

Application

FLEX by 3M (the “Product”) is a modular lighting system for dry, interior use (the “Application”). The Product allows easy creation of long, 3D lighting paths along the interior ceilings or walls of your building. White LED light sources and 3M Air Guide technology provide excellent light uniformity and efficiency.

Construction and Finishes

Light modules are available in matte black, matte white and silver with black or white 10 ft. (3m) power cords. Custom finishes are available upon request. The light modules are constructed with an aluminum enclosure with screen printed front acrylic lens and a 3M proprietary diffuser and reflector.

Figure 1. Specifications. See Table A, “Part # FLX” for corresponding parts.

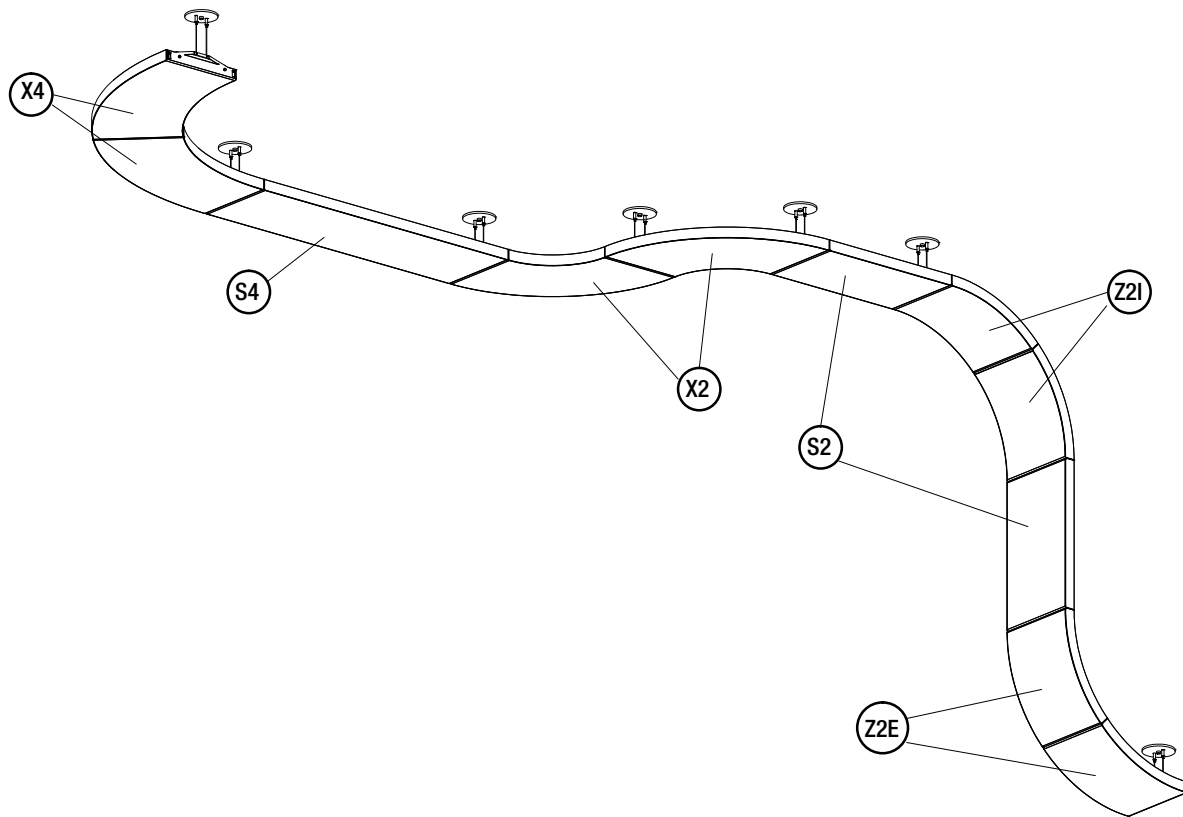


Table A. Specifications

Description	Part # FLX	Minimum Lumens*		DC Power (W)	AC Power (W)	Weight (lbs / kg)
		3000 K	4000 K			
Straight 2 ft. (0.6m)	S2	960	1100	22	31	6.3 / 2.8
Straight 4 ft. (1.2m)	S4	1800	2100	43	51	12 / 5.4
X Plane 45° 4 ft. (1.2m) Outer Radius	X4	1000	1100	22	30	8.3 / 3.7
X Plane 90° 2 ft. (0.6m) Outer Radius	X2	920	1000	25	31	7.0 / 3.2
Z Plane 45° 2 ft. (0.6m) Radius (Interior Lit)	Z2I	560	640	14	17	5.0 / 2.2
Z Plane 45° 2 ft. (0.6m) Radius (Exterior Lit)	Z2E	560	640	14	17	5.0 / 2.2

Physical Dimensions

Figure 2. Straight Modules.

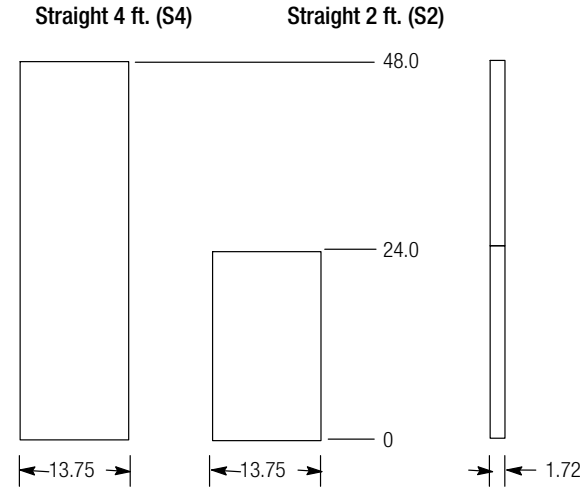


Figure 3. X Plane 45° 4 ft. Outer Radius (X4).
X Plane 90° 2 ft. Outer Radius (X2).

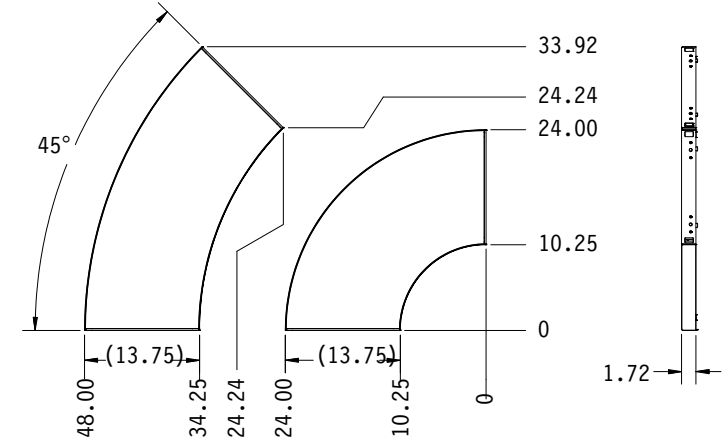
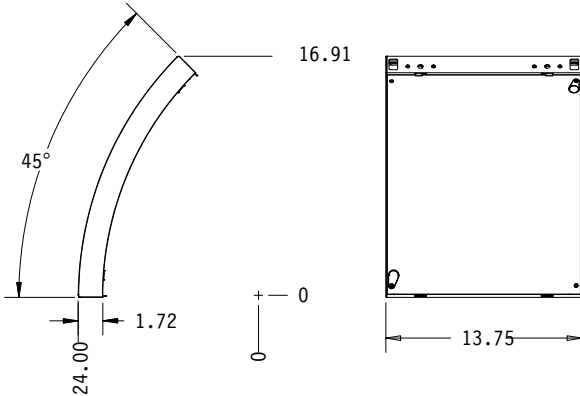


Figure 4. Z Plane 45° 2 ft. Radius (Interior or Exterior Lit, Z2E and Z2I).



Light Output

The light output of individual light modules is carefully controlled to achieve uniform surface brightness for different shapes and sizes. Light is emitted in a Lambertian pattern from the entire diffuser surface. Planar light modules that are mounted horizontally will have the approximate far field candela distribution shown in Figure 3. Minimum lumen output performance characteristics are in Table A. Photometric IES files for each module are available at www.3MArchitecturalMarkets.com

3M uses LEDs that have been tested in accordance with IES LM-80 Standards. Projected average LED life is greater than 36,300 hours at 70% of lamp lumen output (L70). LED lifetime is reported according to the IES TM-21 standard.

Electrical

The Product is ETL listed for dry locations. The light modules are pre-assembled for easy installation. The remotely located 24 V, 96 W, Class 2 LED, universal input power supplies are field replaceable by a qualified electrician. One power supply is required for each 60–90 W of load (2 to 4 FLEX light modules depending on size). Power supplies must be mounted in a suitable contractor supplied electrical enclosure. Multiple light modules may be interconnected such that only one power cord drop is required approximately every 8 linear ft. (2.4m). Contact 3M if you require assistance in determining the number of power supply kits required for your installation. Refer to Table C for wire requirements if the power supply is located greater than 10 ft. (3m) from the luminaire.

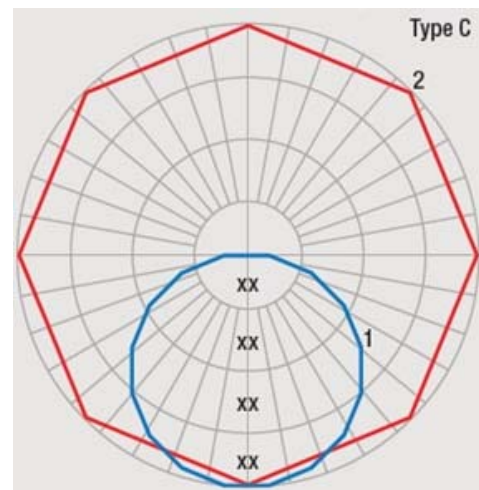
Table B. Power Supply Specifications

Input Voltage	90 – 277 V AC Single Phase
Dimming	0 – 10 V
Dimensions	12.3" x 2.4" x 1.5" (312mm x 61mm x 28mm)
Weight	1.8 lbs (0.82kg)

Table C. Maximum Power Supply Remote Distance with 10 ft. (3m) Power Cord

Remote Distance	American Wire Gauge (AWG)
25 ft. (7.6m)	18
40 ft. (12.2m)	16
70 ft. (21.3m)	14
110 ft. (33.5m)	12

Figure 5. Typical Candela Distribution. Horizontal Mounting of a Planar Light Module.



Mounting Options

FLEX light modules may be pendant hung horizontally or vertically using aircraft cable and cable grippers (see Figures 6 to 9). FLEX light modules may also be wall mounted or ceiling mounted (T-grid suspended ceiling, concrete or gypsum board types). Contact 3M for assistance in determining the appropriate mounting accessories for your application. A termination plate is required for module ends that are not connected to another module. See Table D, Accessories, on pages 5 and 6 for descriptions.

Figure 6. Pendant Mounting to a T-grid Type Ceiling, Exploded View

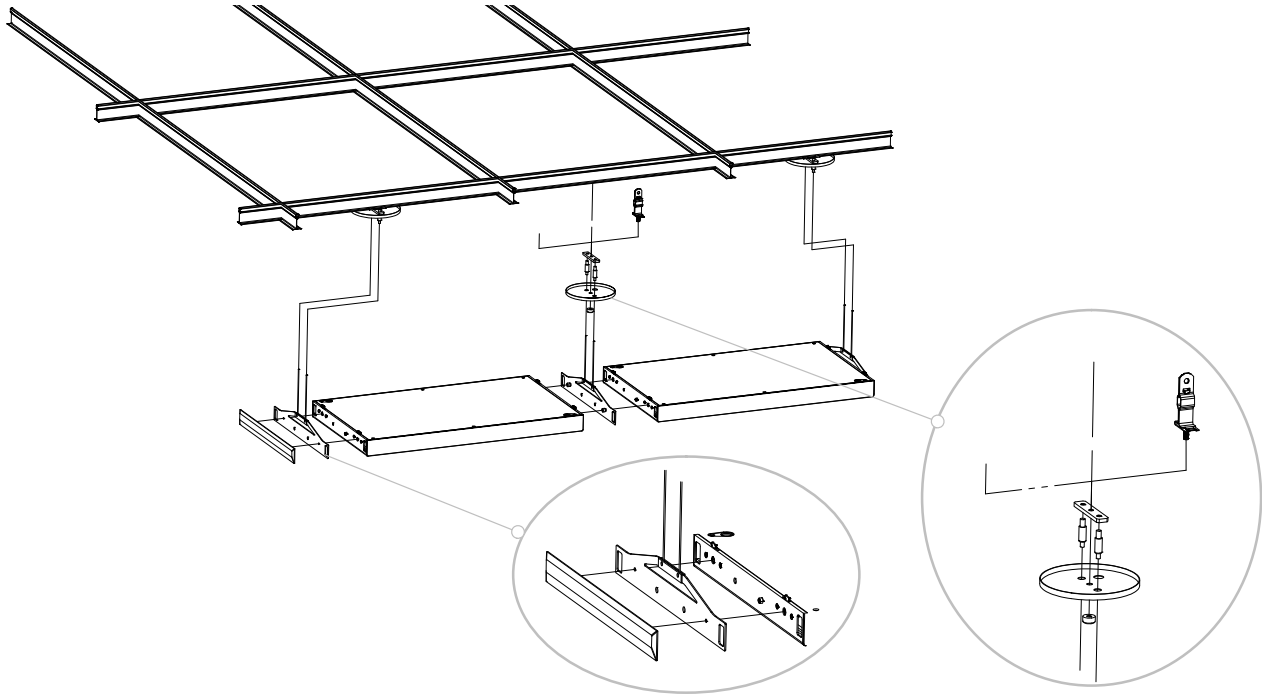


Figure 7. Horizontal Pendant Mount System for Concrete or Gypsum Board Ceiling

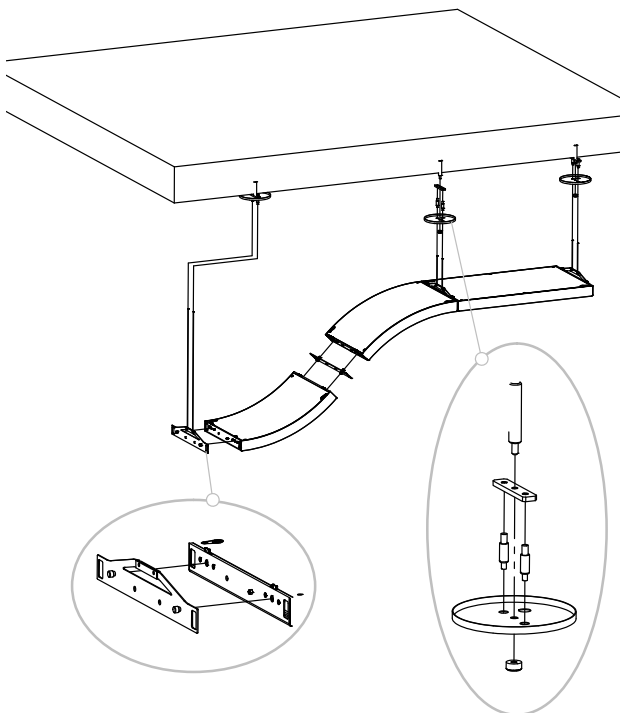


Figure 8. Ceiling Surface Mount T-Grid Kit

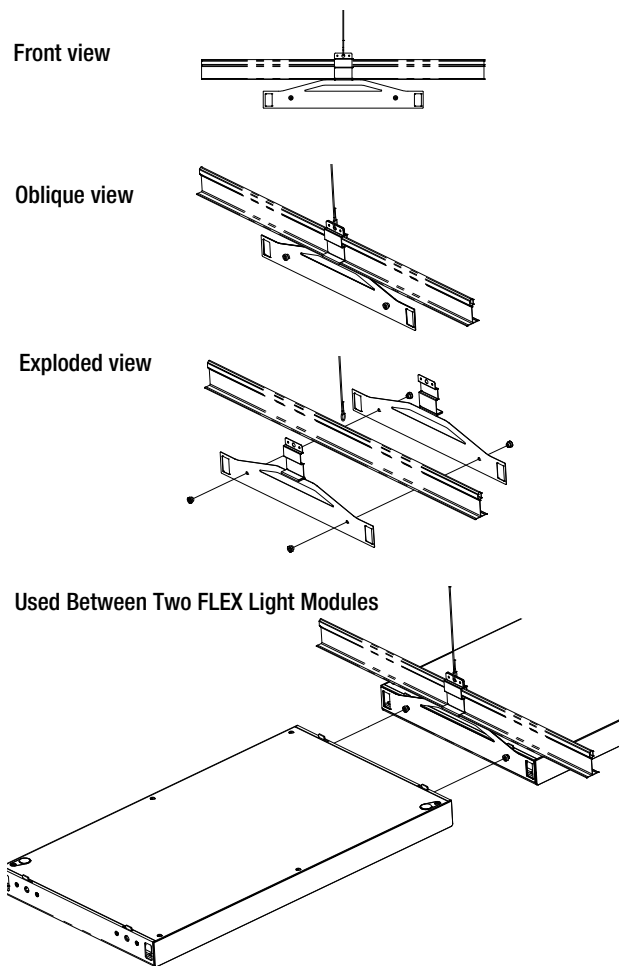


Figure 9. Vertical Pendant and Wall Mount Options.

It is also possible to transition from a horizontal pendant to a wall mount

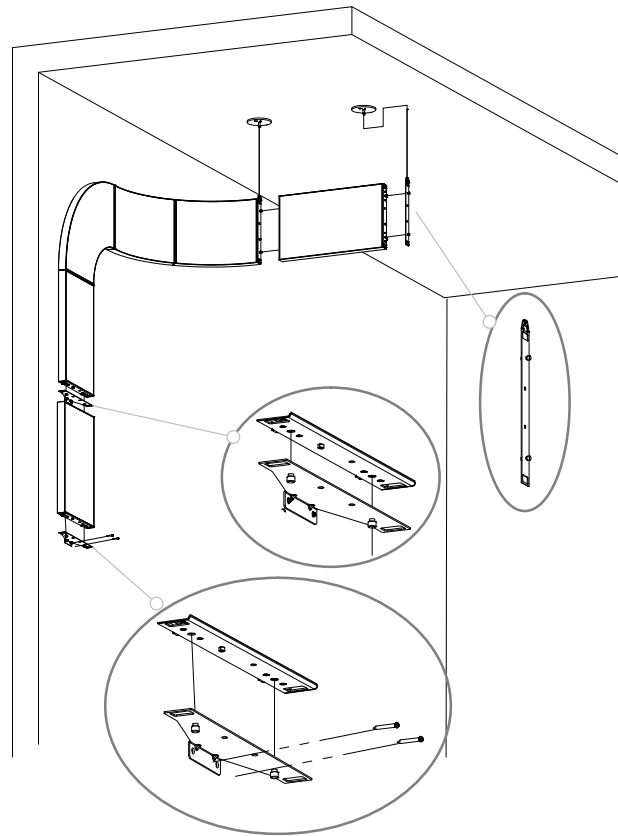


Table D. Accessories


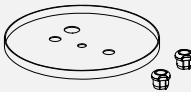
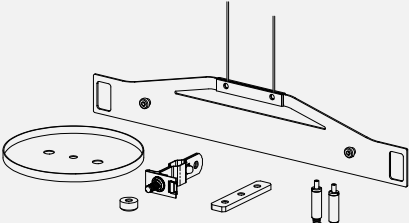
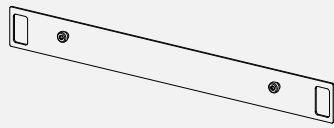
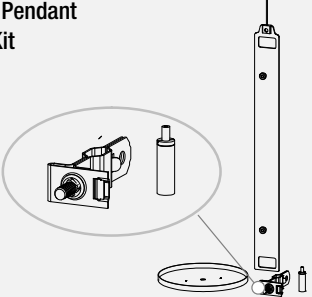
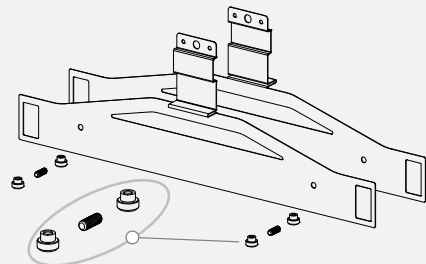
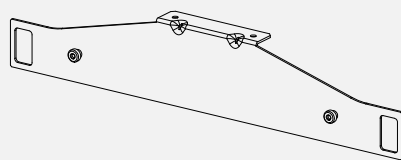
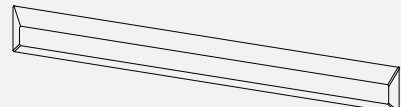
Accessory	Description	Items Included
Power Supply Kit 	96 W universal input LED power supply. One power supply is required per 60-90 W of DC load.	<ul style="list-style-type: none"> LP1090-23-GG-299-DV and thermal pad material. Dimensions 12.3" x 2.4" x 1.5" Weight: 1.82 lbs
Power Cord Kit 	Power cords and canopy components. At least one Power Cord Kit is required per Power Supply. Power cords are not plenum rated.	<ul style="list-style-type: none"> 10 ft. (3m) power cord (not shown) Strain relief grommets (Qty: 2) 5 in. (12.7cm) white canopy plate with 0.5 in. (12.7mm) power feed hole

Table D. Accessories, *continued*

Accessory	Description	Items Included
Horizontal Pendant Mount Kit 	Horizontal inter-module connection plate assembly and suspension hardware for pendant attach to a T-grid suspended ceiling, concrete or gypsum board.	<ul style="list-style-type: none"> Horizontal suspension plate assembly 5 in. (12.7cm) white canopy plate Supported T-bar clip Cable grippers with 1/4-20 thread (Qty: 2) 10 ft. (3m) of 3/64" stainless steel, ball terminated aircraft cable (Qty: 2) Canopy bar Canopy nut
Connection Plate Assembly 	Connection Plate assembly is used between two Z2I, two Z2E modules, or in a Z2I to Z2E transition. May also be used between two S2 modules.	<ul style="list-style-type: none"> Connection plate assembly
Vertical Pendant Mount Kit 	Vertical inter-module connection plate assembly and suspension hardware for pendant attachment to a T-grid suspended ceiling, concrete or gypsum board.	<ul style="list-style-type: none"> Vertical suspension plate assembly Supported T-bar clip Cable gripper 10 ft. (3m) of 3/64" stainless steel aircraft cable 5 in. (12.7 cm) canopy plate with 0.5" (12.7mm) power feed hole 5 in. (12.7cm) canopy plate
Ceiling Surface Mount T-Grid Kit 	Brackets to attach to a T-grid ceiling when the light modules must be less than 6 in. (15cm) from the ceiling.	<ul style="list-style-type: none"> T-grid interconnection brackets (Qty: 2) Threaded studs (Qty: 2) Latch nuts (Qty: 4)
Wall Mount Bracket Assembly 	Wall mount bracket assembly for attaching light modules to a wall. Use with #6 or #8 screws and suitable wall anchors.	<ul style="list-style-type: none"> Wall mount bracket assembly
Termination Plate 	Finished cosmetic termination plate for exposed module ends not connected to another Light module.	<ul style="list-style-type: none"> Termination plate (select finish to match light modules)

Module Order Code

1. Module type

CODE	Description
S2	Straight 2 ft. (0.6m)
S4	Straight 4 ft. (1.2m)
X4	X Plane 45° 4 ft. (1.2m) Outer Radius
X2	X Plane 90° 2 ft. (0.6m) Outer Radius
Z2I	Z Plane 45° 2 ft. (0.6m) Radius - Interior Lit
Z2E	Z Plane 45° 2 ft. (0.6m) Radius - Exterior Lit

2. Module Finish

CODE	Description
WH	White
BK	Black
SL	Silver
X	Custom

3. Light

CODE	Description
3K	White, 3000 K
4K	White, 4000 K

4. Power Cord Kit – Power Cord Color

CODE	Description
FLX-PC-WH	White Power Cord
FLX-PC-BL	Black Power Cord

5. Termination Plate-Finish

CODE	Description/Finish
FLX-TP-WH	White
FLX-TP-BL	Black
FLX-TP-SL	Silver

Order Form

Module or Accessory		Order Code						Quantity
		FLX	Module		Finish		Light	
S2	Straight 2 ft. (0.6m)	FLX	S2	-		-		
S4	Straight 4 ft. (1.2m)	FLX	S4	-		-		
X4	X Plane 45° 4 ft. (1.2m) Outer Radius	FLX	X4	-		-		
X2	X Plane 90° 2 ft. (0.6m) Outer Radius	FLX	X2	-		-		
Z2I	Z Plane 45° 2 ft. (0.6m) Radius - Interior Lit	FLX	Z2I	-		-		
Z2E	Z Plane 45° 2 ft. (0.6m) Radius - Exterior Lit	FLX	Z2E	-		-		
Termination Plate								
Power Cord Kit								
Power Supply Kit		FLX-PS						
Horizontal Pendant Suspension Kit		FLX-HS						
Vertical Pendant Suspension Kit		FLX-VS						
Connection Plate Assembly		FLX-CP						
Wall Mount Bracket Assembly		FLX-WB						
Ceiling Surface Mount Bracket Kit		FLX-CB						

1. One Power Supply Kit and One Power Cord Kit is required for 8 ft. of FLEX (96 watt DC load) minimum
2. One Connection Plate Assembly is required for interconnecting two Z modules
3. A Termination Plate is required for each exposed end of a module

Reference Tables

SSL Chromaticity Standard: ANSI C78.337

Color	Nominal CCT	Target CCT and Tolerance
White	3000 K	3045 ± 175 K
White	4000 K	3985 ± 275 K

Metric Conversion	
1 in.	25.4mm
1 in.	2.54cm
1 ft.	0.3m

WARRANTY DOCUMENT

Product

FLEX by 3M (the "Product") is a modular lighting system for dry, interior use (the "Application").

Limited Warranty

1. When used in the Application, 3M warrants to the party who purchased the Product directly from 3M (the "Buyer") that the Product will be free from defects in material and workmanship (the "3M Warranty") for the applicable time period stated below ("Warranty Period"), which will begin on the earlier of: (a) Product installation date; or (b) three months after 3M's Product shipment date:
 - 1.1 For all but a Product's power supply component, the Warranty Period is five years.
 - 1.2 For a Product's power supply component, the Warranty Period is three years.
2. For Buyer's convenience, 3M may provide a Specification Sheet, other engineering or technical information, recommendations, installation instructions, and other Product-related information or materials (all collectively referred to as "Product Information"), but 3M does not warrant any Product Information.
3. The 3M Warranty is contingent on the Product being stored, wired, installed, maintained, and used only as 3M recommends in all Product Information and in this Warranty Document. Also, 3M has no obligation under the 3M Warranty as to Product that has been: (a) modified or altered in any manner; (b) damaged through contact with a person or thing, misuse, accident, vandalism, neglect, or other action by anyone other than 3M; (c) affected by environmental conditions, such as power fluctuations, improper power supply, or activity by animals or insects; or (d) used not in compliance with all applicable standards and electrical codes.
4. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, THE 3M WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, RIGHTS OR CONDITIONS, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE AND THOSE ARISING FROM A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. BUYER IS RESPONSIBLE FOR DETERMINING IF A PRODUCT IS SUITABLE FOR ITS PARTICULAR PURPOSE AND ITS INSTALLATION.

Limited Remedy

3M must receive any 3M Warranty claim in writing by the earlier of: (a) applicable Warranty Period's expiration date; or (b) fourteen business days after Buyer's discovery of that 3M Warranty claim. If the Product is proven not to have met the 3M Warranty during the applicable Warranty Period, then BUYER'S EXCLUSIVE REMEDY AND 3M'S SOLE OBLIGATION, WILL BE AT 3M'S OPTION, TO REPAIR OR REPLACE THAT PRODUCT QUANTITY OR REFUND THE APPLICABLE PURCHASE PRICE.

Limitation of Liability

3M WILL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO BUYER FOR DIRECT (other than the Limited Remedy above), SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS) IN ANY WAY RELATED TO A PRODUCT, THIS WARRANTY DOCUMENT, OR PRODUCT INFORMATION, REGARDLESS OF THE LEGAL OR EQUITABLE THEORY ON WHICH SUCH DAMAGES ARE SOUGHT.

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