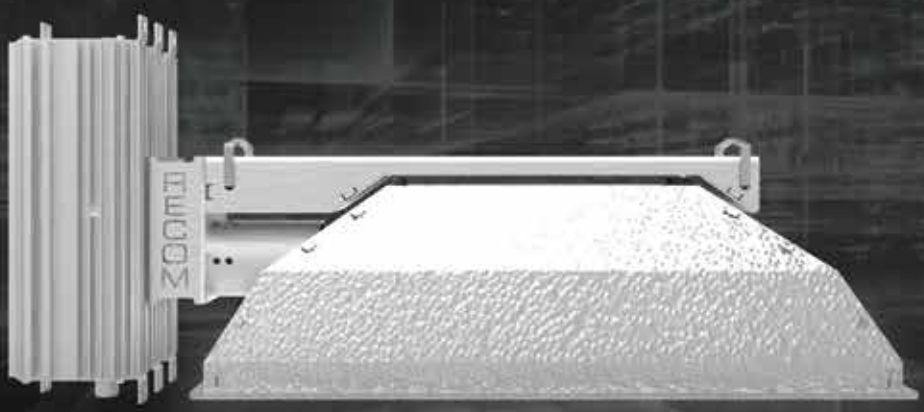
LUCIUS RECOM

CMH 315W KIT



INSTRUCTION MANUAL

INTRODUCTION

THANK YOU FOR PURCHASING YOUR LUCIUS RECOM CMH 315W KIT.

Lucius ReCom CMH Kits are designed to efficiently and effectively provide optimum levels of horticultural light.

All Lucius ReCom Kits can be controlled manually via the control knob or by the Lucius Light Management Controller (LMC). Dimming function for up to 200 Lucius Ballast, ON or OFF ballast timing on multiple zones is all controlled remotely with one LMC. The Lucius Light Management Controller is sold separately and includes many features described in the Lucius Light Management Controller instruction manual.

The Lucius ReCom CMH 315W Ballast is equipped with safety features, that protect against overloading, short circuit, over temperature, over and under voltage protection and more. With a peak efficiency of 93% the Lucius ReCom CMH 315W Ballast is the most efficient and powerful CMH Ballast on the market. It complies with international standard IEC and meets EMI / EMS requirements.

The Lucius ReCom Kit comes preassembled, tested and approved by internal and external QC departments.

Lucius ReCom products are the ideal option for Remote or Combo application and compatible with all other reflectors and ballast.

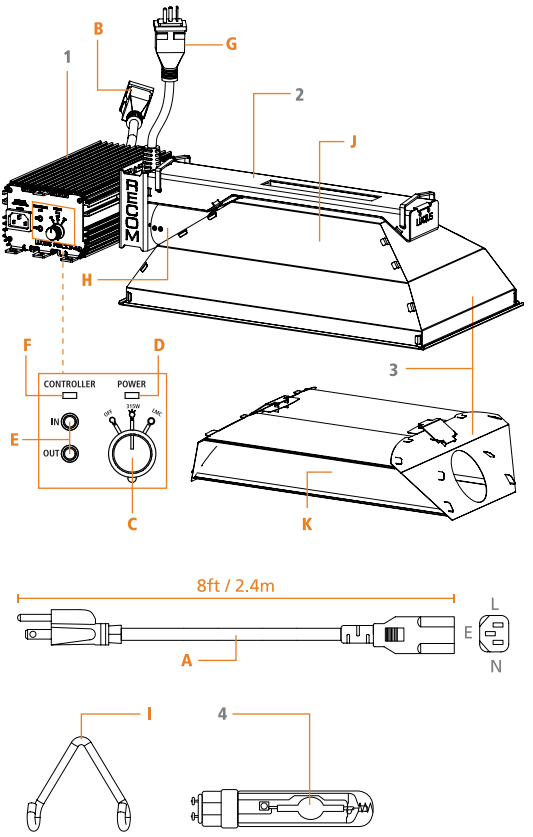
All options are interchangeable with a smart locking system and without tools.

Lucius Reflectors use the new MAG-ATTACH system, fixing and releases reflectors with ease. Using a magnetic field with built-in thermal insulators to reduce the heat transfer into the ballast and increasing life span of equipment. This prevents the fixture acting like a heat sink and decreasing the bulbs burning temperature. This allows the ceramic arc tube to burn brighter, producing greater light output and efficiency.

Best feature is the easy reflector replacement and tools not necessary.

Please read and hang on to this instruction manual, to help in reducing the risk of damage to the fixture, to yourself or others. Use the fixture only as outlined in this manual.

1. CONTENTS



2. SPECIFICATION

General product information

Product Name	Lucius ReCom CMH 315W Kit
Application	Horticultural Industry. Ideal for the entire plants cycle.
Inclusion	Lucius Recom CMH 315W Ballast - Recom CMH Bracket - Focal & or Broad Reflector SE - Indoor Sun Lamp
Light Kit PPF Efficacy	1.57 PPF/W
Maximum PPF	550 µmol/s
Light Kit Weight	USA: 4.2Kg / 8.8 lbs AU/NZ, UK, EU, Asia: 3.4Kg / 7.5 lbs
Operating Temperature	-20 to +40°C / -4° to z104°F
Shipping and Storage Temperature	-40 to +70°C / -40° to 158°F
Operating Humidity	0% to 90% non-condensing
Waterproof and dustproof	IP20

Lucius ReCom CMH 315W Ballast

INPUT	**Nominal Voltage**	USA: 120/208/240V AU/NZ, UK, EU, Asia: 220/230/240V
	Voltage Range	USA: 110~265V AU/NZ , UK, EU, Asia: 215~265V
	Max Current	USA: 3A AU/NZ , UK, EU, Asia:1.5A
	Inrush Current / Input Frequency	Inrush < 15A/0.8mSec 50/60 Hz
	Efficiency	93%
	Power Factor	≥ 0.97
	THDv	<10%
	Plug	 AU/NZS 4417 · US 120V NEMA 5-15 · UK BS1363A · EU DIN 49441
	Cable	USA: 8ft, 3×16AWG AU/NZ, UK, EU, Asia: 2.4m, 3×1.5mm² *All input cables are equipped with the magnet ring to meet EMC requirements.
PROTECTION	**Over-voltage**	Protection mode is activated when the voltage is greater than 275V.
	Under-voltage	**240V:** Under-voltage between 175 ~ 195V leads to 90% output power drop. Protection mode is activated when the voltage is less than 175V. **120V:** Under-voltage between 95 ~ 110V leads to 90% output power drop. Protection mode is activated when the voltage is less than 95V.
	Short Circuit	When the output is shorted, the ballast will be shut down & the LED will alarm error for short circuit protection. See **LED Status**. To reset the ballast error, disconnect and reconnect the power.
	Open Circuit	When the output is disconnected for any reason during operation, the ballast will shut down & the LED will alarm error for open circuit protection. See **LED Status**. To reset the ballast error, disconnect and reconnect the power.
	Over-temperature	When ambient temperature (Ta) is more than 40°C, the ballast will shut down & the LED will alarm error for high temperature protection. To reset the ballast error, keep the ambient temperature in the allowed operating range, disconnect & reconnect the power.
	Lamp END of Life / Rectification	The ballast can protect against end of lamp life rectification.
	Time Delay	All ballasts have built in ignition delay (0-6S randomly) to reduce the starting current.
	LED Status	ON: Power is applied and the ballast is operating. (LED illuminated) OFF: Power is not available at the input. (LED off) Blinking: Protection Mode.

OUTPUT	**Output Frequency**	> 120Hz Square Wave 
	Voltage Range	<120V
	Max Ignition	5KV
	Ignition Interval	**1-5-5-5-5 minute** *After 5 ignition failed attempts to turn the lamp on, the ballast will be shut down and the LED will alarm error. See **LED Status**. To reset the ballast error, disconnect and reconnect the power.
	Plug	 AU/NZS 3112 · US BAASR · UK & EU IEC 60320 C-13
	Cable	USA: 8in, 3×16AWG AU/NZ, UK, EU, Asia: 0.2m, 3×1.5mm² *All output cables are equipped with the magnet ring to meet EMC requirements.
GENERAL INFORMATION	**Control Knob**	OFF - 315W - LMC
	Controller (Optional)	Able to connect to the Lucius Light Management Controller. Dimming, timing, temperature setting, simulating sunset and sunrise. See Lucius Light Management Controller instruction manualfor more details.
	Ballast Dimension LxWxH	USA: 286x117x82.5mm AU/NZ, UK, EU, Asia : 246x117x82.5mm
	Ballast Weight	USA: 3.2Kg / 7 lbs AU/NZ, UK, EU, Asia: 2.4Kg / 5.3 lbs
	Compatible Lamp	CMH 315W
	Certification	
	Regulatory Standards	IEC 61347-1:2007+A1:2010 (also as used AS/NZS 61347.1:2002) IEC 61347-2-12:2005+A1:2011 EN 55015(AS/NZS CISPR 15:2011) IEC 61000
	Manufacturing Code	AU/NZ: LRCE-315241-C1CHA US: LRCE-31512241-C1C5S UK: LRCE-315231-C1CHK EU: LRCE-315231-C1CHE

Indoor Sun CMH 315W

Colour Temperature (CT)	3200K	4200K
Application	Entire plant life cycle + superior flowering	Entire plant life cycle + superior vegetative growth
Lamp Voltage	110	110
Max PPF	550 µmol/s	535 µmol/s
Lamp PPF Efficacy	1.72 PPF/W	1.66 PPF/W
Lumen	34500	32000
CRI	87%	97%
Base / operating position	PGZ18 / Horizontal (H) ±45°	PGZ18 / Horizontal (H) ±45°
Dimension (L x Dia)	193x38mm	193x38mm
Manufacturing Code	CMH315/H/T38/PGZ18/3.2K/PRO	CMH315/H/T38/PGZ18/4.2K/PRO

Fixture

REFLECTOR			
	Type	FOCAL SE	BROAD SE
	Material	Stucco Aluminium Miro® 4	
	Reflectivity	95%	
	Application	Best choice for the professional gardeners Focal light concentration Highest average affective light Increased light penetration deep into plant canopy, ideal for high ceiling	Low ceiling preferred option Hanging close to the plant canopy Low bay / Wide spread Vented reflector reduce heat over plant
	Compatible Lamps	CMH 315W HPS SE 250W / 400W / 600W MH 400W / 600W	CMH 315W HPS SE 250W / 400W / 600W MH 400W / 600W
	Manufacturing Code	LF-F	LF-B

RECOM SE BRACKET		
	Lamp Holder	PGZ18
	Plug	 AU/NZS 3112  US BAASR  UK & EU IEC 60320 C-14
	Cable	USA: 6 in , 3×16AWG AU/NZ, UK, EU, Asia: 0.15m
	Manufacturing Code	AU : LRCF-CA US : LRCF-CS UK : LRCF-CK EU : LRCF-CE

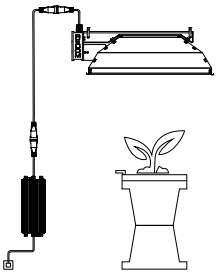
3. SAFETY PRECAUTIONS & WARNINGS

- The lamp and reflector can reach very high temperatures. Do not touch during or immediately after use. Allow sufficient time before touching the lamp or reflector after use.
- Do not hold and carry any of the products by the power cords, or pull the power cord with excessive force.
- Do not use the fixture outside the rated temperature range or outside the rated voltage range.
- Do not attempt to disassemble, repair, or modify the fixture.
- Never power on the ballast without the lamp connected.
- Do not use any of the products if any damage is present.
- Do not turn the ballast on and off rapidly, as this can cause damage to the ballast and the lamp.
- This product complies with all necessary radio interference regulations; however, there may still be a radio interference effect on sensitive equipment.
- This ballast should not be installed near maritime safety communications equipment or other critical navigation or communication equipment operating between 9kHz – 1GHz. Relocate the ballast should any interference occur.
- Avoid coiled cords. Coiled cords may lead to electromagnetic interference.
- Never stack ballasts. Operating ambient temperature of the ballast is -20 to 40°C (-4 to 104°F). By providing the ballast with ambient air temperature of less than 30°C (86°F), it can work more efficiently and avoid any damage.
- Before installation of the ballast, lamp & reflector, ensure the light kit is disconnected from any power and controller.
- Do not position the fixture in the following locations:
  - *Locations subject to direct water exposure*
  - *Locations subject to direct vibration or shock*
  - *Locations subject to excessive dust*
  - *Locations subject to direct sunlight*
  - *Locations subject to condensation or icing*
  - *Locations subject to corrosive or explosive gases*
  - *Locations subject to strong static electricity or harmonics*

4. ReCom KIT INSTALLATION

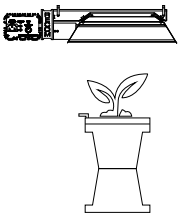
Lucius ReCom products are the ideal option for Remote or Combo application and compatible with all other reflectors and ballast. The Lucius ReCom CMH 315W Kit can be installed in several options. All options are interchangeable with a smart locking system and without tools.

Note: *The maximum distance between the ballast and reflector must not exceed 16m.*



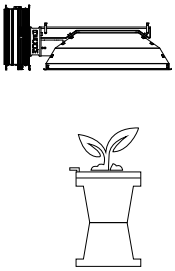
REMOTE

Placing ballast in ideal environment and close to power supply, decreases heat in grow room. Ballast remote fixing allows various mounting positions keeping reflector mobile.



HORIZONTAL COMBO

Ideal for low ceiling, wide spread and hanging close to plant canopy. The kit comes supplied in the horizontal combo.

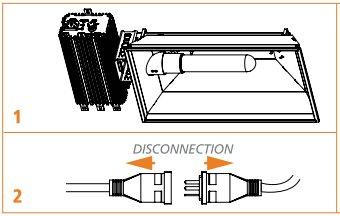


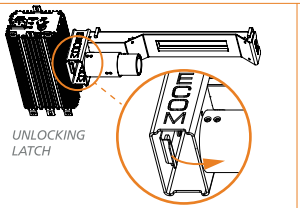
VERTICAL COMBO

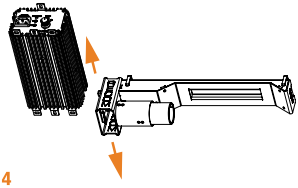
Vertical orientation is ideal for higher ceilings and provides easier access to the control knob.

To separate the fixture from the ballast:

1. Ensure the light kit is disconnected from any power and controller.
2. Disconnect ballast output plug from reflector input cable.
3. Lift the unlocking latch inside the bracket box.
4. Slide reflector bracket out from ballast "T" slot/s.



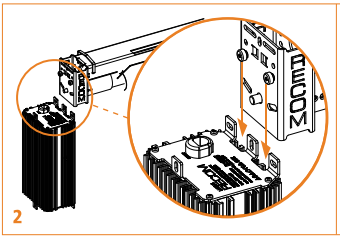


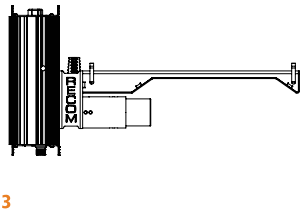


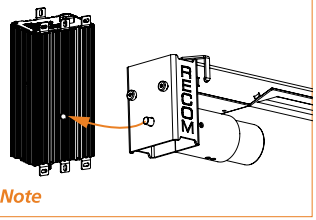
To connect the fixture to the ballast:

1. Change ballast position to desired orientation.
2. Align bracket locators with ballast "T" slot/s.
3. Lift the unlocking latch and slide into position.

Note: *If locking pin does not recess securely in ballast locking slot, the reflector bracket is NOT fixed securely and should be adjusted to fit correctly. Ensure locking pin drops into the locking slot of the ballast.*

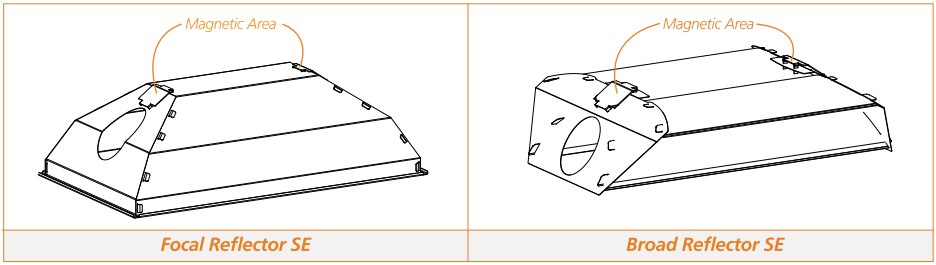






5. REFLECTOR INSTALLATION

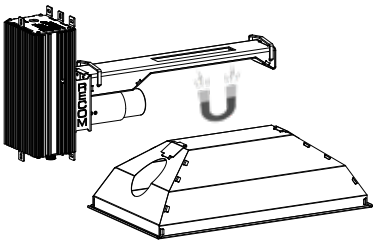
ReCom Reflectors have a magnetic area which connects to the ReCom Fixture Bracket making it the easiest installation ever.



Focal Reflector SE | *Broad Reflector SE*

→ To install the Reflector:

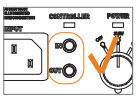
1. Ensure the Lucius Recom Kit is disconnected from the power and controller, if the lamp is connected, remove the lamp.
2. Place the reflector on the bracket and:
   - Ensure the openings on the reflector align with lamp holders on the bracket.
   - Align the magnetic area of bracket and reflector.
3. Remove the reflector by simply pulling it away from the bracket.



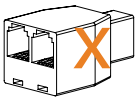
6. ELECTRICAL CONNECTIONS

→ Before operation, ensure all electrical connections are secure.

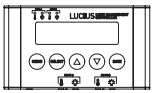
1. Switch off main power.
2. Ensure the lamp is properly installed. Never use the fixture without a lamp or reflector.
3. Ensure the reflector cable plug in firmly connected to the ballast output plug.
4. Lucius Light Management Controller connections (if applicable):
   - *Connect the Lucius Light Management Controller to the Input AUX port of the ballast via the controller Jumper Cable (Signal Wire) .*
   - *Using the Jumper Cable, connect the output AUX port of the first ballast to the input AUX port of the second ballast and repeat this process to connect up to 100 ballasts per controller port x 2 zones (Total 200 ballasts).*
5. Ensure the power cord and the controller cable does not touch the reflector.
6. Connect the ballast input cable to the power outlet. Ensure power is off.
7. If external switch gear is used to supply power to fixture, ensure it can cope with the inrush current of the fixture (see ballast specifications). Never use household timers to switch the fixture.
8. Always use an electrical contractor to ensure wiring can support the voltage and current requirements of the fixture.



Ballast input view



No splitter needed



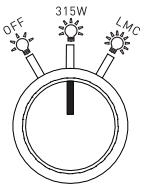
(See Lucius Light Management Controller Instruction Manual for more details.)

7. START UP

The Lucius ReCom 315W CMH Kit can be operated via 2 methods.

After installing the light kit (ballast, bracket, reflector and lamp) and ensuring the electrical connections are secure:

→ 7.1 Using the external timer box



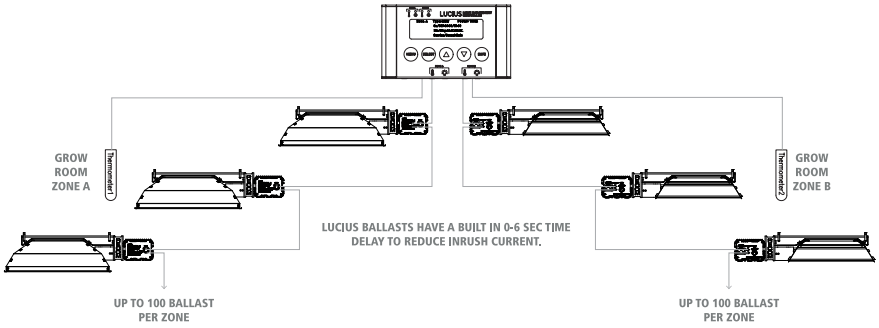
7.1.1 Set the control knob to the rated power "315W".

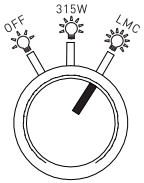
7.1.2 Consider all safety factors located in section **3** of this manual and lamp safety factors located on the lamp sleeve.

7.1.3 Switch on the main power.

Note: *All Lucius Recom Ballasts are equipped with ignition time delay to reduce the total inrush current. As a result, there is a small delay before the lamp ignites.*

→ 7.2 Using the Lucius Light Management Controller (LMC)

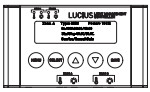




7.2.1 Switch off the main power of the ballast. Turn the control knob to the "LMC" option.

7.2.2 Connect the LMC power adaptor to the separate power supply and turn the LMC on. Adjust all LMC settings (ballast selection, dimming, timing, temperature settings, etc.) Follow instructions on the LMC instruction manualand set the power to the 315 or 100%.

7.2.3 Follow section **6.4** on this manual to ensure about signal wire connections.



7.2.4 Switch on the main power. The controller LED on the ballast will turn on when the connection is successful and the ballast is fully controlled by the LMC.

Note: *You will need to connect the ballast input plug to the power supply or a distribution box.*

You can also turn the control knob to the "LMC" during the ballast operation and use the LMC.

8. GENERAL MAINTENANCE

Disconnect the product from all power before performing any maintenance. Regularly check the fixture for dust or dirt build-up. Dust, dirt, and fingerprint on the lamp, reflector and ballast may cause overheating and decreased performance.

- Clean the lamp regularly with a soft, dry,and clean cloth.
- Clean the ballast and outside of the fixture using a dry or damp cloth.
- The lamp should be replaced every 5000 lighting hours or after 1 year's operation.
- Lucius recommends replacement of reflector after 5000 lighting hours to maintain maximum reflectivity. Depending on environment and lamp type the reflector will degrade. The Miro® aluminium cannot be cleaned without damage, therefore it is recommended that reflectors are changed once every year.
- Do not clean the fixture with detergents, abrasives, or other aggressive substances. Do not touch the inside of the reflector during installation and do not use water to clean it. This will damage the reflective coating on the surface.
- Allow sufficient time before connecting the light kit to the power supply after maintenance work has been conducted.
- Regularly check the wiring of the product to ensure it is undamaged.

Note: *Before initial use, the lamp may have a black mark on the arc tube. Do not be concerned! This shows the light kit has been tested prior to packaging. This will disappear when the lamp runs at full power.*

9. STORAGE AND DISPOSAL

- Store the fixture in a dry and clean environment, with an ambient temperature of -40 to 70°C / -40 to 158°F.
- The product must not be discarded as unsorted municipal waste, but must be collected separately for the purpose of treatment, recovery, and environmentally sound disposal.
- The lamps are chemical hazardous waste (mercury) and must be delivered to the designated authorities.

10. WARRANTY

Refer to warranty on packaging. Lucius is not liable and the warranty will be void under the following circumstances:

- Incorrect use of the product.
- Not adhering to the warnings established in this instruction manual.
- Improper storage and handling.
- Unauthorised modification of the product.
- Use of unauthorised accessories or parts with the product.
- Purchases from unauthorised retailers or dealers.

Contact the retailer where the product was originally purchased for warranty claims and further information.

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