# USERMANUAL

# i-1 LINEAR SERIES





Product Version 1.0 | Document Revision G | Released 2024-03-18

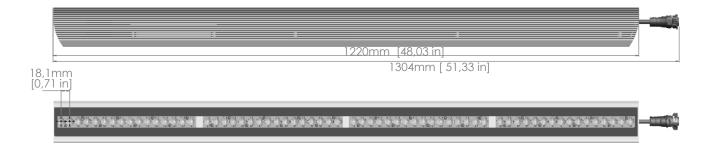
This manual covers installation, use, and maintenance of the SGM i-1 Linear. A digital version is available at www.sgmlight.com or upon request via support@sgmlight.com. The information in this document is subject to change without notice. SGM and all affiliated companies disclaim liability for any injury, damage, direct or indirect loss, consequential or economic loss, or any other loss occasioned by the use of, inability to use, or reliance on the information contained in this manual. The SGM logo, the SGM name, and all other trademarks in this document pertaining to SGM services or SGM products are trademarks owned or licensed by SGM, its affiliates, and subsidiaries. This edition applies to firmware version 2.23 or later.

English edition © 2023 SGM Light A/S®.

# **DIMENSIONS**

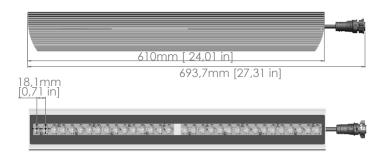
# i-1 LINEAR / I-1 LINEAR X- 4FT



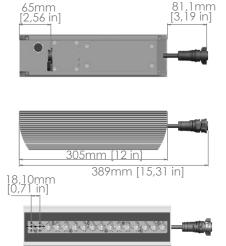


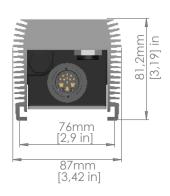
# i-1 LINEAR / I-1 LINEAR X - 2FT





# i-1 LINEAR / I-1 LINEAR X - 1FT





All dimensions in millimeters and inches. Drawing not to scale

# CONTENT

# 2 DIMENSIONS

- 2 i-1 Linear / i-1 Linear X-4ft
- 2 i-1 Linear / i-1 Linear X 2ft
- 2 i-1 Linear / i-1 Linear X 1ft

# **4 SAFETY INFORMATION**

# 5 BEFORE INSTALLING THIS PRODUCT

# **6 OVERVIEW**

6 i-1 variants

# 7 UNPACKING AND PREPARING FOR INSTALLATION

- 7 Unpacking
- 7 Application considerations
- 7 Power Capacities
- 7 Control

# **8 INSTALLATION**

# 9 BRACKET INSTALLATION

- 9 Adjustable Wall Mount (Short & Long)
- 10 Adjustable Wall Mount (Short & Long) Cont.
- 11 Surface Mount
- 12 Surface Mount Cont

# 13 SPACING AND MOUNTING

# 14 POWER AND SYSTEM DESIGN

14 Power

# 25 CABLE, TERMINATION, AND INSTALLATION

25 Data

# **26 CONFIGURATION**

- 27 Using the Configuration Software
- 28 Factory Default
- 29 RDM

# **30 ACCESSORIES**

30 Anti Glare Shields

# 31 MAINTENANCE

31 Firmware Updates

# 31 CLEANING

- **32 SUPPORT HOTLINE**
- 32 APPROVALS AND CERTIFICATIONS
- 33 USER NOTES



# WARNING! READ THE FOLLOWING SAFETY PRECAUTIONS CAREFULLY BE-FORE UNPACKING, INSTALLING, POWERING OR OPERATING THE DEVICE.



SGM fixtures are intended for professional use only. They are not suitable for household use.

Les fixtures SGM sont impropre à l'usage domestique. Uniquement à usage professionnel.

This product must be installed in accordance with the applicable installation code by a person familiar with the construction and operation of the product and the hazards involved.

Ce produit doit être installé selon le code d'installation pertinent, par une personne qui connaît bien le produit et son fonctionnement ainsi que les risques inhérent.



# DANGER! RISK OF ELECTRIC SHOCK DO NOT OPEN THE DEVICE!

- · Do not open the device; there are no user-serviceable parts inside.
- · Disconnect power before installing or servicing to avoid electrical shock.
- Ensure that the device is electrically connected to earth (ground).
- · Do not apply power if the device or mains cable is in any way damaged.
- · Do not immerse the fixture in water or liquid



# WARNING! TAKE MEASURES TO PREVENT BURNS AND FIRE!

- · Install in a location that prevents accidental contact with the device.
- · Install only in a well-ventilated space.
- · Install only in accordance with applicable building codes.
- · Do not paint, cover, or modify the device, and do not filter or mask the light.
- · Keep all flammable materials well away from the device.

ALLOW THE DEVICE TO COOL FOR 15 MINUTES AFTER OPERATION BEFORE TOUCHING IT CAUTION: EXTERIOR SURFACE TEMPERATURE AFTER 5 MIN. OPERATION =  $29^{\circ}$ C ( $84^{\circ}$ F). STEADY STATE =  $51^{\circ}$ C ( $124^{\circ}$ F).



# WARNING! TAKE MEASURES TO PREVENT PERSONAL INJURY. DO NOT LOOK DIRECTLY AT THE LIGHT SOURCE FROM CLOSE RANGE.

- $\cdot$  Take precautions when working at height to prevent injury due to falls.
- For Permanent Outdoor Installations (POI), ensure that the fixture is securely fastened to a load-bearing surface with suitable corrosion-resistant hardware.
- · Always comply with relevant load dimensioning, safety standards, and requirements.

# BEFORE INSTALLING THIS PRODUCT

Please visit the SGM official website at www.sgmlight.com for the latest version of this user manual/safety information leaflet. Due to continuous improvements, the instructions may change without notice. SGM always recommends the latest available firmware version from www.sgmlight.com.



# **VISUAL INSPECTION**

All users of the SGM fixtures should regularly clean those parts of the fixture directly exposed to the elements, such as the external housing and front lenses. Additionally, all owners of the SGM fixtures must periodically check the external housing of the fixture for structural breaks, deterioration, cracked lenses, or loose screws. To ensure proper operation, but also to prevent the risk of potential accidents, do not use the fixture if the lens, housing, or power cables are damaged. If parts of the fixture appear to be missing, cease use immediately and contact SGM support.



### WIRING

When installing fixtures in a permanent installation, ensure power and data cable leads are installed as a service loop to an appropriately rated junction box using suitable cable strain reliefs/glands. All installed fixtures must be securely mounted, and service loop appropriately protected for installation location. All electrical wiring and connections should be completed by a qualified electrician.

Separation of field installed power limited circuit (dimming/control) wiring from the branch circuit wiring in the outlet box are to be made in accordance with local and/or national electrical installation codes.



# **SAFETY PRECAUTIONS**

When using electrical equipment, basic safety precautions should always be followed including the following:

- · Do not mount near gas or electric heaters.
- Permanently installed equipment should be mounted in locations and at heights where it will not be readily subjected to tampering by unauthorized personnel.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
- · Do not use this equipment for other than intended use.
- · Refer service to qualified personnel or authorized service centers.
- · Do not look directly into the beam for long periods of time, when the fixture is on.
- The fixture shall, under no circumstance, be covered with insulating material of any kind.

# READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

# **OVERVIEW**

The i-1 Linear is a series of linear fixtures designed to provide even and powerful washes over various flat surfaces such as building facades. It is best thought of as a system including different fixture lengths, beam angles, LED engines and control protocols. i-1 is an exterior, IP66 rated product intended for permanent exterior surface mounting.



# PLEASE NOTE! i-1 LINEAR IS NOT RATED FOR IN-GROUND INSTALLATION.

# i-1 VARIANTS

SIZE
4 ft. (1220mm)
2 ft. / 610mm.
1 ft. / 305mm.
recommendation————————————————————————————————————

# **LED ARRAYS**

RGBW (4000K)

Tunable White (2700K-4000K)

# UNPACKING AND PREPARING FOR INSTALLATION

# **UNPACKING**

Before permanent mounting, ensure the fixture is not visibly damaged and that all parts and components are present. Testing the fixture for proper function is also recommended. During testing, configuration and addressing can be done. The i-1 Linear is an addressable product and is most efficiently configured **before final installation**. This is especially true in installations where the fixtures will be in inaccessible areas.

The I-1 Linear is configured with the i-1 L Configuration Tool. See i-1 Configuration Tool Setup later in this manual for details.

If the i-1 Linear is used with the Power & Data Manager, additional features and installation possibilities exist. See Use With Power & Data Manager later in this manual for details.

All software is PC based and available for download from the SGM website. Once all fixtures, parts and software are available, configuration and installation can begin.

# APPLICATION CONSIDERATIONS

- · It is situated away from public thoroughfares and protected from contact with people.
- · It is not immersed in water.
- · It has adequate ventilation

When using the fixture with a DMX controller, ensure that:

 According to RS485 standard, the DMX Out on the last fixture in line should be terminated with resistor end cap.

# **POWER CAPACITIES**

The total quantity of fixtures and cable able to be installed on a single power circuit is the sum of all components plugged together in an installation.

PLEASE NOTE! MAXIMUM FIXTURES WHICH CAN BE CONNECTED IN-LINE IS ALSO SUBJECT TO TOTAL POWER DRAW, CABLE LENGTH AND CONNECTION QUANTITIES. PLEASE CONTACT SGM LIGHT FOR MORE INFORMATION AND CALCULATIONS.

# CONTROL

The i-1 Linear is controlled directly with DMX 512/RDM (ANSI E1.20). This is compatible with a vast number of lighting controllers.

PLEASE NOTE! FIXTURES SHOULD BE PRE-SET WITH ANY CUSTOM CONFIGURATION AND PROGRAMMING BE-FORE INSTALLATION.

ALTHOUGH MOST FUNCTIONS ARE POSSIBLE TO BE SET VIA RDM ONCE MOUNTED IN POSITION, IT IS EASIER TO DO CONFIGURATION AND ANY TROUBLESHOOTING BEFORE MOUNTING IS COMPLETE.

# **INSTALLATION**

The i-1 Linear can be installed in any orientation, in any free-air cooled application. There are numerous mounting options via 3 adjustable brackets.

# **Surface Mount**



# **Short Wall Mount**



# Long Wall Mount

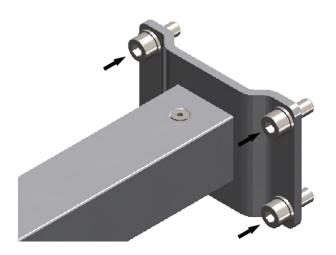


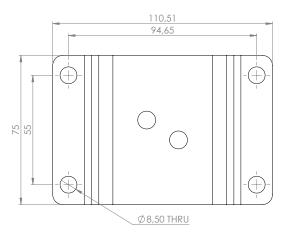
All brackets are designed to bolt together using one tool and use the i-1 Linear connection clamp.

# **BRACKET INSTALLATION**

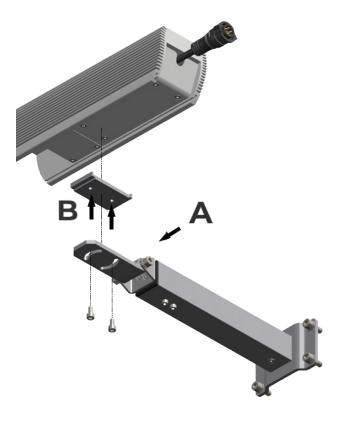
# ADJUSTABLE WALL MOUNT (SHORT & LONG)

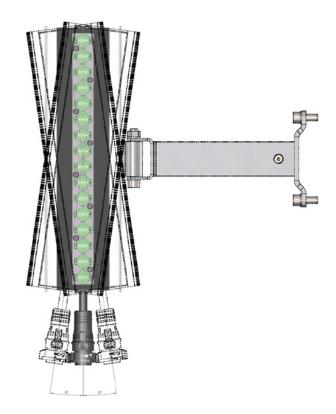
Step 1 - Attach arm to wall. Ensure arm is level in all axis. Alignment of arms at the desired height above ground or finished floor should be measured. Use corrosion resistant connection hardware suitable for exterior use. Maximum bolt size M8 or 5/16. Use a washer to avoid scraping the surface of the anodized finish.





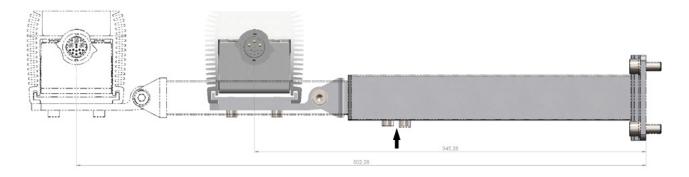
Step 2 - Use a 4mm hex driver to ensure the tilt lock bolt on the lower part of the fixture clamp is tight (Component A). Attach fixtures to adjustable arm using the i-1 Linear Mounting Clamp and supplied bolts (Component B). Slide the Mounting Clamp into the i-1 extrusion body to the desired position, then tighten slightly with a 4mm size hex driver. Align to the desired pivot angle. Available range is shown below. Tighten to 4.8 Nm torque and use a medium strength threadlocker. Two wall mounts must be used for 2 ft. and 4 ft. variants.



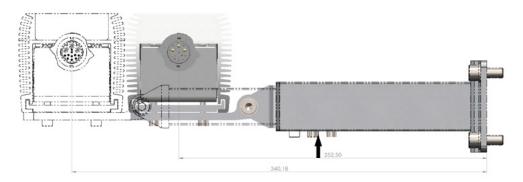


# ADJUSTABLE WALL MOUNT (SHORT & LONG) CONT.

Step 3 - Focusing the fixtures. Using the locking bolts under the arm, extend to desired set-back distance from the wall or surface. Set-back ranges are shown below. Tighten with a 4mm hex driver and use a medium strength threadlocker.

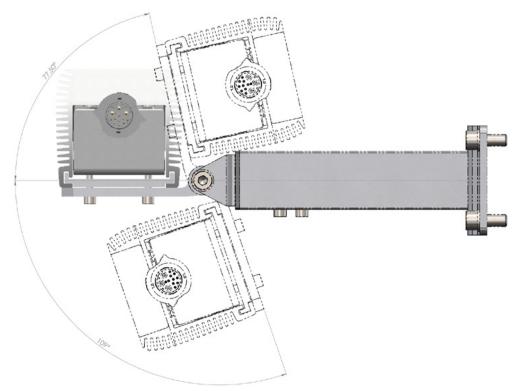


# Long Wall Mount



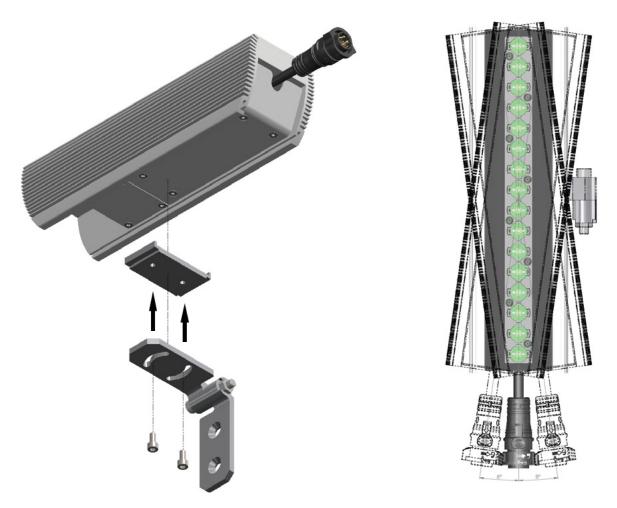
# **Short Wall Mount**

Step 4 - With the tilt lock bolt somewhat tight, rotate the fixture to the desired tilt angle. Then use a 4mm hex driver to lock the fixture in place. Available range is shown below.



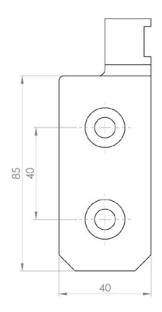
# SURFACE MOUNT

Step 1 - Attach surface mount to a fixture using the i-1 Linear Mounting Clamp and supplied bolts. Slide the Mounting Clamp into the i-1 extrusion body to the desired position, then tighten slightly with a 4mm size hex driver. Align to the desired pivot angle. Available range is shown below. Tighten to 4.8 Nm torque and use a medium strength threadlocker. Two surface mounts must be used for 2 ft. and 4 ft. variants. For these sizes, the Adjustable Surface Mount is supplied in pairs and has a left and right position for easier mounting.



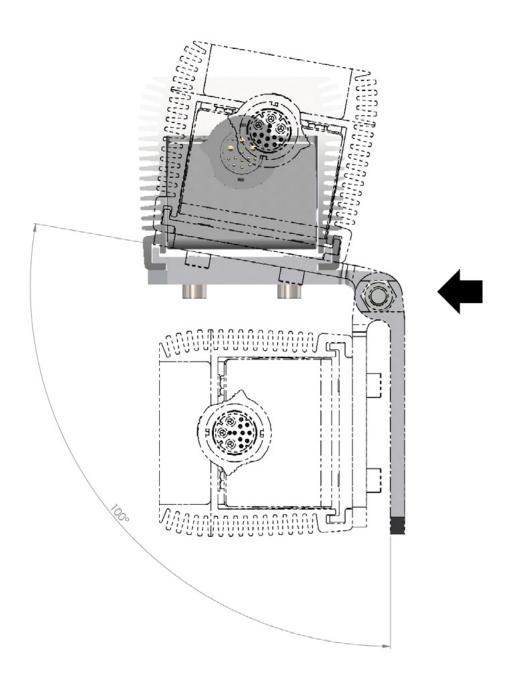
Step 2 - Attach surface mount to a surface using corrosion resistant connection hardware suitable for exterior use. Maximum bolt size M8 or 5/16. Must use hardware with countersunk heads.





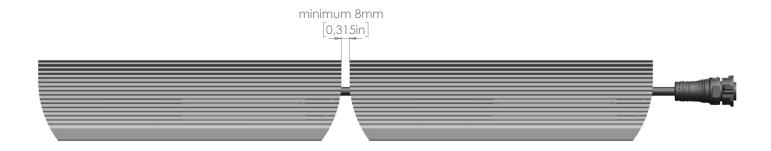
# SURFACE MOUNT CONT

Step 3 - With the tilt lock bolt somewhat tight, rotate the fixture to the desired tilt angle. Then use a 4mm hex driver to lock the fixture in place. Available range is shown below.

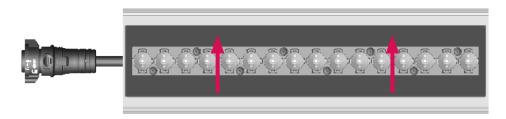


# **SPACING AND MOUNTING**

It is recommended to install one mount and fixture at a time to ensure fixtures can be placed close together and be plugged together as a new fixture is mounted to an adjacent fixture. A minimum spacing between fixtures of 8 mm (0,315 inches) must be maintained to ensure clearance for thermal expansion.



When using asymmetrical lenses, the default configuration has the cable input on left of the fixture or line of fixtures when looking at the surface to be illuminated.



Direction of asymmetrical lenses

# POWER AND SYSTEM DESIGN

i-l Linear uses a combined power and signal cable. This cable is intended to be terminated in an equipment enclosure or junction box. Cables with bare ends which can be cut to length or pre-terminated and connectorized cables will be available.

# **POWER**

Power input range is 100-277VAC 50/60 Hz. There is a maximum number of fixtures which can be connected in a line. This maximum is a function of the length of the cable and the number and size of fixtures combined. **Contact SGM Light customer care to determine maximum distances and fixture quantities.** 

Maximum power ratings are as follows:

i-1 Linear 1 ft.	i-1 Linear 2 ft.	i-1 Linear 4 ft.	i-1 Linear X 1 ft.	i-1 Linear X 2 ft.	i-1 Linear X 4 ft.
20W	40W	80W	35W	60W	115W

During configuration, it is possible to adjust each fixture to a lower power output. See configuration later in the manual.

On the facing and following pages are some sample calculations using variables for fixture quantity & size, cable quantity & size, along with breaker capacity & inrush trip curve.

A variable which has a large effect on the overall flexibility of the system is the short circuit current of the electrical supply. Always contact SGM to produce a tailored system design using this variable. If short circuit current is not known, use the lowest figure listed in the corresponding charts for estimates.

The Power & Data Manager accessory is included in the second set of calculation tables. This device expands the total system capacity by managing the electrical in-rush current of the connected load. Please refer the the SGM Light website at www.sgmlight.com for more information on the Power & Data Manager

PLEASE NOTE: ALWAYS CONTACT SGM LIGHT CUSTOMER CARE TO DETERMINE MAXIMUM DISTANCES AND FIXTURE QUANTITIES.

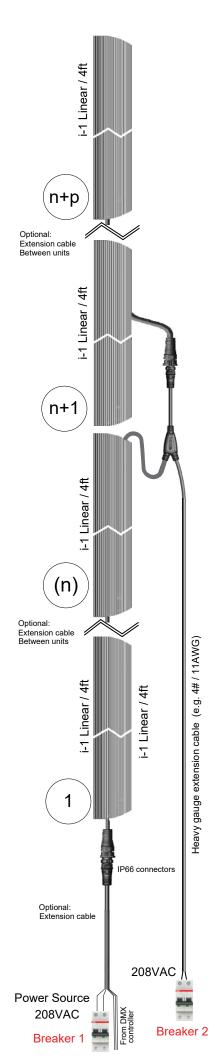
# i-1 Linear / 4ft n+p Optional: Extension cable Between units i-1 Linear / 4ft n+1 i-1 Linear / 4ft (n) Optional: Extension cable Between units Heavy gauge extension cable (e.g. 4# / 11AWG) i-1 Linear / 4ft i-1 Linear / 4ft 1 IP66 connectors Optional: Extension cable 120VAC Power Source 120VAC Breaker 2 Breaker 1

# 120VAC / 15A-WIRING EXAMPLE I-1 LINEAR X/ 4FT WITH POWER INSERTER (PI)

(n) Maxim	(**)						8	80W
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	type 15AC	r Breaker type 15AB		type 15AC	Breaker type 15AB
120 [V]	500 [A]	1 [m]	0 [m]	12	8		16	8
120[V]	1000 [A]	1 [m]	0 [m]	12	8		16	8
120[V]	500 [A]	10 [m]	0 [m]	12	8		12	8
120[V]	1000 [A]	10 [m]	0 [m]	12	8		16	8
120[V]	500 [A]	1 [m]	2,5 [m]	7	8		7	8
120[V]	1000 [A]	1 [m]	2,5 [m]	8	8		8	8
120[V]	500 [A]	10 [m]	2,5 [m]	4	8		4	8
120[V]	1000 [A]	10 [m]	2,5 [m]	6	8		6	8

PLEASE NOTE! IF BREAKER 2 IS LOCATED AT POWER INSERTER (AFTER THE HEAVY GAUGE CABLE), THE SECOND SECTION CAN HANDLE THE SAME NUMBER OF UNIT AS THE FIRST SECTION

(n) Maxim						8	80W
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breake type 15AC	r Breaker type 15AB	Breaker type 15AC	r Breaker type 15AB
120 [V]	500 [A]	1 [m]	0 [m]	11	8	12	8
120[V]	1000 [A]	1 [m]	0 [m]	11	8	16	8
120[V]	500 [A]	10 [m]	0 [m]	5	8	5	8
120[V]	1000 [A]	10 [m]	0 [m]	9	8	9	8
120[V]	500 [A]	1 [m]	2,5 [m]	4	8	4	8
120[V]	1000 [A]	1 [m]	2,5 [m]	6	8	6	8
120[V]	500 [A]	10 [m]	2,5 [m]	2	8	2	8
120[V]	1000 [A]	10 [m]	2,5 [m]	3	8	3	8



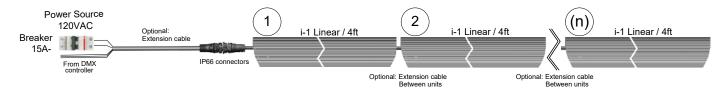
# 208VAC / 15A-WIRING EXAMPLE I-1 LINEAR X/ 4FT WITH POWER INSERTER (PI)

(n) Maxim	um number of	units on a Br	eaker 1line	11	15W	8	0W
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breaker type 15AC	Breaker type 15AB	Breaker type 15AC	Breaker type 15AB
208 [V]	250 [A]	1 [m]	0 [m]	9	4	9	4
208 [V]	1000 [A]	1 [m]	0 [m]	9	4	9	4
208 [V]	250 [A]	10 [m]	0 [m]	9	4	9	4
208 [V]	1000 [A]	10 [m]	0 [m]	9	4	9	4
208 [V]	250 [A]	1 [m]	2,5 [m]	7	4	7	4
208 [V]	1000 [A]	1 [m]	2,5 [m]	9	4	9	4
208 [V]	250 [A]	10 [m]	2,5 [m]	5	4	5	4
208 [V]	1000 [A]	10 [m]	2,5 [m]	9	4	9	4

PLEASE NOTE! IF BREAKER 2 IS LOCATED AT POWER INSERTER (AFTER THE HEAVY GAUGE CABLE), THE SECOND SECTION CAN HANDLE THE SAME NUMBER OF UNIT AS THE FIRST SECTION

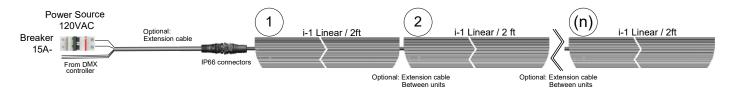
(p) Maximu	um number of	eaker 2 line	115	W	80	W	
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Fuse and 1. unit	Cable between each unit	Fuse type 15AC	Fuse type 15AB	Fuse type 15AC	Fuse type 15AB
208 [V]	250 [A]	1 [m]	0 [m]	9	4	9	4
208 [V]	1000 [A]	1 [m]	0 [m]	9	4	9	4
208 [V]	250 [A]	10 [m]	0 [m]	5	4	5	4
208 [V]	1000 [A]	10 [m]	0 [m]	9	4	9	4
208 [V]	250 [A]	1 [m]	2,5 [m]	4	4	4	4
208 [V]	1000 [A]	1 [m]	2,5 [m]	9	4	9	4
208 [V]	250 [A]	10 [m]	2,5 [m]	2	4	2	4
208 [V]	1000 [A]	10 [m]	2,5 [m]	9	4	9	4

# 120VAC / 15A - WIRING EXAMPLE I-1 LINEAR X / 4FT



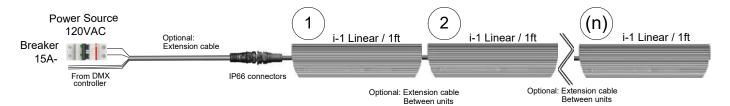
(n) Maxim	\ /						8	30W
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breaker type 15AC	r Breaker type 15AB		type 15AC	Breaker type 15AB
120 [V]	500 [A]	1 [m]	0 [m]	12	8		16	8
120[V]	1000 [A]	1 [m]	0 [m]	12	8		16	8
120[V]	500 [A]	10 [m]	0 [m]	12	8		12	8
120[V]	1000 [A]	10 [m]	0 [m]	12	8		16	8
120[V]	500 [A]	1 [m]	2,5 [m]	7	8		7	8
120[V]	1000 [A]	1 [m]	2,5 [m]	8	8		8	8
120[V]	500 [A]	10 [m]	2,5 [m]	4	8		4	8
120[V]	1000 [A]	10 [m]	2,5 [m]	6	8		6	8

# 120VAC / 15A - WIRING EXAMPLE I-1 LINEAR X / 2FT



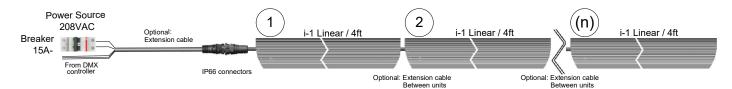
(n) Maxim	,						4	WO
Power Source	Power Source	Cable	Cable	Breake	r Breaker		Breaker	Breaker
nominal voltage	Shortcircuit	between	between	type	type		type	type
	current	Breaker and 1. unit	each unit	15AC	15AB		15AC	15AB
120 [V]	500 [A]	1 [m]	0 [m]	24	16		24	16
120[V]	1000 [A]	1 [m]	0 [m]	24	16		24	16
120[V]	500 [A]	10 [m]	0 [m]	23	16		23	16
120[V]	1000 [A]	10 [m]	0 [m]	23	16		23	16
120[V]	500 [A]	1 [m]	2,5 [m]	8	16		8	16
120[V]	1000 [A]	1 [m]	2,5 [m]	10	16		10	16
120[V]	500 [A]	10 [m]	2,5 [m]	5	16		5	16
120[V]	1000 [A]	10 [m]	2,5 [m]	7	16		7	16

# 120VAC / 15A - WIRING EXAMPLE I-1 LINEAR X / 1FT



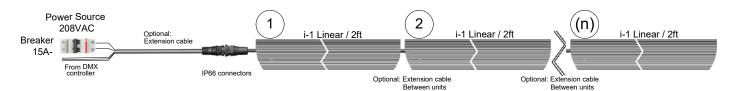
(n) Maxim	um number of	aker line	:	30W		20W	
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breaker type 15AC	r Breaker type 15AB	Breake type 15AC	r Breaker type 15AB
120 [V]	500 [A]	1 [m]	0 [m]	24	16	24	16
120[V]	1000 [A]	1 [m]	0 [m]	24	16	24	16
120[V]	500 [A]	10 [m]	0 [m]	24	16	21	16
120[V]	1000 [A]	10 [m]	0 [m]	24	16	24	16
120[V]	500 [A]	1 [m]	2,5 [m]	9	16	9	16
120[V]	1000 [A]	1 [m]	2,5 [m]	11	16	11	16
120[V]	500 [A]	10 [m]	2,5 [m]	6	16	6	16
120[V]	1000 [A]	10 [m]	2,5 [m]	8	16	8	16

# 208VAC / 15A - WIRING EXAMPLE I-1 LINEAR X / 4FT



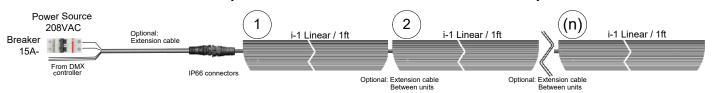
(n) Maxim	um number of u	units on a Brea	ker line	115W	80W
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breaker Breaker type type 15AC 15AB	Breaker Breaker type type 15AC 15AB
208 [V] 208 [V] 208 [V] 208 [V]	250 [A] 1000 [A] 250 [A] 1000 [A]	1 [m] 1 [m] 10 [m] 10 [m]	0 [m] 0 [m] 0 [m] 0 [m]	9 4 9 4 9 4 9 4 7 4	9 4 9 4 9 4 9 4 7 4
208 [V] 208 [V] 208 [V] 208 [V]	250 [A] 1000 [A] 250 [A] 1000 [A]	1 [m] 1 [m] 10 [m] 10 [m]	2,5 [m] 2,5 [m] 2,5 [m] 2,5 [m]	9 4 5 4 9 4	9 4 5 4 9 4

# 208VAC / 15A - WIRING EXAMPLE I-1 LINEAR X / 2FT



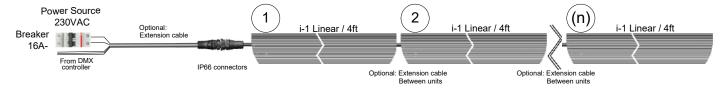
(n) Maximi	um number of เ	units on a Brea	ker line	5	8W	4	-0W
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breake type 15AC	r Breaker type 15AB	Breake type 15AC	type 15AB
208 [V]	250 [A]	1 [m]	0 [m]	14	8	14	8
208 [V]	1000 [A]	1 [m]	0 [m]	14	8	14	8
208 [V]	250 [A]	10 [m]	0 [m]	14	8	14	8
208 [V]	1000 [A]	10 [m]	0 [m]	14	8	14	8
208 [V]	250 [A]	1 [m]	2,5 [m]	8	8	8	8
208 [V]	1000 [A]	1 [m]	2,5 [m]	12	8	12	8
208 [V]	250 [A]	10 [m]	2,5 [m]	6	8	6	8
208 [V]	1000 [A]	10 [m]	2,5 [m]	14	8	14	8

# 208VAC / 15A- WIRING EXAMPLE I-1 LINEAR X / 1FT



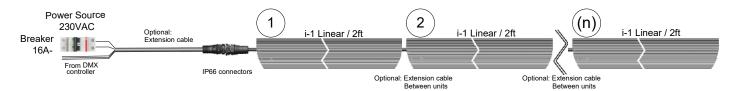
(n) Maximi	um number of เ	ker line	3	W0	2	WO:	
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breake type 15AC	r Breaker type 15AB	Breake type 15AC	r Breaker type 15AB
208 [V]	250 [A]	1 [m]	0 [m]	14	8	14	8
208 [V]	1000 [A]	1 [m]	0 [m]	14	8	14	8
208 [V]	250 [A]	10 [m]	0 [m]	14	8	14	8
208 [V]	1000 [A]	10 [m]	0 [m]	14	8	14	8
208 [V]	250 [A]	1 [m]	2,5 [m]	9	8	9	8
208 [V]	1000 [A]	1 [m]	2,5 [m]	14	8	14	8
208 [V]	250 [A]	10 [m]	2,5 [m]	6	8	6	8
208 [V]	1000 [A]	10 [m]	2,5 [m]	14	8	14	8

# 230VAC / 16A-WIRING EXAMPLE I-1 LINEAR X / 4FT



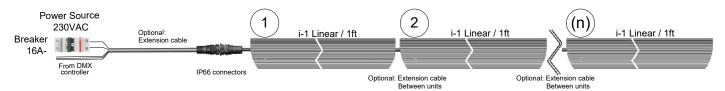
(n) Maximum number of units on a Breaker line					115W		80W
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breake type 16AC	r Breaker type 16AB	Breake type 16AC	r Breaker type 16AB
230 [V]	250 [A]	1 [m]	0 [m]	8	4	8	4
230 [V]	1000 [A]	1 [m]	0 [m]	8	4	8	4
230 [V]	250 [A]	10 [m]	0 [m]	8	4	8	4
230 [V]	1000 [A]	10 [m]	0 [m]	8	4	8	4
230 [V]	250 [A]	1 [m]	2,5 [m]	6	4	6	4
230 [V]	1000 [A]	1 [m]	2,5 [m]	8	4	8	4
230 [V]	250 [A]	10 [m]	2,5 [m]	4	4	4	4
230 [V]	1000 [A]	10 [m]	2,5 [m]	8	4	8	4

# 230VAC / 16A-WIRING EXAMPLE I-1 LINEAR X / 2FT



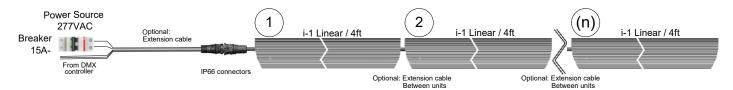
(n) Maximum number of units on a Breaker line				58W		40W	
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breaker type 16AC	Breaker type 16AB	Breake type 16AC	r Breaker type 16AB
230 [V]	250 [A]	1 [m]	0 [m]	14	8	14	8
230 [V]	1000 [A]	1 [m]	0 [m]	14	8	14	8
230 [V]	250 [A]	10 [m]	0 [m]	14	8	14	8
230 [V]	1000 [A]	10 [m]	0 [m]	14	8	14	8
230 [V]	250 [A]	1 [m]	2,5 [m]	8	8	8	8
230 [V]	1000 [A]	1 [m]	2,5 [m]	14	8	14	8
230 [V]	250 [A]	10 [m]	2,5 [m]	5	8	5	8
230 [V]	1000 [A]	10 [m]	2,5 [m]	14	8	14	8

# 230VAC / 16A-WIRING EXAMPLE I-1 LINEAR X / 1FT



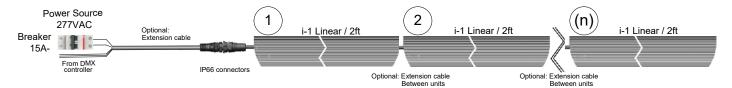
(n) Maximum number of units on a Breaker line					30W		20W	
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breake type 16AC	r Breaker type 16AB	Breake type 16AC	er Breaker type 16AB	
230 [V]	250 [A]	1 [m]	0 [m]	14	8	14	8	
230 [V]	1000 [A]	1 [m]	0 [m]	14	8	14	8	
230 [V]	250 [A]	10 [m]	0 [m]	14	8	14	8	
230 [V]	1000 [A]	10 [m]	0 [m]	14	8	14	8	
230 [V]	250 [A]	1 [m]	2,5 [m]	9	8	9	8	
230 [V]	1000 [A]	1 [m]	2,5 [m]	14	8	14	8	
230 [V]	250 [A]	10 [m]	2,5 [m]	5	8	5	8	
230 [V]	1000 [A]	10 [m]	2,5 [m]	14	8	14	8	

# 277VAC / 15A-WIRING EXAMPLE I-1 LINEAR X / 4FT



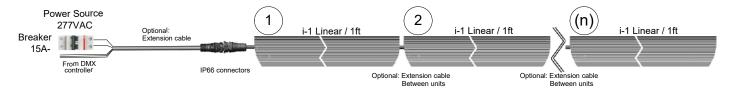
(n) Maximum number of units on a Breaker line					115W		80W
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breake type 15AC	er Breaker type 15AB	Breake type 15AC	r Breaker type 15AB
277 [V]	250 [A]	1 [m]	0 [m]	8	4	8	4
277 [V]	1000 [A]	1 [m]	0 [m]	8	4	8	4
277 [V]	250 [A]	10 [m]	0 [m]	8	4	8	4
277 [V]	1000 [A]	10 [m]	0 [m]	8	4	8	4
277 [V]	250 [A]	1 [m]	2,5 [m]	8	4	8	4
277 [V]	1000 [A]	1 [m]	2,5 [m]	8	4	8	4
277 [V]	250 [A]	10 [m]	2,5 [m]	7	4	7	4
277 [V]	1000 [A]	10 [m]	2,5 [m]	8	4	8	4

# 277VAC / 15A-WIRING EXAMPLE I-1 LINEAR X / 2FT



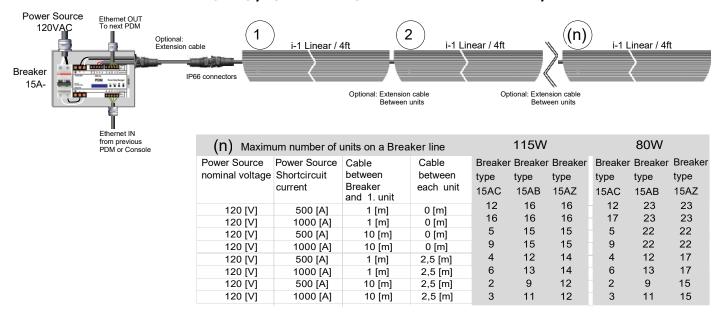
(n) Maximum number of units on a Breaker line					58W		40W
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breake type 15AC	type 15AB	Breake type 15AC	r Breaker type 15AB
277 [V]	250 [A]	1 [m]	0 [m]	14	8	14	8
277 [V]	1000 [A]	1 [m]	0 [m]	14	8	14	8
277 [V]	250 [A]	10 [m]	0 [m]	14	8	14	8
277 [V]	1000 [A]	10 [m]	0 [m]	14	8	14	8
277 [V]	250 [A]	1 [m]	2,5 [m]	11	8	11	8
277 [V]	1000 [A]	1 [m]	2,5 [m]	14	8	14	8
277 [V]	250 [A]	10 [m]	2,5 [m]	8	8	8	8
277 [V]	1000 [A]	10 [m]	2,5 [m]	14	8	14	8

# 277VAC / 15A-WIRING EXAMPLE I-1 LINEAR X / 1FT

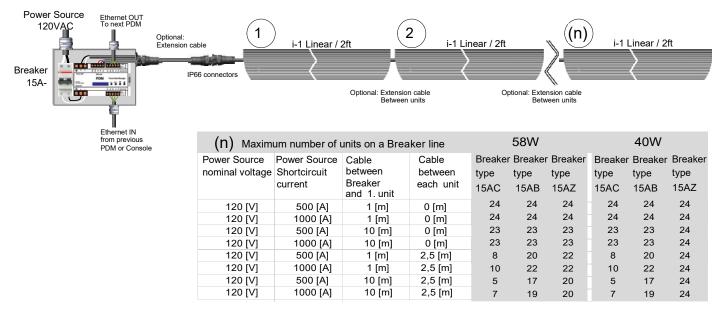


(n) Maximum number of units on a Breaker line					30W		20W
Power Source nominal voltage	Power Source Shortcircuit current	Cable between Breaker and 1. unit	Cable between each unit	Breake type 15AC	r Breaker type 15AB	Breake type 15AC	r Breaker type 15AB
277 [V]	250 [A]	1 [m]	0 [m]	14	8	14	8
277 [V]	1000 [A]	1 [m]	0 [m]	14	8	14	8
277 [V]	250 [A]	10 [m]	0 [m]	14	8	14	8
277 [V]	1000 [A]	10 [m]	0 [m]	14	8	14	8
277 [V]	250 [A]	1 [m]	2,5 [m]	12	8	12	8
277 [V]	1000 [A]	1 [m]	2,5 [m]	14	8	14	8
277 [V]	250 [A]	10 [m]	2,5 [m]	9	8	9	8
277 [V]	1000 [A]	10 [m]	2,5 [m]	14	8	14	8

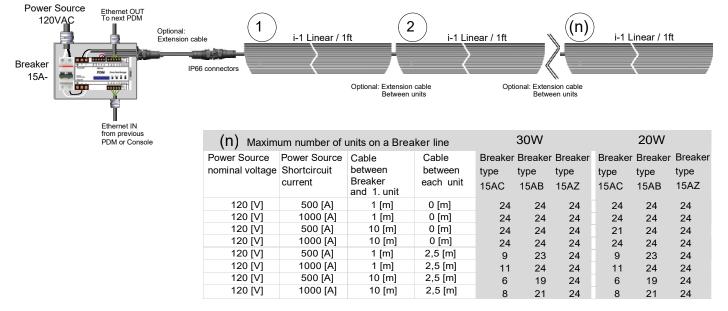
# 120VAC / 15A- WIRING EXAMPLE I-1 LINEAR X / 4FT



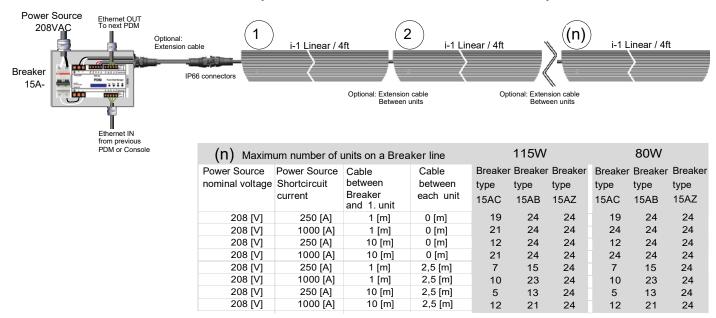
# 120VAC / 15A- WIRING EXAMPLE I-1 LINEAR X / 2FT



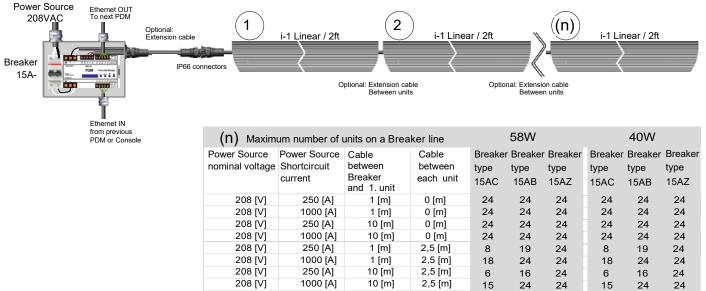
# 120VAC / 15A- WIRING EXAMPLE I-1 LINEAR X / 1FT



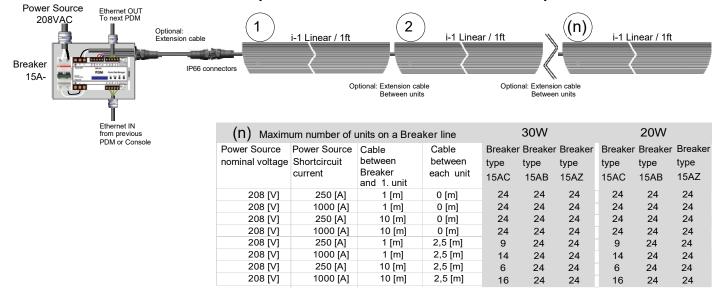
# 208VAC / 15A- WIRING EXAMPLE I-1 LINEAR X / 4FT



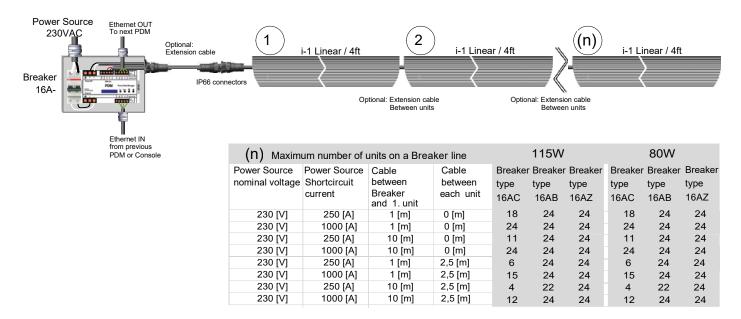
# 208VAC / 15A- WIRING EXAMPLE I-1 LINEAR X / 2FT



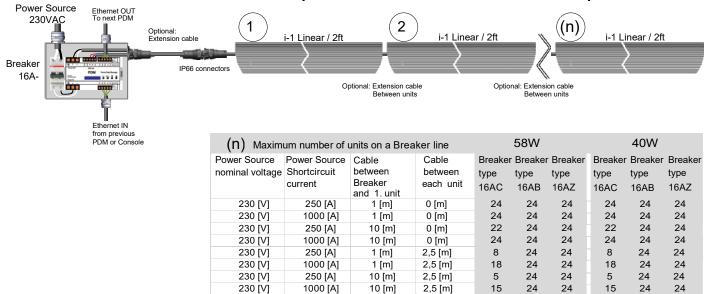
# 208VAC / 15A- WIRING EXAMPLE I-1 LINEAR X / 1FT



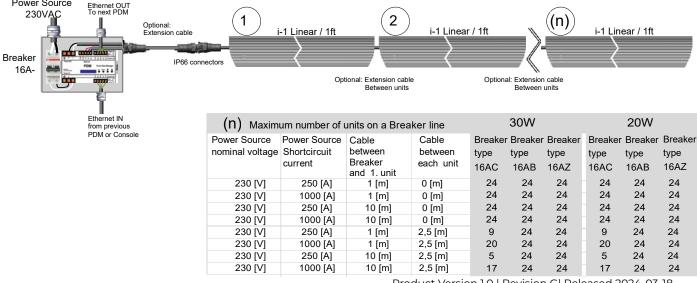
# 230VAC / 16A- WIRING EXAMPLE I-1 LINEAR X / 4FT



# 230VAC / 16A- WIRING EXAMPLE I-1 LINEAR X / 2FT

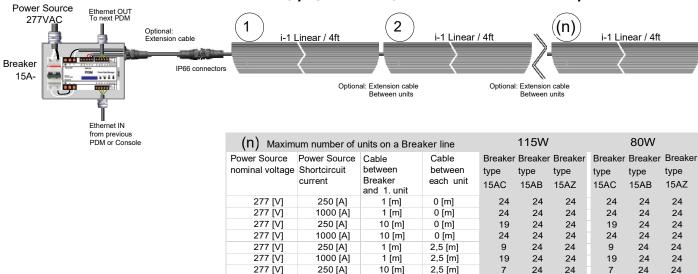


# 230VAC / 16A- WIRING EXAMPLE I-1 LINEAR X / 1FT



**Power Source** 

# 277VAC / 15A-WIRING EXAMPLE I-1 LINEAR X / 4FT



1000 [A]

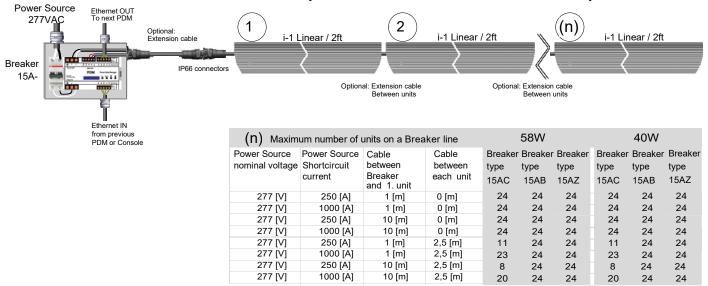
277 [V]

# 277VAC / 15A-WIRING EXAMPLE I-1 LINEAR X / 2FT

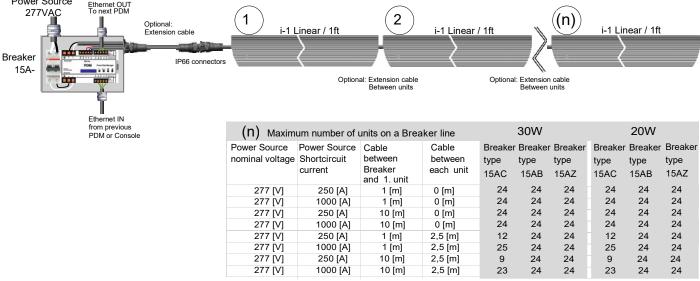
2,5 [m]

24

10 [m]



# 277VAC / 15A-WIRING EXAMPLE I-1 LINEAR X / 1FT



Power Source

# CABLE, TERMINATION, AND INSTALLATION

# DATA

The fixture is compatible with DMX512/RDM (ANSI E1.11 – 2008) through the power and data cable only. This is compatible with a vast number of lighting controllers.

Using suitably rated terminals in an equipment enclosure, connect the data cables to the DMX negative (-) positive (+) and common/ground using the chart shown below.

The last fixture in line must have a DMX terminator installed. This is to terminate the DMX signal, like to RS-485 signal protocol.

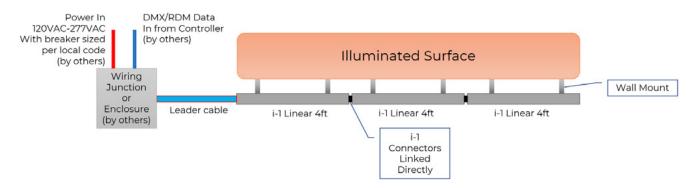
Note that SGM fixtures provide a passive DMX Thru signal as DMX Out, instead of an active output signal.

- 3 lengths of extension cable are available; 1m, 2.5m and 5m. However, it is possible to purchase a Custom Extension Cable Kit. This will be available, to make cables to custom lengths.
- A leader cable is available in 2.5m and 10m lengths with a female connector and bare-ends at the supply side. This leader cable supplies the first fixture in line and is terminated at a junction box or equipment enclosure.

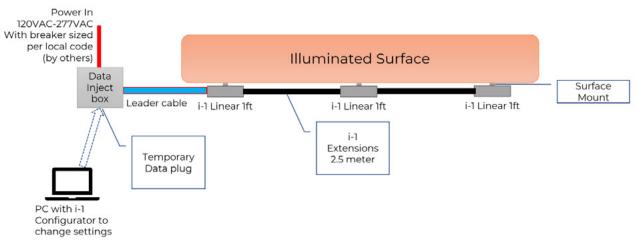
	WIRE		COLOR	SYMBOL	CONDUCTOR
Data	AWG#24		Shield		Signal GND
	AWG#24		White		Data-
	AWG#24		Red		Data+
Power	AWG#14	_	Black	L	phase
	AWG#14		White	N	neutral
	AWG#14		Green/Yellow	± or ⊕	ground

An installation can be visualized in two ways:

1. Version 1- Installation using DMX to control the fixtures. Configuration can be done using a PC with configurator or an RDM enabled DMX Controller



2. Version2 - Standalone installation using Quick Color to control the fixtures. This requires a PC with the configurator, temporary connected to the installation, to perform initial setup.



# CONFIGURATION

i-1 Linear is configured using the i-1 Linear Configuration Tool. This software is Windows® PC based and connects to the fixtures via DMX512/RDM protocol. All settings are set using this software. All settings and configuration are done through this tool. Please note that any firmware update of the i-1 Linear is done from a separate tool "SGM Firmware Tool". Both require Windows 10 or higher and can be downloaded from the SGM Light website.

The SGM USB POI uploader cable is needed to connect the i-1 linear to the computer in installations without a Data Inserter

SGM USB uploader cable, POI p/n: 83062067

The SGM USB uploader cable is needed to connect the i-1 linear to the computer in installations with a Data Inserter

SGM USB uploader cable, p/n: 83062011





Attach the connector to a bare end leader cable as follows:

Shield	Signal GND
White	Data-
Red	Data+

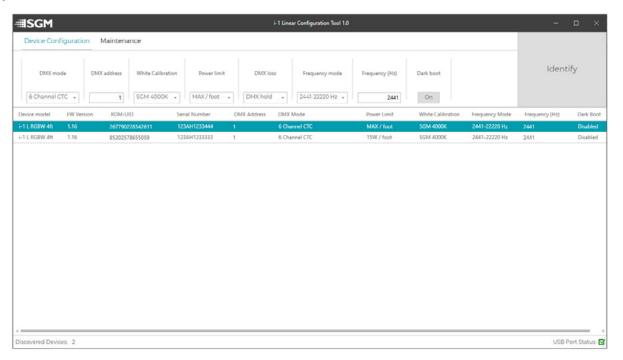
# USING THE CONFIGURATION SOFTWARE

Connect the USB uploader cable to a PC.

Connect i-1 Linear fixtures to the uploader and leader cable.

Launch the configuration tool on the PC.

The Device Configuration tab is the default view. Verify that there is a green tick mark in the lower right corner. This indicates that a USB connection has been established. The lower left corner has the number of discovered devices displayed.



Press the Identify button to identify each connected fixture. Each fixture will flash when the button is pressed.

One or multiple fixtures can be selected at a time. Selected fixtures are shown in Teal as shown above.

Available settings are as follows:

**DMX Mode:** Selects the DMX modes. (See DMX chart for details).

**DMX Address:** Inputs the start DMX address for the fixture.

White Calibration: Selects the standard color temperature, 4000 Kelvin (default) or 5600 Kelvin.

Power Limit: Sets maximum wattage. (The maximum power limit selection can vary for each fixture type.)

# **DMX Loss Options:**

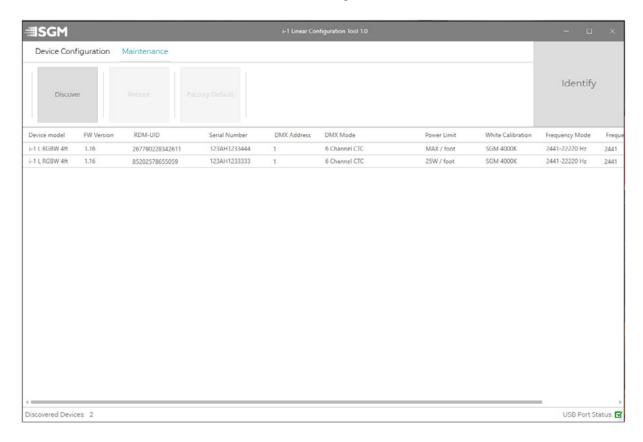
- · When DMX is lost, a static state is triggered.
- DMX hold last received DMX is hold.
- · All on turn all I FDs on.
- · Blackout turn all LEDs off.
- $\cdot~$  Hold 5 min Hold DMX for 5 minutes and thereafter slowly fade down until all LEDs are off.

Frequency Mode: Select either high or low LED PWM frequency range. (default is high range)

Frequency (Hz): Input desired LED PWM frequency. (default is 2441Hz)

Dark boot: On/off. When set to "On" the start-up LED sequence is disabled. (default is "Off")

The Maintenance tab is where fixtures are added to the configuration tool, able to be re-booted, or defaulted.



When no fixture(s) are selected the "Reboot" and Factory Default" buttons are grayed out.

Available functions are as follows:

**Discover:** Connected fixtures are automatically detected. To manually trigger a discovery process the button is pressed.

**Reboot:** Reboot selected fixtures.

**Factory Default:** Sets factory defaults on the selected fixtures. These are:

# **FACTORY DEFAULT**

FEATURE	VALUE
DMX address	1
DMX Mode	6 Channel CTC
DMX Loss	DMX hold
Frequency mode	High
Frequency	2.441KHz, PWM rate: 305 Hz - 22220 Hz
Default CTC	4000 Kelvin
Quick Color	All colors set to 0
Dark Boot	Disabled

# **RDM**

The i-l features are supported via various RDM functions.

RDM (Remote Device Management) is a protocol enhancement to USITT DMX512 that allows bi-directional communication between the fixtures and the controller over a standard DMX line. This protocol will allow configuration, status monitoring and management.

An RDM controller is needed to control the supported parameters. See the tables below for supported RDM functions

PID	ACTIONS ALLOWED	NAME
0x0082	GET/ SET	Device Label
0x0081	GET	Manufacturer Label
0x00E0	GET/ SET DMX	DMX Personality
0x00E1	GET DMX	DMX Personality Description
0x0200	GET	Sensor Definition
0x0201	GET/ SET	Sensor Value
0x0080	GET	Device Model Description
0x0400	GET/ SET	Device Hours
0x0401	GET/ SET	LED Hours
0x0051	GET	Parameter Description
0x0090	GET/ SET	Factory Defaults
0x1001	SET	Reset Device
0x0120	GET	Slot info
0x0121	GET	Slot Description
0x0122	GET	Default Slot Value
0x8060	GET	Serial Nr.
0x8625	GET/SET	FAN 0=AUTO 1=LOW 2=HIGH 3=FULL
0x8634	GET/SET	DMX LOSS 0=HOLD 1=WHITE 2=OFF 3=HOLD 5 MINUTES
0x8636	GET	Active Error
0x863F	GET / SET	DARK-BOOT 0=DISABLE 1=ENABLE
0x863A	GET/SET	POWER-LIMIT 0-5
0x8620	GET/SET	LED-PWM 305-22220Hz
0x8640	GET/SET	BASE-CTC 4000 5600
0x8641	GET/SET	FREQ-MODE 0=LO 1=HI
0x8642	GET	POWER-INFO

# **ACCESSORIES**

Two types of accessories will be available to help shape and focus the beam; Glare Shields and Louvers

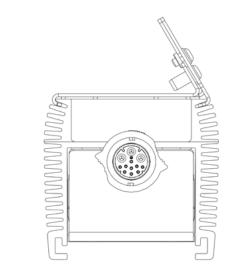
# **ANTI GLARE SHIELDS**

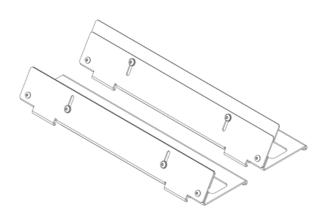
# INSTALLATION

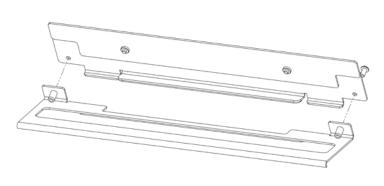
- 1. Mount i-1 Linear fixture in position.
- 2. Place surface component on the i-l linear glass ensuring the edge slots into the first extrusion rib of the fixture. (The piece with rubber feet)
- 3. Position the second component so that the two extended edge arms are inserted into the first extrusion rib of the fixture on the opposite side.

  Ensure the cutout on the surface component is matched to the profile of the second component to both components fit flush next to each other.
- 4. Using a screwdriver, attache both comopents together. Use no more than 3.0 Nm of torque.









# **MAINTENANCE**

# FIRMWARE UPDATES

Updates are done through the SGM Firmware Tool and an Uploader Cable. This is PC based software used with a SGM Light dongle.



Figure X: SGM Uploader cable



Figure X: SGM Firmware tool

Follow the following procedure:

- Install the SGM Firmware tool on a PC based computer.
- 2. Download latest firmware file from product web page on the SGM website
- 3. Connect the uploader cable to the i-1 Linear and the computer. See CABLE AND CONNECTOR PINOUT earlier in the manual for wire color codes.
- 4. Launch the SGM Firmware Tool.
- 5. Click "File" then "Open" and navigate to the firmware file needed, select it and click "Open".
- 6. The firmware is now loaded in the uploader, click "Upload Firmware"

The fixture will now update and reboot.

The latest firmware, manuals and the SGM Network Admin tools are all available for free download at <a href="https://www.sgmlight.com">www.sgmlight.com</a>

# **CLEANING**

Cleaning the glass lens area may be needed occasionally to achieve the maximum light output after exposure to dust, sand, or dirt.

Whenever necessary, clean the exterior using a soft cloth dampened with water. For a thorough cleaning of the exterior, the use of a mild soap and water solution is recommended. Do not use products that contain solvents, abrasives, or caustic agents for cleaning, as they can cause damage to hardware, cables, and connectors.

# **SUPPORT HOTLINE**

SGM offers 24/7 technical support.

Worldwide: +45 3840 3840

US: +1 407-242-6217

support@sgmlight.com

# **APPROVALS AND CERTIFICATIONS**

Conforms to	
Conforms to	
Conforms to	
Conforms to	UK SI 2016 No. 1101: The Electric Equipment (Safety) Regulations 2016
Conforms to	UK SI 2016 No. 1091; Electromagnetic Compatibility Regulations 2016

The information in this document is subject to chance without notice. For the latest information, visit www.sgmlight.com.







# USER NOTES





# **SGM LIGHT A/S**

Sommervej 23

8210 Aarhus V

Denmark

Tel: +45 70 20 74 00

info@sgmlight.com

www.sgmlight.com