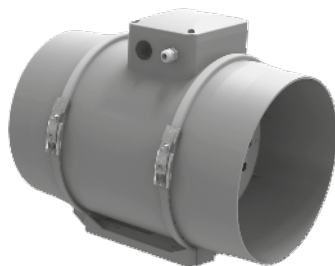


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And Ventilation Supplier



INLINE MIXED-FLOW FANS

EN

User's manual

**ILMEC**

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This user's manual is a main operating document intended for technical, maintenance, and operating staff. The manual contains information about purpose, technical details, operating principle, design, and installation of the ILMEC unit and all its modifications.

Technical and maintenance staff must have theoretical and practical training in the field of ventilation systems and should be able to work in accordance with workplace safety rules as well as construction norms and standards applicable in the territory of the country.

The information in this user's manual is correct at the time of the document's preparation.

The Company reserves the right to modify the technical characteristics, design, or configuration of its products at any time in order to incorporate the latest technological developments.

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**READ THE USER'S MANUAL CAREFULLY BEFORE PROCEEDING WITH INSTALLATION WORKS.  
COMPLIANCE WITH THE MANUAL REQUIREMENTS ENSURES RELIABLE OPERATION AND LONG  
SERVICE LIFE OF THE UNIT.  
KEEP THE USER'S MANUAL AVAILABLE AS LONG AS YOU USE THE UNIT. YOU MAY NEED TO RE-  
READ THE INFORMATION ON THE PRODUCT SERVICING.**



**FOLLOW THE USER'S MANUAL REQUIREMENTS TO ENSURE DURABLE AND TROUBLE-FREE OPERATION OF THE UNIT.**

Disconnect the unit from power supply prior to any connection, servicing, maintenance, and repair operations.

**Only qualified electricians with a work permit for electrical units up to 1000 V are allowed for installation and maintenance. The present user's manual should be carefully read before beginning works.**

- Single-phase power mains must comply with the acting local electrical norms and standards.
- Fixed electrical wiring must be equipped with an automatic circuit breaker.
- The unit must be connected to power mains through a QF automatic circuit breaker integrated into the fixed wiring system.

The gap between the circuit breaker contacts on all poles must be not less than 3 mm. Check the unit for any visible damages of

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the impeller and the casing before starting installation. The casing internals must be free of any foreign objects that can damage the impeller blades.

- While mounting the unit, avoid compression of the casing! Deformation of the casing may result in the motor jam and noisy operation. Misuse of the unit and any unauthorised modifications are not allowed.
- Take steps to prevent ingress of smoke, carbon monoxide, and other combustion products into the room through open chimney flues or other fire-protection devices. Sufficient air supply must be provided for proper combustion and exhaust of gases through the chimney of fuel burning equipment to prevent back drafting. Transported air must not contain any dust or other solid impurities, sticky substances, or fibrous materials.
- Do not use the unit in a hazardous or explosive environment containing spirits, gasoline, insecticides, etc.
- Do not close or block the intake or extract vents in order to ensure

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the efficient air flow.

- Do not sit on the unit and do not put objects on it.
- The unit is allowed to be used by children aged from 8 years old and above and persons with reduced physical, sensory, or mental capabilities or no experience and knowledge provided that they have been given supervision or instruction regarding safe use of the unit and understand the risks involved.
- Do not allow children to play with the unit.



**THE PRODUCT MUST BE DISPOSED SEPARATELY AT THE END OF ITS SERVICE LIFE.  
DO NOT DISPOSE THE UNIT AS UNSORTED DOMESTIC WASTE.**

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## PERSONAL PROTECTIVE EQUIPMENT

The following minimum PPE (Personal Protective Equipment) is recommended when interacting with this Nuaire product:

- **Semi Fingerless Gloves (Marigold PU3000 3DO or equivalent)** - when conducting light work on the unit requiring tactile dexterity.

Nuaire would always recommend a site specific risk assessment by a competent person to determine if any additional PPE is required.

## DELIVERY SET

Fan	— 1 pc.
Screws and dowels	— 4 pcs.
User's manual	— 1 pc.
Packing box	— 1 pc.

## BRIEF DESCRIPTION

The product described herein is a mixed-flow inline fan for supply or exhaust ventilation of premises heated during winter time.

The fan is designed for connection to  $\varnothing$  100, 125, 150, 160, 200, 250 and 315 mm air ducts.

The fan is equipped with an energy-efficient and high-performance electronically commutated motor (EC motor) and with a built-in speed controller.

An external control unit can be connected to the fan (purchased separately).

The fan design is constantly being improved, thus some models may be slightly different from those described in this manual.

## OPERATION GUIDELINES

The fan is rated for connection to single-phase AC 220-240 V/50 (60) Hz power mains.

The fan is rated for continuous operation.

Air motion direction in the system must match the pointer on the fan casing.

Hazardous parts access and water ingress protection rating is IPX4.

The fan is rated for operation at the ambient temperature ranging from +1 °C up to +40 °C.

Transported air temperature must not exceed +40 °C. Temperature up to +60 °C is allowed for a short time (up to 15 minutes).

The ventilator is rated as a class II electric appliance.

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## DESIGNATION KEY

ILM

EC

XXX

X

### Options:

**U** – electronic module and temperature sensor integrated into the duct of the fan, power cord

**Un** – electronic module and remote temperature sensor, power cord

**P** – built-in smooth speed controller

**R** – cable with IEC C14 connector

**R1** – cable with mains plug

**Outlet duct diameter [mm]**

**Motor type**

**Fan model**



## INSTALLATION

The fan is suitable both for horizontal or vertical mounting on the floor, on the wall or on the ceiling (Fig. 1).

While mounting the fan provide extra protection against water ingress, such as:

1. For the top mounting: install an outer protecting hood above (Fig. 2).
2. For any mounting position: connect an air duct on both sides of the fan (Fig. 2).

The mounting sequence is shown in Fig. 3-8.

The fan wiring diagram is shown in Fig. 9-11, 13-14.

The external control unit wiring diagram is shown in Fig. 9, 10, 12-14.

The fan wiring diagram is shown in Fig. 15.

### TERMINAL DESIGNATIONS ON WIRING DIAGRAMS

<b>QF</b>	external circuit breaker
<b>X1</b>	terminal block for 230 V/50-60 Hz power mains
<b>X2</b>	terminal block for connection of an external speed controller
<b>S1</b>	external speed controller 0-10 V
<b>R1</b>	internal speed controller
<b>SW</b>	DIP switch

## OPERATION ALGORITHM

The motor is controlled by sending of an external control signal from 0 to 10 V to the X2 terminal block or by the R1 internal speed controller. Control method selection is carried out by means of the SW DIP switch:

- DIP switch in IN position. The control signal is set by the R1 internal speed controller, which allows to turn the fan on and off, smoothly adjust the speed of the fan motor (air flow) in the range from minimum to maximum speed.

Rotations are controlled from minimum (extreme left position) to maximum (extreme right position). When rotating clockwise, the rotations increase.

- DIP switch in EXT position. The control signal is set by the S1 external control unit.

The **ILMEC U (Un)** fan is equipped with an electronic module **TSC** (speed controller with an electronic thermostat) for automatic fan speed control (air flow) depending on the air temperature.

The terminal compartment incorporates 2 control knobs:

- presetting speed
  - setting electric thermostat threshold value
- The thermostat operation indicator is located on the fan cover.

To set the thermostat threshold, rotate the thermostat control knob clockwise to increase or counter-clockwise to decrease the temperature set point.

To set the fan speed (air flow), rotate the speed control knob in the same way.

**CAUTION!** In case of short-term effects of electrostatic disturbance on the **ILMEC U (Un)** fan, the fan may stop. To restore it, turn the fan off and on with the speed controller, which is located on the fan casing.

## MAINTENANCE

Clean the product surfaces regularly (once in 6 months) from dust and dirt (Fig. 18-21). Disconnect the fan from power mains prior to any maintenance operations. To clean the fan, use a soft cloth or a brush wetted in a mild detergent solution. Avoid water ingress to electrical components.

Wipe the unit surfaces dry after cleaning.

## STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original packaging box in a dry closed ventilated premise with temperature range from +5 °C to +40 °C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapors and chemical mixtures provoking corrosion, insulation, and sealing deformation.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the particular type of cargo.
- The unit can be carried in the original packaging by any mode of transport provided proper protection against precipitation and mechanical damage. The unit must be transported only in the working position.
- Avoid sharp blows, scratches, or rough handling during loading and unloading.
- Prior to the initial power-up after transportation at low temperatures, allow the unit to warm up at operating temperature for at least 3-4 hours.

## MANUFACTURER'S WARRANTY

The product is in compliance with EU norms and standards on low voltage guidelines and electromagnetic compatibility. We hereby declare that the product complies with the provisions of Electromagnetic Compatibility (EMC) Directive 2014/30/EU of the European Parliament and of the Council, Low Voltage Directive (LVD) 2014/35/EU of the European Parliament and of the Council and CE-marking Council Directive 93/68/EEC. This certificate is issued following test carried out on samples of the product referred to above.

The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user's observance of the transportation, storage, installation, and operation regulations. Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation, the user is entitled to get all the faults eliminated by the manufacturer by means of warranty repair at the factory free of charge. The warranty repair includes work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

### **The warranty repair does not include:**

- routine technical maintenance
- unit installation/dismantling
- unit setup

To benefit from warranty repair, the user must provide the unit, the user's manual with the purchase date stamp, and the payment paperwork certifying the purchase. The unit model must comply with the one stated in the user's manual. Contact the Seller for warranty service.

### **The manufacturer's warranty does not apply to the following cases:**

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously dismantled by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packaging and in the user's manual.
- User's failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.

- Unit misuse.
- Violation of the unit installation regulations by the user.
- Violation of the unit control regulations by the user.
- Unit connection to power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer's authorization.
- Expiration of the unit warranty period.
- Violation of the unit transportation regulations by the user.
- Violation of the unit storage regulations by the user.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user's manual.
- Failure to submit the user's manual with the unit purchase date stamp.
- Missing payment paperwork certifying the unit purchase.

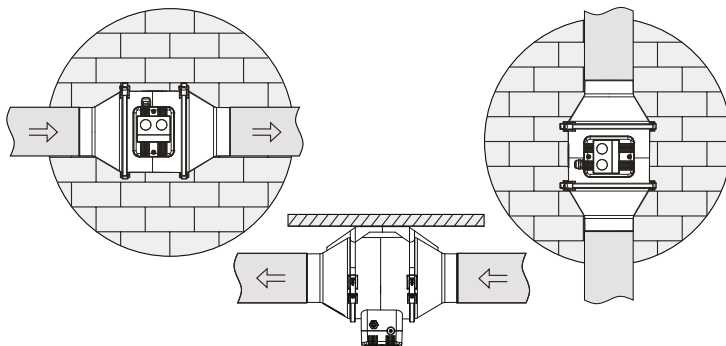


**FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT.**

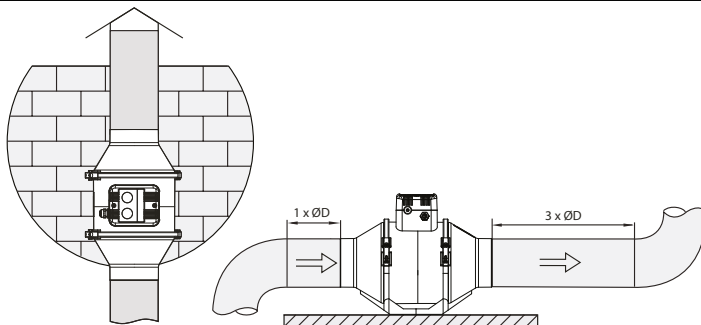


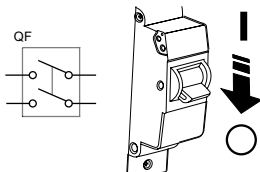
**USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.**

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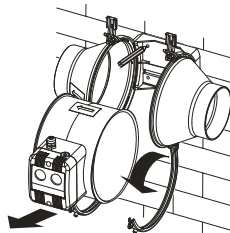


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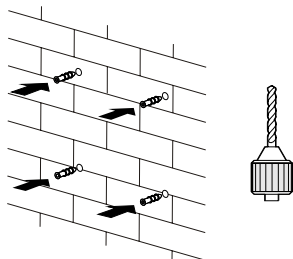




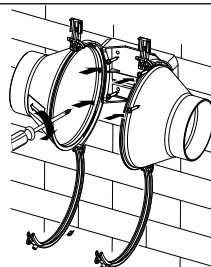
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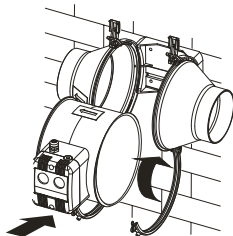
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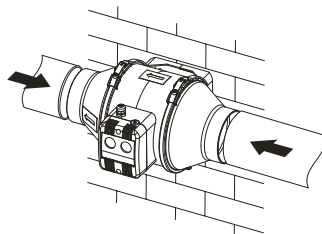
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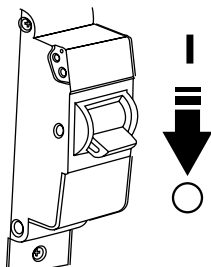
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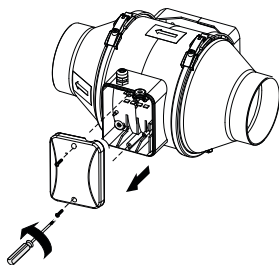
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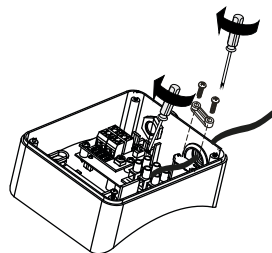
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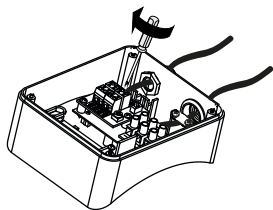
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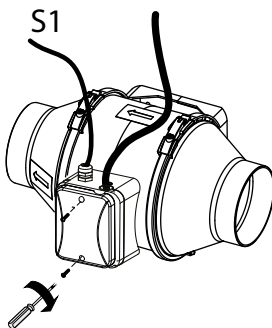
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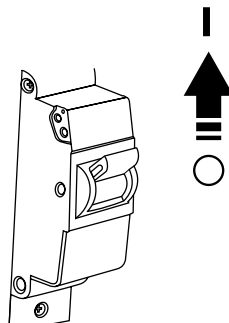
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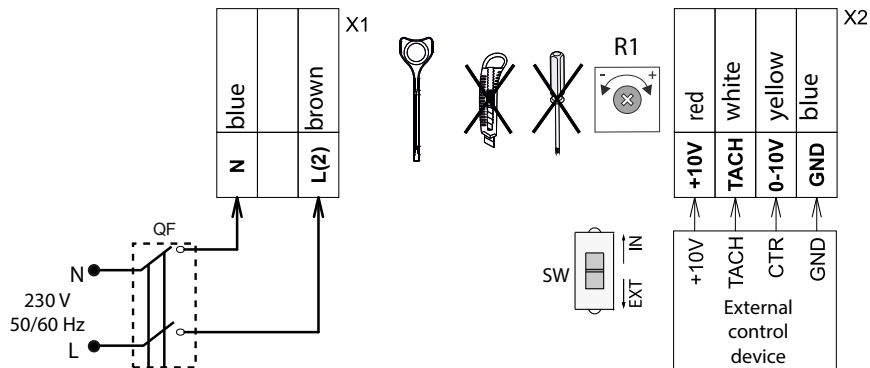
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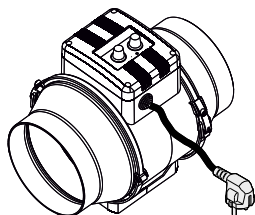
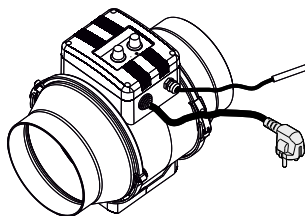
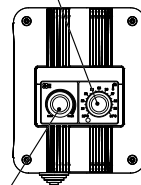
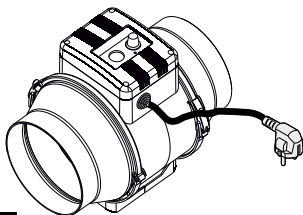
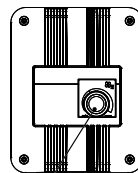


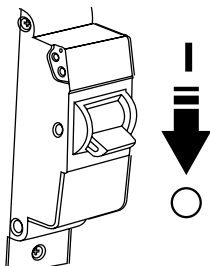
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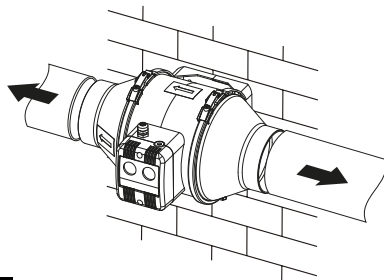
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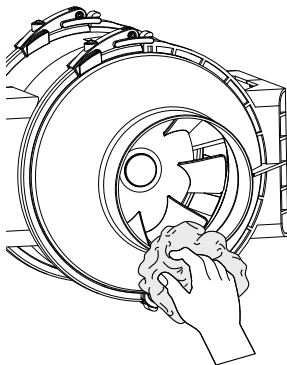
**ILMEC U****ILMEC Un**Speed  
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knobThermostat  
control  
knob**16.****ILMEC P**Speed  
control  
knob**17.**



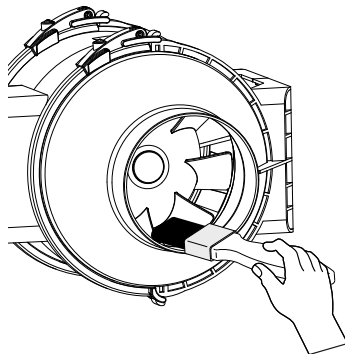
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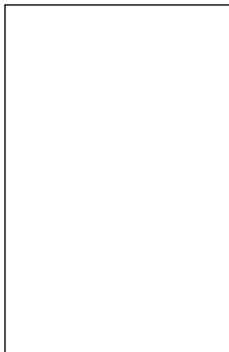
## END-OF-LIFE AND PRODUCT RECYCLING

Where possible Nuaire use components which can be largely recycled when the product reaches its end-of-life:

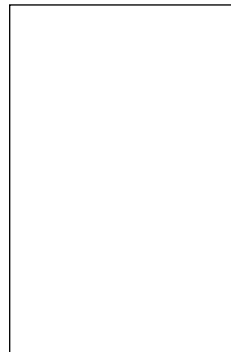
- Fans, motors, controls, actuators, cabling and other electrical components can be segregated into WEEE recycling streams.
- EPP, plastic ducting, nylon corner pieces, plastic heat exchangers, packaging material and other plastic components can be segregated into mixed plastic and widely recycled.
- Cardboard packaging, wood, used filters and other paper components can be largely recycled or fully processed in energy from waste centres.
- Remaining items can be further segregated for energy from waste centres or, as a last resort, sent to landfill. Please call After Sales Support for further information on items not listed above.



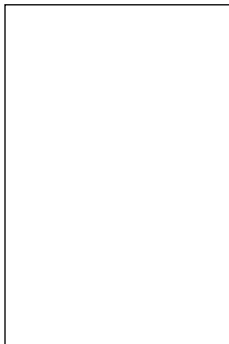
Quality Inspector's Stamp



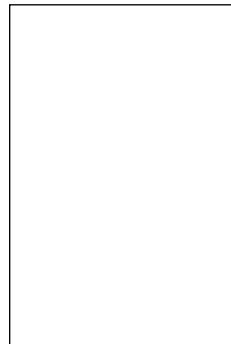
Sold by  
(name and stamp of the seller)



Manufacture Date



Purchase Date



Certificate of acceptance

The fan is recognized as serviceable.

Nuaire  
Western Industrial Estate  
Caerphilly  
CF83 1NA  
United Kingdom

029 2085 8200  
[www.nuaire.co.uk](http://www.nuaire.co.uk)

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ILMEC 160 ☐

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