Project		Catalog #		Type	
Prepared by		Notes		Date	

iO LED

MiniO Mini-Graze MMG

Linear accent with minimalistic form factor, remote driver, and precision optics.

Typical Applications
• Commercial Office Spaces • Schools • Hospitals • Retail • Municipal
• Hospitality • Restaurants

Interactive Menu

Product Certification

Top Product Features

- Precise optical performance with 10°x60°, 30°x60° and 60°x60° beam angles, plus additional asymmetric Lambertian optical distribution
- Low glare optics
- Low voltage electrical architecture, class 2 system with plug-and-play daisy-chaining of 6″, 1′ and 4′ fixtures
- Static surface mount bracket or >90° rotatable aiming bracket with 3G vibration rating provides flexible mounting options
- 5-year limited warranty

General Specification

Voltage	Constant Voltage
Visual Comfort	UGR<16 | 10° x 60° optical distribution
Housing Dimensions	0.83in x 0.95in. (W x H)
Lifetime	L70>60,000hrs
Environment	Indoor / Damp Location
Color Temperature (CCT)	2700K | 3000K | 3500K | 4000K | RGBW (3000K)*
Feed Location	See Figure 1 on page 3
Run Length	See Figure 2 on page 3

*Consult factory for additional CCT options

System Order Information - 24V Constant Voltage Fixture, Mounting, and Universal Driver

SAMPLE ORDER NUMBER: **MMG-05W-930-30x60-ID-S-B-021F/4-UNV-STD-AM**

Series	Power Level	Source	Optical Distribution	Environment	Fixture Color	Power Feed
MMG	**03W**=3W/ft **05W**=5 W/ft **06W**=6 W/ft* **08W**=8 W/ft	**927**=90 CRI | 2700K **930**=90 CRI | 3000K **935**=90 CRI | 3500K **940**=90 CRI | 4000K **RGBW**=RGBW (3000K)*	**10x60**=10° x 60° **30x60**=30° x 60° **60x60**=60° x 60° **ASYM**=Asymmetric Lambertian	**ID**=Indoor	**S**=Silver **W**=White* **B**=Black	**E** = End **B** = Bottom*
Notes	**Notes** *06W only available in RGBW Maximum run lengths are on page 3, Figure 2	**Notes** *RGBW available in 06W and End Feed (E) only	**Notes** *ASYM available with Surface Mount (SM) and End Feed (E) only	**Notes**	**Notes**	**Notes** Refer to Figure 1 on page 3 for feed diagrams *Bottom (B) feed not available in RGBW or ASYM

Total Continuous Run Length	Fixture Resolution	Voltage	Dimming Protocol	Mounting
XXXF/	**.5**=6" resolution **1**=1' maximum resolution **4**=4' maximum resolution	**UNV**=120V/277V	**STD**=0-10V **ND**=No Dim (On/Off) **DMX**=DMX512 Protocol**	**SM**=Surface Mount* **AM**=Adjustable Mount**
Notes If run length exceeds maximum run length per Figure 2 (page 3), the Total Continuous Run Length is resolved into multiple low-voltage runs which include the maximum number of fixtures and a UNV - 24V constant voltage driver with specified dimming protocol. For multiple runs specify each separately. For RGBW specifications, a DMX decoder (CLS-DMX-DECODER) and driver are provided for each low-voltage run.	**Notes** Specify maximum allowable fixture length in total continuous run length. Each low-voltage run will be composed of the minimum number of maximum fixture lengths plus additional nominal lengths in 6" and/or 1' increments (021F/4 is composed of (5) 4F fixtures and (1) 1F fixture. 021F/1 will be composed of (21) 1F fixtures)	**Notes** Refers to the input voltage of class 2 power supply and not the low voltage 24V fixtures	**Notes** **RGBW available in DMX protocol only. DMX Controller (CLS-DMX-WALL01) is ordered as an accessory from "Electrical Accessories" or provided by others STD driver is 90W nominal ND driver is 96W nominal DMX protocol provided with decoder and 90W nominal ND driver Do not exceed 95% loading of driver capacity Maximum Distance to Remote Driver table on page 4	**Notes** *SM available with end (E) feed only **SM required for ASYM optical distribution Standard mounting hardware supplied in silver. Contact factory for white or black mounting hardware options Two (2) brackets provided per fixture. For additional mounting brackets, w

Spare Components

Refer to "Total Continuous Run Length" notes in catalogue logic. All components below are supplied with each catalogue logic run length.

Catalog Number	Description
CLS-90D-JBOX01	90W Driver with 0-10V Dimming Module enclosed in Indoor Rated Junction Box
CLS-100ND-JBOX01	96W Driver with on/off functionality, enclosed in Indoor Rated Junction Box
CLS-DMX-DECODER	RGBW DMX Decoder
MMG-SM-MNT01-S	Two (2) MMG Surface-Mount Brackets - Silver Finish
MMG-ADJ-MNT01-S	Set of 2 MMG >+/-90° Adjustable Mounting Brackets - Silver Finish
MMG-SMASYM-MNT02-S	Set of 2 MMG Asymmetric Distribution Brackets - Silver Finish

Optical Accessories

To be specified separately from catalogue logic for post-installation.

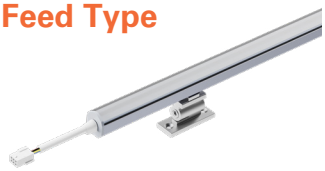
Catalog Number	Description
CLS-LVRHALF-1F-B	1ft 45deg Half Shielding Louver - Black 4ft fixtures require 4x 1F accessories
CLS-LVRFULL-1F-B	1ft Full Shielding Louver - Black 4ft fixtures require 4x 1F accessories

Electrical Accessories

To be specified in addition to catalogue logic

Catalog Number	Description
MMG-JHARN01-003-W	MMG 3" Jumper Static White
MMG-JHARN01-012-W	MMG 12" Jumper Static White
MMG-JHARN01-048-W	MMG 48" Jumper Static White
MMG-JHARN01-144-W	MMG 144" Jumper Static White
MMG-JHAR1-DMX-003W	MMG 3" Jumper RGBW
MMG-JHAR1-DMX-012W	MMG 12" Jumper RGBW
MMG-JHAR1-DMX-048W	MMG 48" Jumper RGBW
MMG-JHAR1-DMX-144W	MMG 144" Jumper RGBW
CLS-DMX-WALL01	DMX Wall Station with Preset Scenes

Feed Type



End (E) Feed

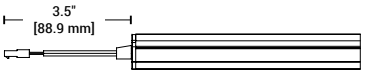
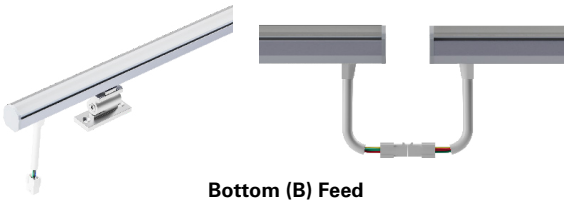
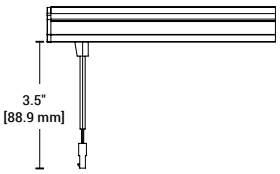


Figure 1



Bottom (B) Feed
*not available with Surface Mount (SM)



Maximum Run Lengths

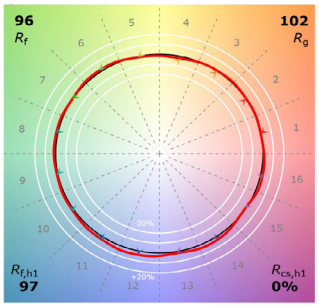
MMG	Max Run Length of Luminaries	
	STD Driver	ND Driver
W/ft	90W	96W
03W	30ft	32ft
05W	18ft	19ft
06W	*	14ft
08W	11ft	12ft

Figure 2

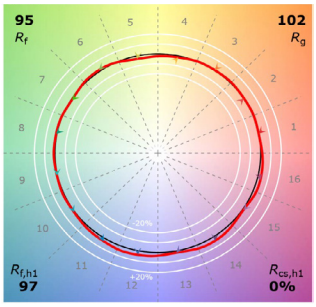
*0-10V dimming not required. DMX Controller will control intensity.

TM-30 Data

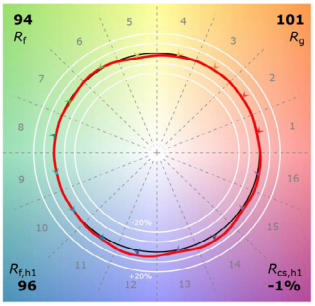
2700K



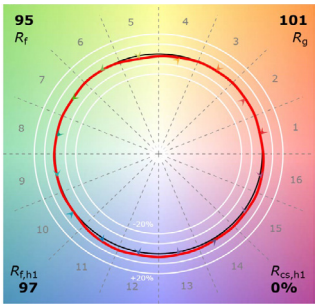
3000K



3500K



4000K



Color Rendering

CCT	CRI	Rf	Rg	R9
2700K	95	96	102	98
3000K	94	95	102	99
3500K	93	94	101	99
4000K	95	95	101	99

Photometric Performance

Static White

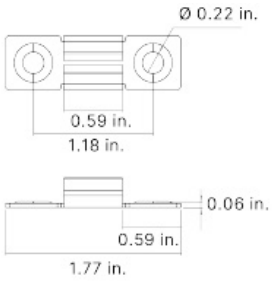
MMG	Optical Distribution	CCT							
		2700K		3000K		3500K		4000K	
		Lms /ft	Max cd/ft	Lms /ft	Max cd/ft	Lms /ft	Max cd/ft	Lms /ft	Max cd/ft
03W	10° x 60°	78	280	78	281	79	284	84	304
	30° x 60°	130	129	130	129	132	131	141	140
	60° x 60°	118	78	118	78	119	79	128	85
	ASYM	189	62	190	62	192	62	205	67
05W	10° x 60°	140	502	140	503	141	508	151	544
	30° x 60°	233	231	234	232	236	234	253	250
	60° x 60°	211	140	212	140	214	142	229	152
	ASYM	339	110	340	110	343	112	367	119
08W	10° x 60°	223	799	223	801	225	810	241	866
	30° x 60°	372	368	372	369	376	373	403	399
	60° x 60°	336	223	337	224	341	226	365	242
	ASYM	540	176	541	176	547	178	585	190

RGBW

MMG	Channel	Wattage per Foot	Optical Distribution							
			10° x 60°		30° x 60°		60° x 60°		ASYM	
			Lms /ft	Max cd/ft	Lms /ft	Max cd/ft	Lms /ft	Max cd/ft	Lms /ft	Max cd/ft
06W-RGBW	Red	1.4	12	47	13	12	11	8	24	8
	Green	1.3	40	135	47	46	42	26	77	25
	Blue	1.1	5	17	8	8	7	5	17	5
	White (3000K)	1.5	33	112	51	48	46	30	98	32
	All	5.5	105	390	131	131	117	73	210	68

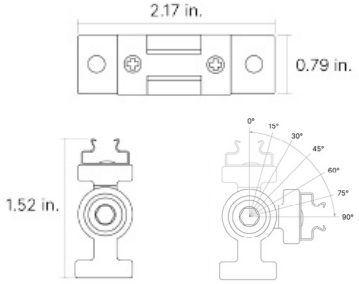
Mounting Options

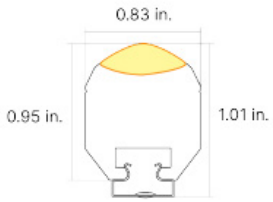
Surface Mount Bracket
***available with End (E) feed option only**

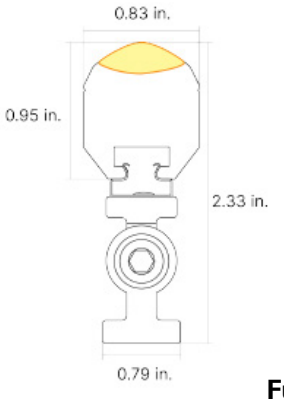


Adjustable Mount Aiming Bracket
***available with end and bottom feed**

10° x 60° | 30° x 60° | 60° x 60°

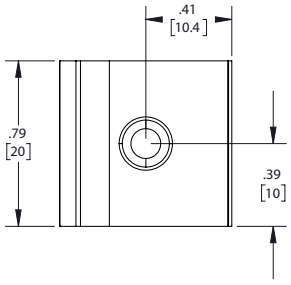


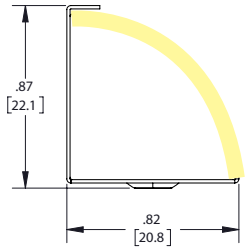




Surface Mount Bracket

Asymmetric Lambertian - ASYM





Half Louver
(CLS-LVRHALF-1F-B)

Full Louver
(CLS-LVRFULL-1F-B)

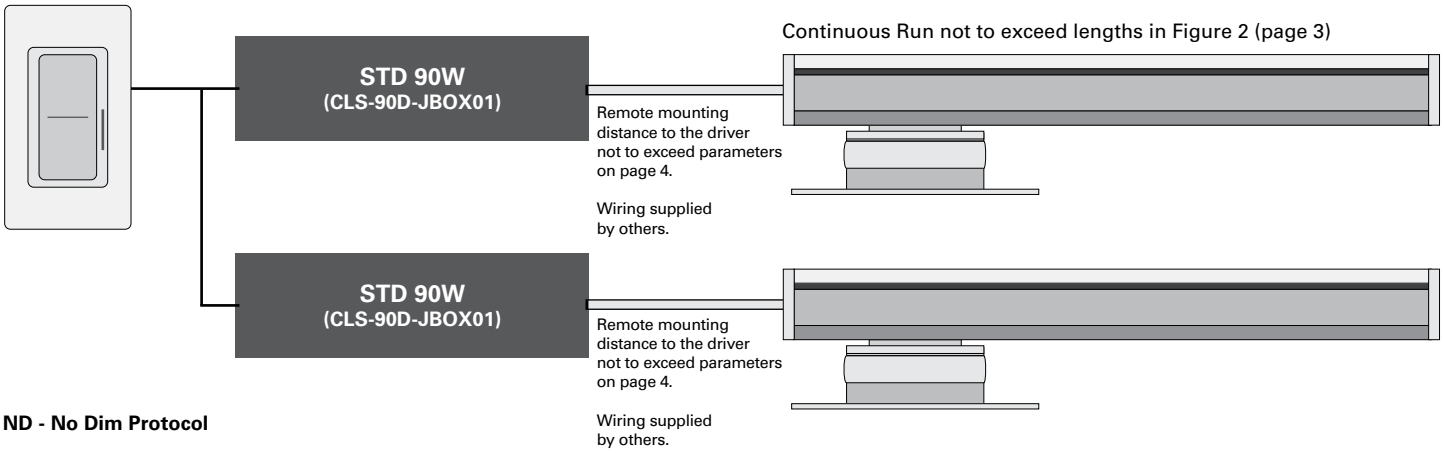
Maximum Distance to Remote Driver

24V Voltage Drop & Wire Length Distance Chart

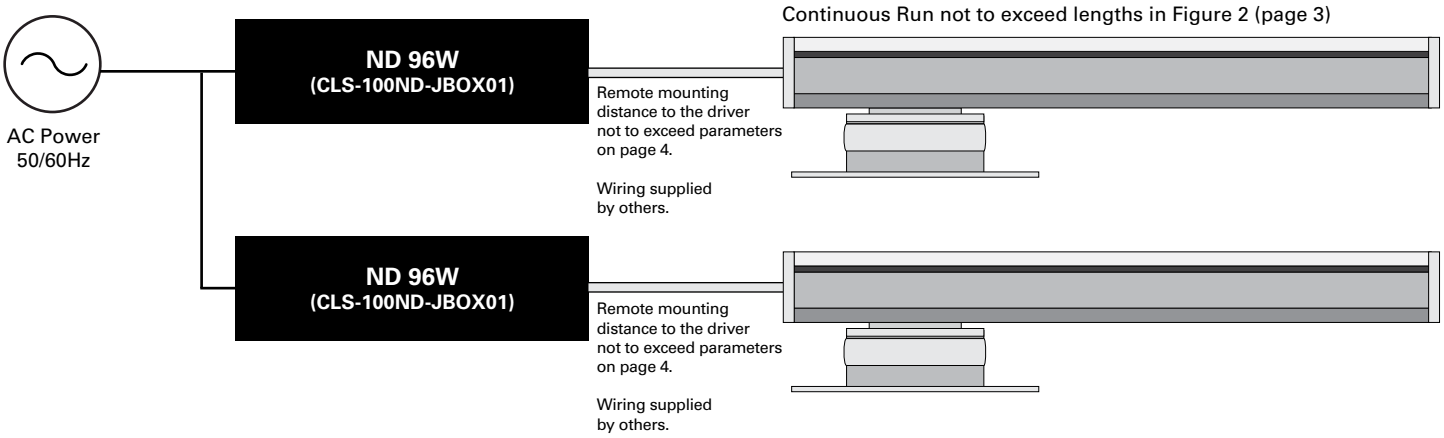
Wire Gauge	10 W .42 A	20 W .83 A	30 W 1.3 A	40 W 1.7 A	50 W 2.1 A	60 W 2.5 A	70 W 2.9 A	80 W 3.3 A	90W 3.75 A	100 W 4. 2 A
20 AWG	85 ft.	43 ft.	27 ft.	21 ft.	17 ft.	14 ft.	12 ft.	11 ft.	9 ft.	8 ft.
18 AWG	134 ft.	68 ft.	45 ft.	33 ft.	27 ft.	22 ft.	19 ft.	17 ft.	15 ft.	14 ft.
16 AWG	215 ft.	109 ft.	72 ft.	54 ft.	43 ft.	36 ft.	31 ft.	27 ft.	24 ft.	22 ft.
14 AWG	345 ft.	174 ft.	115 ft.	86 ft.	69 ft.	57 ft.	49 ft.	43 ft.	39 ft.	36 ft.
12 AWG	539 ft.	272 ft.	181 ft.	135 ft.	108 ft.	90 ft.	77 ft.	68 ft.	61 ft.	56 ft.
10 AWG	784 ft.	397 ft.	263 ft.	197 ft.	158 ft.	131 ft.	112 ft.	98 ft.	97 ft.	82 ft.

System Architecture – MMG-0XW (Static White)

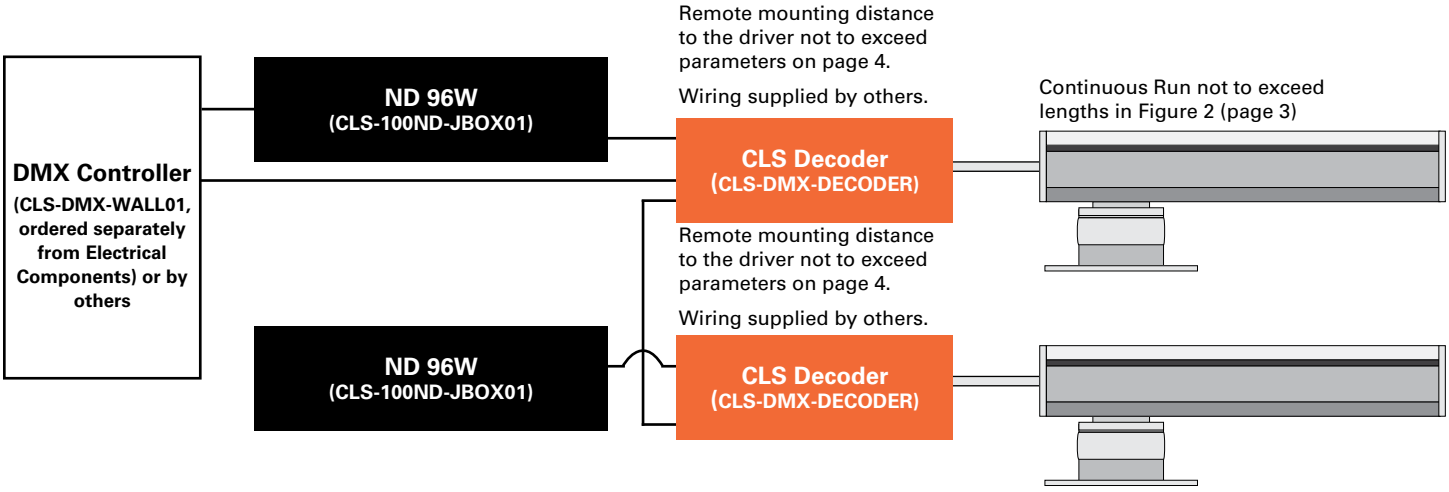
STD - 0-10V Dimming Protocol



ND - No Dim Protocol

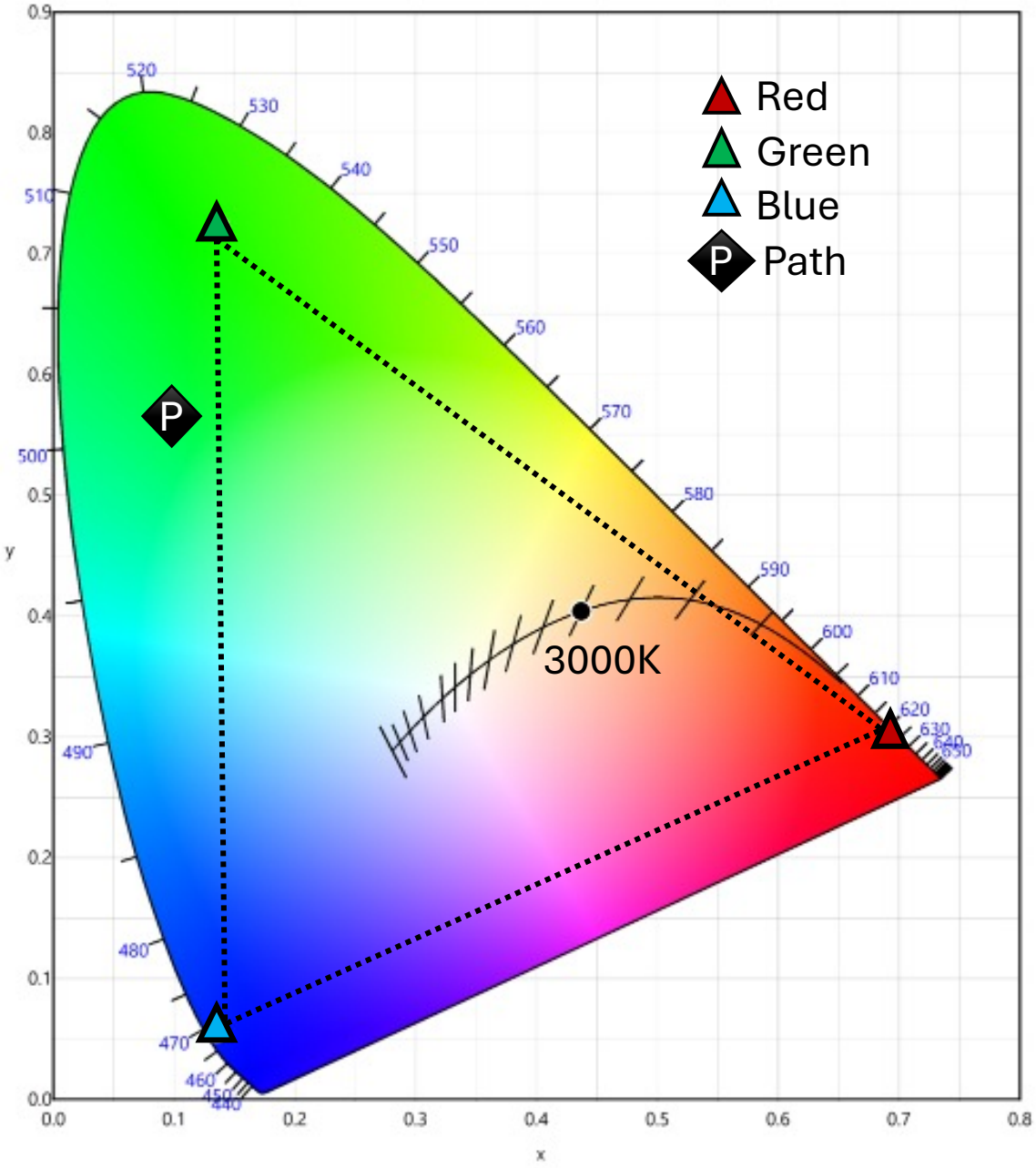


System Architecture – MMG-06W-RGBW



Up to 10 decoders may be daisy chained with RJ45 cable. Consult factory for additional options if exceeding 10 decoders.

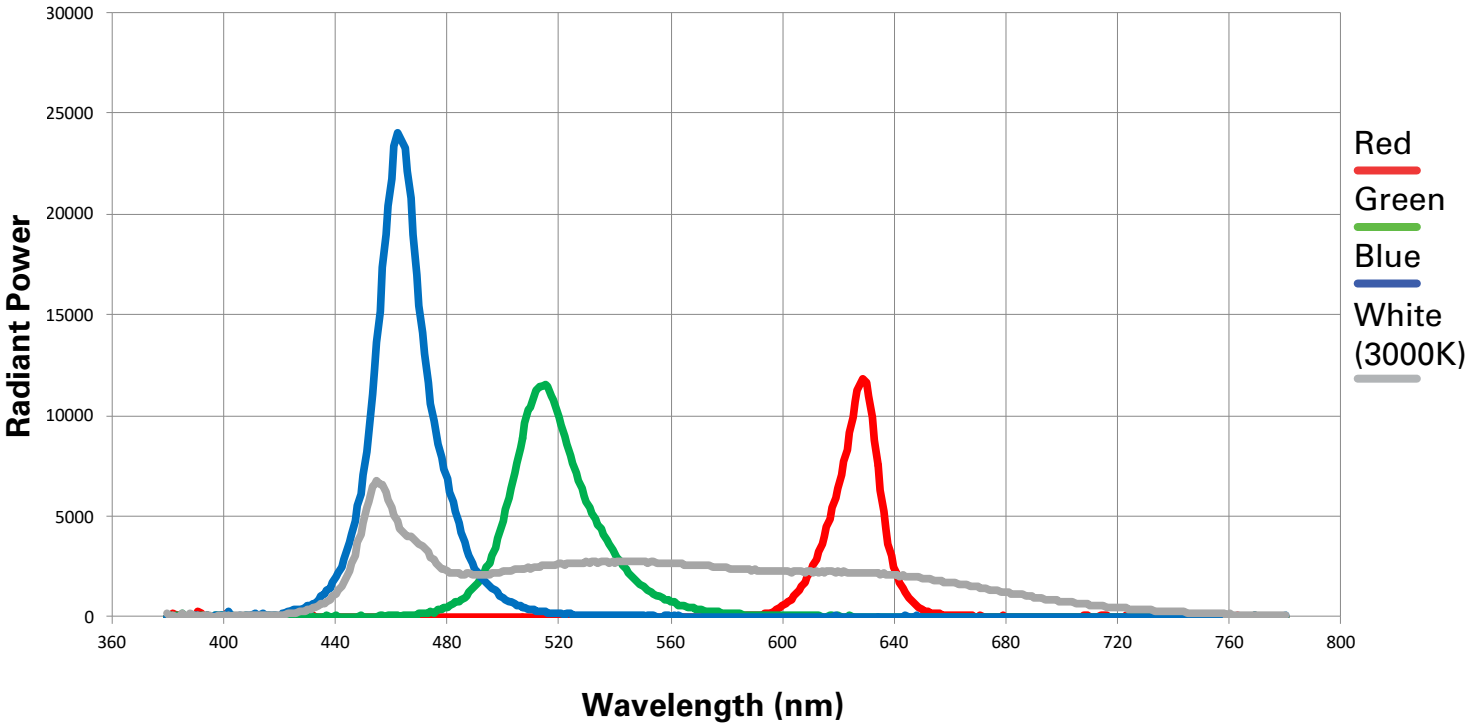
RGBW Characteristics



MiniO Mini-Graze MMG Color Gamut and Path

- The triangular Gamut within the Planckian Locus is derived from the dominant wavelength of the red, green and blue LEDs in MMG, and determines the theoretical color range of the luminaire.
- Any color (x, y coordinate) inside the perimeter Path P is achievable by mixing light levels of the red, green, and blue LEDs.
- The white LED channel enables true 3000K white on the black body curve and enables the desaturation of intense RGB colors, introducing more enriched pastel colors.

Peak Wavelengths (Red | Green | Blue)



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