TERRABLOOM®

TERRABLOOM®

TERRABLOOM EC FANS

USER MANUAL

MODELS: ECMF-100, 150, 150-S, 200, 200-S, 250, 250-S, 315, 315-S

GREETINGS FROM TERRABLOOM

Thank you for choosing TerraBloom fans for your ventilation needs. This ECMF series fan is built with a new generation EC motor which creates powerful, high-pressure airflow while saving energy. A wide range of compatible speed controllers allow you to adjust the output of this unit to fit your application.

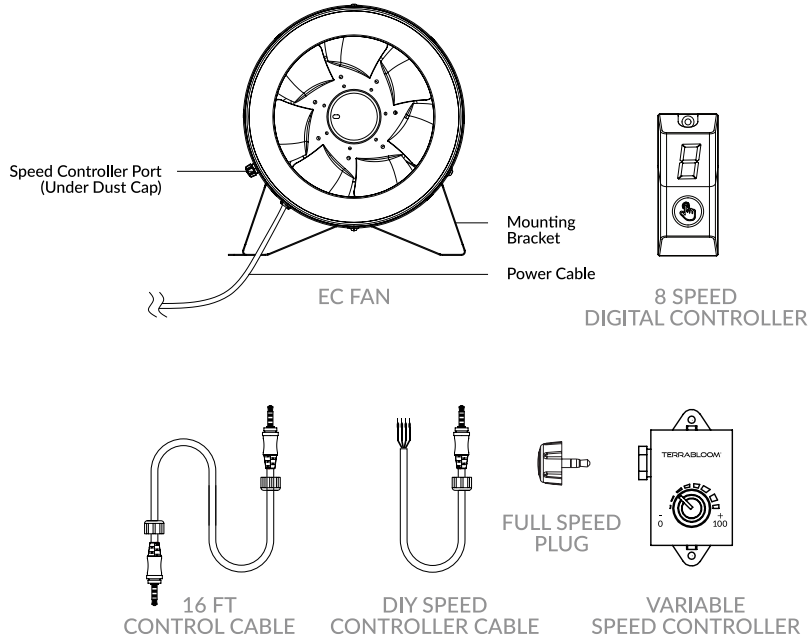
We do our best to ensure customer satisfaction. If you have any suggestions, questions or comments, please contact us directly at **support@terra-bloom.com** or through our contact form at **www.terra-bloom.com**. We are located in sunny Southern California and reply to your messages Monday-Friday, 9am-5pm PST.

CONTENTS

1.1 SAFETY WARNING

- This ventilation fan can be used by adults and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the appliance in a safe way and understand the hazards involved.
- To avoid the risk of electrical shock, or injury to persons, always make sure that the fan is unplugged from the electrical outlet before relocating, servicing, or cleaning the product.
- Never touch moving parts when the fan is on or the impeller is moving.
- If installed without ducting, use a protective grille and install the fan away from the reach of children and pets.
- The fan contains no user-serviceable parts inside. Refer to the manufacturer for service.
- Do not pull the power cord too hard or hold the fan by the power cord. If the power cord is damaged or frayed it must be replaced by the manufacturer or a qualified service person.
- Keep this instructions manual for future reference.

2.1 PRODUCT CONTENTS



2.2 FAN APPLICATIONS

TerraBloom EC fans generate powerful directional airflow required for a variety of commercial and residential applications. Our fans can be used in, but not limited to:

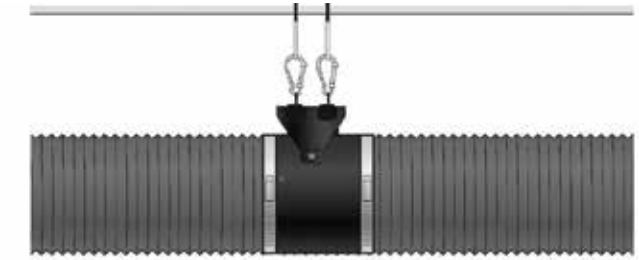
- Intake, exhaust, and over-canopy ventilation in indoor plant cultivation.
- Air filtration, VOC and airborne pathogen control (when used with a matching carbon filter)
- Indoor temperature and humidity management in rooms, attics, crawl spaces
- Boosting airflow in AC and heating ducts to reach remote rooms
- Drying applications
- Creating negative pressure environments
- Wind simulation
- Art installations
- Any application requiring strong directional air movement

3.1 OPERATING ENVIRONMENT REQUIREMENTS

- **This fan is intended and rated for indoor use only.**
- **Operating temperature range: -5°F – 140°F (-20°C – 60°C). Humidity range: 0-90%.**
- Not suitable for applications in close proximity to open flame (wood or gas burning) furnaces. Temperatures over 140°F can cause permanent damage to electronic components.
- Not suitable for environments with flammable or hazardous substances, explosive gases or chemical dust.
- In environments with high dust or debris content, use a pre-filter to prevent dust, grease and other foreign substances from building up on the fan blades. Debris buildup leads to mechanical damage, increased vibration and noise.

3.2 INSTALLATION

- Inspect fan for shipping damage before installation. Ensure that the fan blade rotates freely without touching the housing.
- Securely attach the fan to a hard surface using the pre-installed mounting bracket and screws designed for the surface type in your application.
- Do not install on hollow drywall. Mount to hard surfaces (i.e. .wood, concrete, metal).
- If used with securely installed carbon filters, it is acceptable to install the fan on top of the filter's duct collar. Secure the connection with a duct clamp.
- This fan can be installed in all mounting positions.
- In the hanging installation, use adjustable ratchet ropes or heavy-duty zip ties to suspend the fan from a rigid surface such as the ceiling, beam, joist or steel frame of a grow tent.



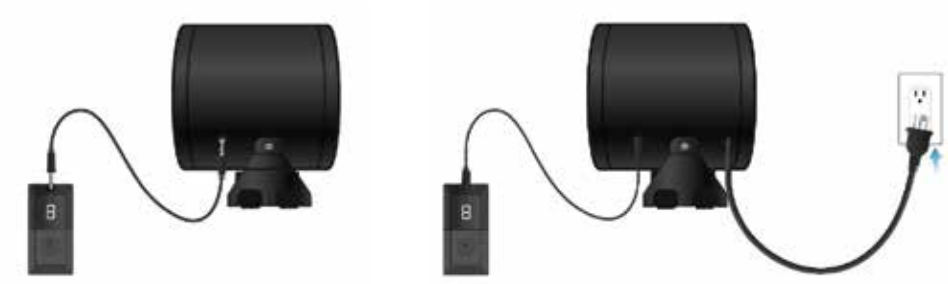
3.3 APPLICATION TIPS

- The ducting has a strong effect on the air flow, noise and energy use of the fan. Use the shortest, straightest duct routing possible for best performance, and avoid installing the fan with smaller ducts than recommended. Insulation around the ducts can reduce energy loss and inhibit mold growth. Fans installed with existing ducts may not achieve their rated airflow.
- A duct of matching size with the fan inlet and exhaust is recommended for best performance. Ensure duct joints and exterior penetrations are sealed with caulk or other similar material to create an air-tight path and to minimize building heat loss and gain and reduce the potential for condensation. Place/wrap insulation around duct and/or fan to in order to minimize possible condensation buildup within the duct, as well as minimize building heat loss and gain.
- When installed vertically and connected to the outdoors via a duct, use a vent cap with a loaded damper to protect the fan and duct from the outdoor elements.
- Install the fan at least 6ft above the floor to keep it out of reach of children and pets. For added safety use metal grills/guards to keep fan's moving parts from the reach of children and pets.
- After installation, perform a test run to confirm that the fan operates as intended. A speed controller must be connected to the fan before power up.
- Once powered on, the fan blade should rotate freely and accelerate gradually.
- If excessive noise is present, verify that there are no foreign objects (duct pieces, screws, etc.) touching the fan blade. Secure installation to a hard and stable surface is key to avoiding vibration and excessive noise.
- Do not place a duct bend directly before or after the fan. The length of the unobstructed straight duct before and after the fan should be equal to at least 2.5x the diameter of the fan. For example, a 6" fan should have at least 2.5x6"=15" of straight duct before and after the fan.

4.1 FAN OPERATION WITH SPEED CONTROLLER

- **You must use a speed controller in order to operate this fan. The fan will not start if it is not connected to a compatible speed controller.**
- **Locate the speed controller port under a screw-on plastic dust cap on the side (ECMF models) or top (ECMF-S models) of the fan.**
- **For your convenience, with your purchase we include two speed controllers in set with the fan. Only one speed controller can be used with the fan at a time. Multiple speed controllers cannot be connected simultaneously.**
- **Controller 1 – 8 speed digital speed controller.** Each press of a button on the controller increases the speed by 1 level or 12.5%. Speed level 1 = 12.5% of maximum speed, Level 2 = 25%, Level 3 = 37.5%, Level 4 = 50%, Level 5 = 62.5%, Level 6 = 75%, Level 7 = 87.5%, Level 8 = 100% (maximum speed).
- **Controller 2 – Granular variable speed controller.** Variable dial speed controller is a potentiometer type speed controller which allows for granular speed adjustment. To increase the fan's speed turn the dial clockwise, to reduce the speed, turn the dial counter-clockwise

- Insert each speed controller wire jack fully into the connection port until it clicks into position. Secure in place with a plastic locking nut located on the speed controller wire.

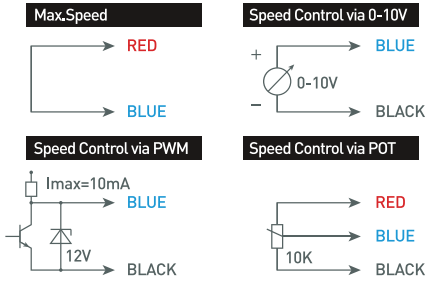


- This fan is rated for continuous use and can be operated 24/7.

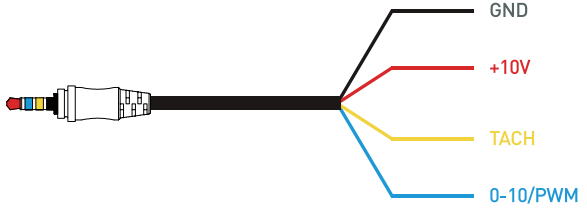
4.2 OPTIONAL SPEED CONTROLLERS

- TerraBloom offers a programmable thermostat speed controller with a temperature probe (Model: SC-ECMF) and a wireless remote speed controller (Model: ECMF-WR).
- PWM controllers (Arduino, Raspberry PI, etc) use the frequency range of 15-32kHz and voltage range of 10-12V.
- If used with a third party speed controller, use the provided TRRS 3.5mm connection wire or a DIY speed controller wire with pin outputs to connect the fan with the controller
- Refer to the illustration below for a description of pin outputs on the DIY speed controller wire.

4.3 DIY SPEED CONTROLLER WIRING DIAGRAM



4.4 DIY SPEED CONTROLLER WIRE



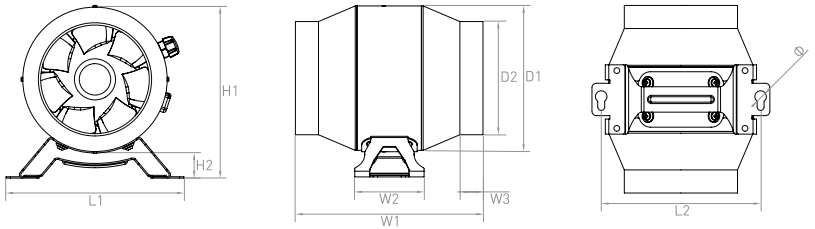
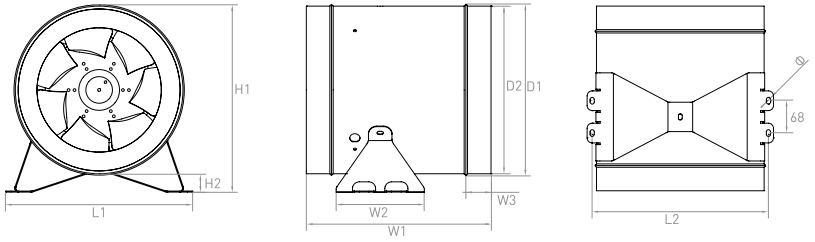
5.1 NOTE ON FAN OUTPUT AND STATIC PRESSURE

- The CFM rate stated on the fan and in the tables below is a “nominal” airflow rate and is applicable only when no additional equipment is attached to the fan.
- When you attach any equipment to the fan (ducts, vent caps, filters, splitters, elbows, etc.) you are introducing static pressure, an obstacle in the path of the airflow. This will cause the final amount of airflow delivered by the fan to be lower than the nominal airflow.
- Each duct fan has a maximum pressure rating which equals to the maximum static pressure it can counteract in order to move a certain volume of air.
- To achieve optimal results, you must take static pressure into consideration when choosing the inline duct fan to use in your application.
- A pressure drop is the amount of static pressure introduced by a filter or any equipment attached to the fan.
- To find the precise value of airflow produced by a fan in a particular application, refer to our web-site for the pressure curve of your fan model. The pressure curve shows the CFM output of the fan at different pressure levels. Once you calculate the amount of pressure created by all of the equipment attached to the fan, locate that pressure level on the pressure curve to pinpoint the corresponding CFM output.
- If the pressure drop and/or pressure curves are not available, assume that the carbon filter will reduce the amount of airflow by 30-40% from the nominal airflow rate stated on the fan. The thicker the carbon bed, the higher the pressure drop. When using ducts to connect the fan and filter, please factor an additional airflow reduction of 3% (smooth metal duct) to 7% (flexible ribbed duct) for every 25ft of duct. 90° turns in ducting cause an additional 1%-4% reduction in airflow.

5.2 FAN SPECIFICATIONS. ECMF MODELS

MODEL NUMBER / SKU	RATED VOLTAGE	MAX POWER CONSUMPTION	FREQUENCY	MAX SPEED	MAX AIRFLOW	MAX STATIC PRESSURE	MAX NOISE LEVEL
ECMF-100	110-240 VAC	21 W	50/60 Hz	5000 RPM	141 CFM / 275 M³H	1.14"W.G. / 283 Pa	7.68 Sones / 57 dBa
ECMF-150	110-240 VAC	36 W	50/60 Hz	5000 RPM	288 CFM / 489 M³H	1.59"W.G. / 396 Pa	7.44 Sones / 56 dBa
ECMF-200	110-240 VAC	74 W	50/60 Hz	3800 RPM	569 CFM / 966 M³H	1.66"W.G. / 412 Pa	9.35 Sones / 60 dBA
ECMF-250	110-240 VAC	126 W	50/60 Hz	3200 RPM	946 CFM / 1607 M³H	1.65"W.G. / 410 Pa	11.84 Sones / 63 dBA
ECMF-315	110-120 VAC	268 W	50/60 Hz	2800 RPM	1662 CFM / 2823 M³H	1.86"W.G. / 463 Pa	18.30 Sones / 70 dBA

5.3 DIMENSIONS IN MM. ECMF MODELS

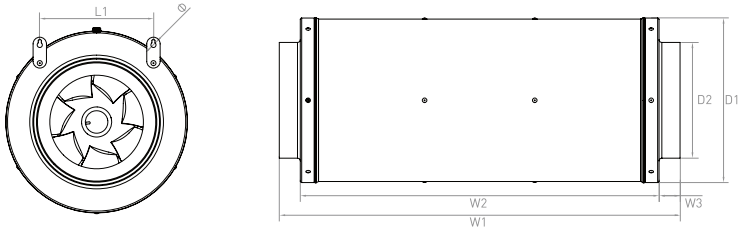
MODEL	DIMENSIONS (MM)
ECMF-100	
ECMF-125 ECMF-150 ECMF-200 ECMF-250 ECMF-315	

MODEL	L1	L2	H1	H2	D1	D2	W1	W2	W3	Ø
ECMF-100	162	145	148	23	Ø125	Ø98	159	60	20	10
ECMF-125	162	145	151	23	Ø127	Ø124	110	60	12	10
ECMF-150	180	164	176	23	Ø154	Ø150	125	70	15	10
ECMF-200	230	214	225	23	Ø204	Ø200	160	80	30	10
ECMF-250	290	270	277	23	Ø254	Ø250	200	100	30	10
ECMF-315	360	336	256	40	Ø317	Ø313	290	164	38	9

5.4 FAN SPECIFICATIONS. ECMF-S MODELS

MODEL NUMBER / SKU	RATED VOLTAGE	MAX POWER CONSUMPTION	FREQUENCY	MAX SPEED	MAX AIRFLOW	MAX STATIC PRESSURE	MAX NOISE LEVEL
ECMF-150-S	110-240 VAC	36 W	50/60 Hz	5000 RPM	288 CFM / 489 M^3H	1.59"W.G. / 396 Pa	50 dBa
ECMF-200-S	110-240 VAC	74 W	50/60 Hz	3800 RPM	569 CFM / 966 M^3H	1.66"W.G. / 412 Pa	51 dBa
ECMF-250-S	110-240 VAC	126 W	50/60 Hz	3200 RPM	946 CFM / 1607 M^3H	1.65"W.G. / 410 Pa	53 dBa
ECMF-315-S	110-120 VAC	268 W	50/60 Hz	2800 RPM	1662 CFM / 2823 M^3H	1.86"W.G. / 463 Pa	60 dBa

5.5 DIMENSIONS IN MM. ECMF-S MODELS

MODEL	DIMENSIONS (MM)
ECMF-150-S	
ECMF-200-S	
ECMF-250-S	
ECMF-315-S	

MODEL NUMBER / SKU	L1	D1	D2	W1	W2	W3	Ø
ECMF-150-S	123	Ø243	Ø148	547	469	39	10
ECMF-200-S	174	Ø304	Ø198	699	619	40	10
ECMF-250-S	221	Ø353	Ø248	859	769	45	10
ECMF-315-S	268	Ø415	Ø313	940	847	46	10

6.1 FAN MAINTENANCE

- Use a damp cloth to remove dust and any debris build up from fan components every 6-12 months
- To avoid mechanical damage, do not apply pressure to the fan blades.

7.1 WARRANTY

ECMF series fans are covered by a 2 year warranty from the date of purchase against any defects in workmanship or materials. Under warranty, the fan will be either replaced or repaired and must be accompanied by proof of purchase. The warranty doesn't apply to any damage caused by excess heat or humidity, misuse in harsh industrial environments, physical damage or normal wear and tear of the unit.

8.1 TERRABLOOM ACCESSORIES FOR USE WITH ECMF FANS

(PRODUCTS SOLD SEPARATELY)

CARBON FILTERS

Odor, airborne debris and dust filtration in indoor growing applications.

LIGHTPROOF FLEXIBLE AIR DUCTING

Quick and easy way to connect your ventilation equipment.

SMART SPEED CONTROLLER

Manage speeds of up to 4 TerraBloom EC fans simultaneously. Supports manual and programmable auto modes. Comes with thermal probe for accurate monitoring of the surrounding environment.

WIRELESS REMOTE WITH RECEIVER

Allows you to control your TerraBloom EC fan wirelessly. 6 pre-set speed levels (15-100% output). 50ft signal range, which works through walls, floors and ceilings. Ideal for fans installed in hard to reach places.