intervals; this is to remove any dust that has gathered.

**Electric Elements:** Fins should be lightly brushed/cleaned at regular intervals; this is to remove any dust that has gathered.

## 5 **Spares Parts**

### 5.1 Spares lists

Contact spares department for full details.

## 6 **Drawings**

### 6.1 G/A Drawings

As attached drawings

### 6.2 Wiring Diagrams

As attached drawings

## 7 **General information**

The goods supplied are subject to et Environmental standard terms and conditions of sale, a copy of which is available on request. If anything in these installation operation and maintenance instructions conflicts with the terms and conditions, then the terms and conditions will apply.

Each unit is individually tested both mechanically and electrically. A test label is attached to each unit signed by the tester for each test completed.

Liability for the contents of this guide:

However much care might have been taken in ensuring the correctness and, where necessary, completeness of the description of the relevant parts, et Environmental disclaims all liability for damage resulting from any inaccuracies and/or deficiencies in this guide.

Should you detect any errors or ambiguities in this guide then we would be pleased to hear from you: it helps us to improve our documentation even further.

et Environmental has a policy of continuous development and therefore reserves the right to alter information contained in this literature without prior notice.

If you require any further information please contact the following:

Diffusion  
47 Central Avenue  
West Molesey  
Surrey KT8 2QZ

Tel: 0208 783 0033

email: [diffusion@etenv.co.uk](mailto:diffusion@etenv.co.uk)

Fax: 0208 783 0140

Web: [www.diffusion-group.co.uk](http://www.diffusion-group.co.uk)

## **Declaration of Conformity**

This certificate declares that the following et Environmental plc products:

### **Over door heaters, space heating units, fan convectors and vent units.**

Have been designed and manufactured in accordance with the requirements of the council directive 89/336/EEC relating to Electromagnetic Compatibility by the application of the following EMC generic standards.

EN50 081.1 1992

EN50 082.1 1992

Providing installation is carried out in compliance with BS 5345 & BS 6959 and that correct EMC practices are applied, and that any cable glands and connections to the units are approved for use in the relevant environment.