

Fusion Freedom™

Experience the freedom of the next generation of LED lighting modules. Choose your intensity, beam angle, and color with this groundbreaking universal module.

Beam Angle	Removable Batwing Optic
Certifications	UL & cUL Recognized (SAM Manual), CE, CSA, RoHs
Dimensions	0.87"W x 0.99"L x 0.34"H
Efficacy	See Product Options
Fastening	Peel & stick / Mechanical screw hole
Input	12VDC
Max Mods (Series)	Full 60W Load
Operating Temp	-40° to +60°C
Packaging	25 ft. (50 mods) per bag or 100 ft. (200 mods) per box or 500 ft. per case (1,000 mods)
Power Supply	P-LED 12VDC
Protection Grade	IP66
Spacing	2 mods/ft. (fully stretched)
Warranty	5-Year Product / 5-Year Limited Labor



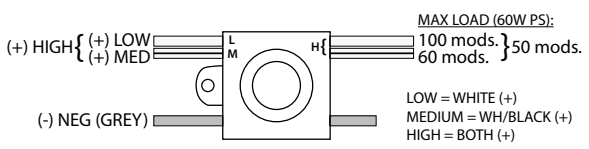
FEATURES

- Universal module optimized for simple customization to reduce inventory
- Simple wiring system allows three levels of brightness
- Removable and replaceable lenses for various depths and diffusion
- Over 30 lens colors allow for endless customization
- Qwik Release Tab for faster install

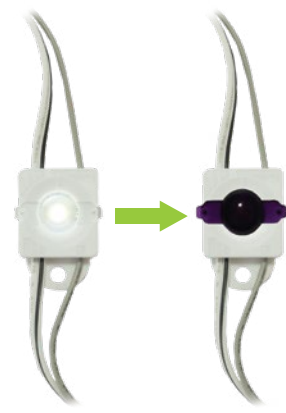
WIRING DETAILS

Gray	Negative
White	Positive (Low)
White/Black	Positive (Medium)
White & White/Black	Positive (High)

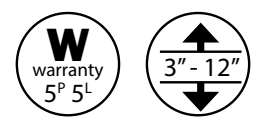
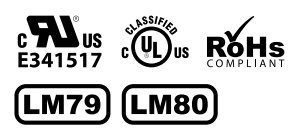
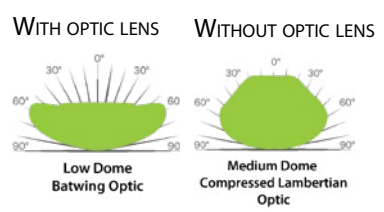
WIRING DIAGRAM



Positive (+) wires can be wired individually or together back to the 12V PS to achieve desired output. See datasheet for load requirements.



Removable and replaceable lenses for various colors, depths, and diffusion. View the Lens Collection on page 24.





Qwik Release Tab reduces labor time

PRODUCT OPTIONS

Color	CCT	Setting	Efficacy	Intensity	Power	Run Footage	Part Number***
True White*	7000K	Low	117 LM/W	70 LM/mod (140 LM/ft.)	0.6W/mod (1.2W/ft.)	50'	PL-FS2-TW5-N (M-FFFL0-70)
		Medium	102 LM/W	95 LM/mod (190 LM/ft.)	0.93W/mod (1.86W/ft.)	30'	
		High	98 LM/W	117 LM/mod (234 LM/ft.)	1.2W/mod (2.4W/ft.)	25'	
Sign White**	6500K	Low	117 LM/W	70 LM/mod (140 LM/ft.)	0.6W/mod (1.2W/ft.)	50'	PL-FS2-SW5-N (M-FFCL0-65)
		Medium	102 LM/W	95 LM/mod (190 LM/ft.)	0.93W/mod (1.86W/ft.)	30'	
		High	98 LM/W	117 LM/module (234 LM/ft.)	1.2W/mod (2.4W/ft.)	25'	

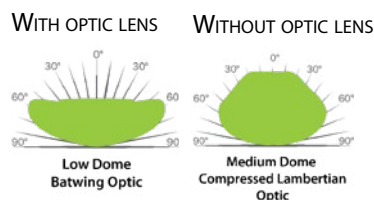
*7000K True White comes standard with batwing optic. **Use 6500K Sign White with mix and match lens system. Lenses sold separately. ***"-N" denotes no lens.

Principal LED is adopting new Part Numbers as of June 4, 2018. These new numbers are in parenthesis, i.e. (x). We will happily work with either part number to serve our customers until further notice.

RECOMMENDED COVERAGE CHART

Depth	Max. Stroke		Spacing		With or without lens
	Single Row		Multi-Row O.C.		
3"	5"		4"		Lens (3 mods/ft.)
4"	10"		5"		Lens
5"	12"		6"		Lens
6"	14"		9"		Lens
7"	16"		10"		Lens
8"	16"		12"		Lens
6"	10"		7"		Without Lens
7"	12"		8"		Without Lens
8"-12"	12"		10"		Without Lens

Note: Product and depth may vary depending on face material and desired brightness.



Fusion Freedom™

LENS COLLECTION

Let your brand colors shine! The Fusion Freedom lens collection includes a wide variety of bold and subtle colors and a complete range of white temperatures ranging from 2700K to 9000K.



SPECIFICATIONS

Beam Angle	Low Dome Batwing Optic
Dimensions	0.47" W x 0.96" L x 0.21" H
Fastening	Removable
Packaging	Bag of 50

FEATURES

- For use in channel letters
- Removable and replaceable lenses for variable depths and diffusion
- Lenses available in non-standard colors to give you endless options
- Qwik Release Tab for easy change-out

CLEAR

LENS



PL-L000
(A-FFCL-LXCF)
Clear, Frosted
Use with Fusion Freedom White



PL-L001
(A-FFCL-LXWC)
Water Clear
Use with Fusion Freedom Colors

WHITES

LENS



PL-L27K
(A-FFCL-LX27)
2700K
Incandescent White



PL-L30K
(A-FFCL-LX30)
3000K
Deep Warm White



PL-L35K
(A-FFCL-LX35)
3500K
Warm White



PL-L41K
(A-FFCL-LX41)
4100K
Medium White



PL-L45K
(A-FFCL-LX45)
4500K
Full Sun White



PL-L50K
(A-FFCL-LX50)
5000K
Natural White



PL-L55K
(A-FFCL-LX55)
5500K
Neutral White



PL-L83K
(A-FFCL-LX83)
8300K
Bright White



PL-L90K
(A-FFCL-LX90)
9000K
Cool White

COLORS

LENS



PL-L738
(A-FFCL-LXEG)
Electric Green



PL-L088
(A-FFCL-LXVP)
VP Green



PL-L322
(A-FFCL-LXTQ)
Turquoise



PL-L131
(A-FFCL-LXSC)
Sea Crest



PL-L183
(A-FFCL-LXHB)
Horizon Blue



PL-L063
(A-FFCL-LXPB)
Powder Blue



PL-L797
(A-FFCL-LXBP)
Bromo Purple



PL-L170
(A-FFCL-LXLP)
Lilac



PL-L794
(A-FFCL-LXLR)
Lavender Rose



PL-L328
(A-FFCL-LXNF)
Neon Flamingo



PL-L148
(A-FFCL-LXMP)
Magenta



PL-L135
(A-FFCL-LXCP)
Coral Pink



PL-L109
A-FFCL-LXPP
Pretty in Pink



PL-L182
(A-FFCL-LXCR)
Crimson



PL-L778
(A-FFCL-LXSO)
Sunset Orange



PL-L105
(A-FFCL-LXOP)
Orange Peel



PL-L767
(A-FFCL-LXNG)
Novial Gold

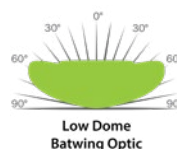


PL-L010
(A-FFCL-LXBY)
Clear Bright Yellow

Fusion Freedom™ Lenses are available in customizable non-stock colors. Minimum order quantity is 20,000. Lead time on custom orders is 3-6 weeks. Custom orders are non-refundable, cannot be returned. The purchasing distributor is responsible for stocking standard lenses, as customized lenses will not be stored at Principal LED's facility.

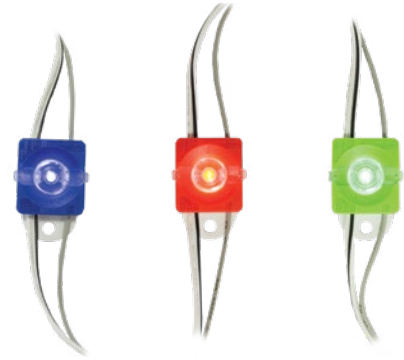
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Custom colors also available!



Fusion Freedom Colors™

Experience the Freedom of the first universal LED module in standard Red, Green, and Blue LEDs with easy ID colored housings.



SPECIFICATIONS

Beam Angle	Removable Batwing Optic
Certifications	UL & cUL Recognized (SAM Manual), CE, RoHs, CSA
Dimensions	0.87"W x 0.99"L x 0.34"H
Fastening	Peel & stick / Mechanical screw hole
Input	12VDC
Operating Temp	-40° to +60°C
Packaging	25 ft. (50 mods) per bag or 100 ft. (200 mods) per box or 500 ft. (1000 mods) per case
Power	See Product Options
Power Supply	P-LED 12VDC
Protection Grade	IP66
Spacing	2 mods/ft. (fully stretched)
Warranty	5-Year Product / 5-Year Limited Labor

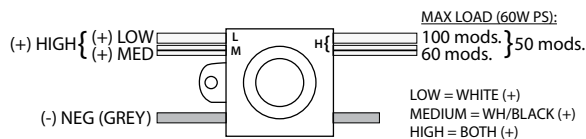
FEATURES

- For use in channel letters
- Standard Red, Green, and Blue are available with the same advantages of the Fusion Freedom™ design
- Optimized for simple customization to reduce your inventory needs
- Simple wiring system allows three levels of brightness
- Use removable and replaceable optic lenses for shallow cabinets and channel letters

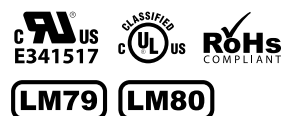
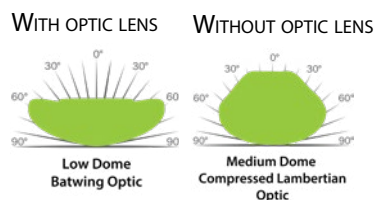
WIRING DETAILS

Gray	Negative
White	Positive (Low)
White/Black	Positive (Medium)
White & White/Black	Positive (High)

WIRING DIAGRAM



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Fusion Freedom Colors™



PRODUCT OPTIONS

Color	Wavelength	Setting	Efficacy	Intensity	Power	Run Footage	Part Number*
Red	625nm	Low	32 LM/W	19 LM/mod (38 LM/ft.)	0.6W/mod (1.2W/ft.)	50'	PL-FS2-RD5-N (M-FFCX0-RD)
		Medium	25 LM/W	23 LM/mod (46 LM/ft.)	0.93W/mod (1.86W/ft.)	30'	
		High	21 LM/W	25 LM/mod (50 LM/ft.)	1.2W/mod (2.4W/ft.)	25'	
Green	525nm	Low	37 LM/W	22 LM/mod (44 LM/ft.)	0.6W/mod (1.2W/ft.)	50'	PL-FS2-GR5-N (M-FFCX0-GR)
		Medium	31 LM/W	29 LM/mod (58 LM/ft.)	0.93W/mod (1.86W/ft.)	30'	
		High	27 LM/W	32 LM/mod (64 LM/ft.)	1.2W/mod (2.4W/ft.)	25'	
Blue	460nm	Low	9 LM/W	5 LM/mod (10 LM/ft.)	0.6W/mod (1.2W/ft.)	50'	PL-FS2-BL5-N (M-FFCX0-BL)
		Medium	8 LM/W	7 LM/mod (14 LM/ft.)	0.93W/mod (1.86W/ft.)	30'	
		High	7 LM/W	8 LM/mod (16 LM/ft.)	1.2W/mod (2.4W/ft.)	25'	

*"-N" denotes no lens, "P" denotes lens factory installed

Intensity is reduced by 10% if optical lens is used.

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6"	14"	9"	Lens	
7"	16"	10"	Lens	
8"	16"	12"	Lens	
6"	10"	7"	Without Lens	
7"	12"	8"	Without Lens	
8"-12"	12"	10"	Without Lens	

Note: Product and depth may vary depending on face material and desired brightness.

