

M22-LK

LED UPGRADE KIT

DATE: _____ LOCATION: _____
 TYPE: _____ PROJECT: _____
 CATALOG #: _____

FEATURES

- Reliable, uniform, glare free illumination
- Types II, III, IV, V and custom distributions
- 3000K, 4000K, 5000K CCT
- 0-10V dimming ready
- Integral surge suppression
- 15 standard powder coat finishes
- Upgrade Kits



SPECIFICATIONS

CONSTRUCTION

- All internal and external hardware are stainless steel
- Luminaire finish consists of a five stage pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish.
- Optical bezel finish matches the luminaire housing

LED/OPTICS

- Molded silicone gasket ensures a weather-proof seal around each individual LED
- Features revolutionary individual LED optical control based on high performance TIR optical designs
- House Side Shield is available on Standard and Clear Lens options except any Type 5 distribution. House Side Shield is not available for any distribution using a Diffused Lens

INSTALLATION

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious

MITRE™



Mitre Medium LED Deck

RELATED PRODUCTS

[M22-LK](#)

[M2 Install](#)

personal injury.

ELECTRICAL

- Luminaires shall have integral surge protection that shall be U.L. recognized and have a surge current rating of 10,000 Amps using the industry standard 8/20uSec wave and surge rating of 372J
- Drivers shall be U.L. recognized with an inrush current maximum of <20.0 Amps maximum at 230VAC
- Drivers shall not be compatible with current sourcing dimmers, consult factory for current list of known compatible dimming systems, approved dimmers include Lutron Diva AVTV, Lutron Nova NFTV and NTFTV

CERTIFICATIONS

- ETL listed under UL 1598 and CSA C22.2 No. 250.0-08 for wet locations

WARRANTY

- See [HLI Standard Warranty](#) for additional information

HOUSING

M22-LK									
Housing	Fixture	LED Quantity	Lumen output	CCT/CRI	Distribution	Optional Shield	Finish		
M22-LK Mitre Upgrade kit	D Existing Down Fixture	36L 36 LED	260	260mA, 4000 Lumens	5K7	5000K, 70 CRI	HS House Side Shield ²	AGN	Antique Green
			325	450mA Microcore Crossover	4K7	4000K, 70 CRI		BL	Black
	420		420mA, 6000 Lumens	3K7	3000K, 70 CRI	BLT		Matte Black	
	475		700mA Microcore Crossover	AMB Amber-595nm Peak ¹	4W	Type IV Wide		CRT	Corton
	615		615mA, 7500 Lumens		5Q	Type V Square		DB	Dark Bronze
					5W	Type V Wide		DGN	Dark Green
	U Existing Up Fixture						GT	Graphite	
							LG	Light Gray	
							MAL	Matte Aluminum	
							MDB	Metallic Bronze	
							MG	Medium Gray	
							TT	Titanium	
							VBU	Verde Blue	
							WDB	Weathered Blue	
							WH	White	
							CC	Custom Color ³	

Optional Fuse	Voltage
SF Single Fuse (120, 277)	UNV 120-277V
DF Double Fuse (208, 240)	

Notes:

- 1 Wild life friendly
- 2 House side Shield is available only with T1, T2, T3 and T4W distributions
- 3 Consult factory

DELIVERED LUMENS

The table below shows the delivered lumens for the various lumen outputs and beam distributions. Use this chart in connection with the lumen factor (LF) capability to deliver any output required.

LED #	Drive Current	Lumen Package	Lens	Distribution	3000K 70CRI				4000K 70CRI				5000K 70CRI						
					Lumen	Bug Rating			Efficacy (Lm/W)	Lumen	Bug Rating			Efficacy (Lm/W)	Lumen	Bug Rating			Efficacy (Lm/W)
36	260	4000	None	1	4061	1	0	0	126.2	4162	1	0	0	129.3	4370	1	0	0	135.3
				2	3734	1	0	1	116.0	3826	1	0	1	118.9	4018	1	0	1	124.5
				3	3684	1	0	1	114.2	3775	1	0	1	117.5	3964	1	0	1	122.6
				4W	3663	1	0	2	113.8	3753	1	0	2	116.6	3941	1	0	2	122.7
				1-HS	2330	0	0	0	72.4	2387	0	0	0	74.2	2507	0	0	0	78.2
				2-HS	2017	0	0	0	62.7	2067	0	0	0	64.2	2170	0	0	0	67.2
				3-HS	1967	0	0	1	61.1	2016	0	0	1	62.6	2117	0	0	1	66.1
				4W-HS	2047	0	0	1	63.6	2098	0	0	1	65.2	2203	0	0	1	68.6
				5Q	3867	2	0	0	120.2	3963	2	0	0	123.1	4161	2	0	0	129.5
			5W	3759	2	0	1	116.8	3852	2	0	1	119.7	4045	3	0	1	125.8	
			Clear	1	3479	1	0	0	108.1	3565	1	0	0	110.8	3744	1	0	0	116.3
				2	3199	1	0	1	99.4	3278	1	0	1	101.9	3442	1	0	1	107.0
				3	3156	1	0	1	98.1	3234	1	0	1	100.5	3396	1	0	1	105.7
				4W	3138	1	0	1	97.5	3215	1	0	1	99.9	3376	1	0	1	104.9
				1-HS	1996	0	0	0	62.0	2045	0	0	0	63.6	2148	0	0	0	66.7
				2-HS	1728	0	0	0	53.7	1770	0	0	0	55.0	1859	0	0	0	57.8
				3-HS	1686	0	0	1	52.4	1727	0	0	1	53.7	1814	0	0	1	56.4
				4W-HS	1754	0	0	1	54.5	1797	0	0	1	55.9	1887	0	0	1	58.6
	5Q	3313		2	0	0	103.0	3395	2	0	0	105.5	3565	2	0	0	110.8		
	5W	3221	2	0	1	100.1	3300	2	0	1	102.6	3465	2	0	1	107.7			
	Diffused	3	2643	1	0	1	82.3	2708	1	0	1	84.4	2844	1	0	1	88.5		
		5W	2638	1	0	1	82.2	2704	1	0	1	84.2	2839	1	0	1	88.6		
		1	4948	1	0	0	119.9	5070	1	0	0	122.9	5324	1	0	0	129.1		
	325	Microcore Crossover	None	2	4549	1	0	1	110.3	4661	1	0	1	113.0	4895	1	0	1	118.7
				3	4488	1	0	1	108.8	4599	1	0	1	111.5	4829	1	0	2	117.1
				4W	4462	1	0	2	108.2	4572	1	0	2	110.8	4801	1	0	2	116.4
				1-HS	2838	0	0	0	68.8	2908	0	0	0	70.5	3054	0	0	0	74.0
				2-HS	2457	0	0	0	59.6	2517	0	0	0	61.0	2644	0	0	0	64.1
				3-HS	2397	0	0	1	58.1	2456	0	0	1	59.5	2579	0	0	1	62.5
				4W-HS	2494	0	0	1	60.5	2556	0	0	1	62.0	2684	0	0	1	65.1
				5Q	4711	2	0	1	114.2	4827	2	0	1	117.0	5069	2	0	1	122.9
				5W	4580	3	0	1	111.0	4693	3	0	1	113.8	4928	3	0	1	119.5
			Clear	1	4239	1	0	0	102.8	4343	1	0	0	105.3	4561	1	0	0	110.6
				2	3897	1	0	1	94.5	3993	1	0	1	96.8	4193	1	0	1	101.7
				3	3845	1	0	1	93.2	3940	1	0	1	95.5	4137	1	0	1	100.3
				4W	3823	1	0	2	92.7	3917	1	0	2	95.0	4113	1	0	2	99.7
1-HS				2432	0	0	0	58.9	2492	0	0	0	60.4	2616	0	0	0	63.4	
2-HS				2105	0	0	0	51.0	2157	0	0	0	52.3	2265	0	0	0	54.9	
3-HS				2053	0	0	1	49.8	2104	0	0	1	51.0	2209	0	0	1	53.6	
4W-HS				2137	0	0	1	51.8	2190	0	0	1	53.1	2299	0	0	1	55.7	
5Q				4036	2	0	0	97.8	4136	2	0	0	100.3	4343	2	0	1	105.3	
5W	3923	3	0	1	95.1	4020	3	0	1	97.5	4222	3	0	1	102.3				
Diffused	3	3185	1	0	1	77.2	3264	1	0	1	79.1	3427	1	0	1	83.1			
	5W	3250	1	0	1	78.8	3330	1	0	1	80.7	3497	1	0	1	84.8			

DELIVERED LUMENS (CONTINUED)

The table below shows the delivered lumens for the various lumen outputs and beam distributions. Use this chart in connection with the lumen factor (LF) capability to deliver any output required.

LED #	Drive Current	Lumen Package	Lens	Distribution	3000K 70CRI				4000K 70CRI				5000K 70CRI						
					Lumen	Bug Rating			Efficacy (Lm/W)	Lumen	Bug Rating			Efficacy (Lm/W)	Lumen	Bug Rating			Efficacy (Lm/W)
36	420	6000	None	1	6054	1	0	1	122.0	6204	1	0	1	125.0	6514	1	0	1	131.3
				2	5566	1	0	1	112.2	5704	1	0	1	115.0	5989	1	0	1	120.7
				3	5492	1	0	2	110.7	5627	1	0	2	113.4	5909	1	0	2	119.1
				4W	5460	1	0	2	110.0	5595	1	0	2	112.7	5875	1	0	2	118.4
				1-HS	3473	0	0	0	70.0	3559	0	0	0	71.7	3737	0	0	0	75.3
				2-HS	3006	0	0	1	60.6	3081	0	0	1	62.1	3235	0	0	1	65.2
				3-HS	2933	0	0	1	59.1	3005	0	0	1	60.6	3156	0	0	1	63.6
				4W-HS	3052	0	0	1	61.5	3127	0	0	1	63.0	3284	0	0	1	66.2
				5Q	5765	2	0	1	116.2	5907	2	0	1	119.0	6203	2	0	1	125.0
			5W	5604	3	0	1	112.9	5742	3	0	1	115.7	6030	3	0	1	121.5	
			Clear	1	5187	1	0	0	104.6	5315	1	0	0	107.2	5581	1	0	0	112.5
				2	4769	1	0	1	96.1	4887	1	0	1	98.5	5131	1	0	1	103.5
				3	4705	1	0	1	94.9	4821	1	0	1	97.2	5062	1	0	1	102.1
				4W	4677	1	0	2	94.3	4793	1	0	2	96.6	5033	1	0	2	101.5
				1-HS	2975	0	0	0	60.0	3049	0	0	0	61.5	3202	0	0	0	64.5
				2-HS	2575	0	0	0	51.9	2639	0	0	0	53.2	2771	0	0	0	55.9
				3-HS	2513	0	0	1	50.7	2575	0	0	1	51.9	2704	0	0	1	54.5
				4W-HS	2615	0	0	1	52.7	2679	0	0	1	54.0	2813	0	0	1	56.7
	5Q	4939		2	0	1	99.6	5061	2	0	1	102.0	5314	2	0	1	107.1		
	5W	4801	3	0	1	96.8	4919	3	0	1	99.2	5166	3	0	1	104.1			
	Diffused	3	3897	1	0	1	78.6	3993	1	0	1	80.5	4193	1	0	1	84.5		
		5W	3977	2	0	1	80.2	4075	2	0	1	82.2	4279	2	0	1	86.3		
		1	6733	1	0	1	118.8	6900	1	0	1	121.8	7245	1	0	1	127.8		
	475	Microcore Crossover	None	2	6191	1	0	1	109.2	6344	1	0	2	111.9	6662	1	0	2	117.5
				3	6108	1	0	2	107.8	6259	1	0	2	110.4	6572	1	0	2	116.0
				4W	6072	1	0	2	107.2	6222	1	0	2	109.8	6534	1	0	2	115.3
				1-HS	3863	0	0	0	68.2	3958	0	0	0	69.8	4156	0	0	0	73.3
				2-HS	3344	0	0	1	59.0	3426	0	0	1	60.5	3598	0	0	1	63.5
				3-HS	3262	0	0	1	57.6	3342	0	0	1	59.0	3510	0	0	1	61.9
				4W-HS	3394	0	0	1	59.9	3478	0	0	1	61.4	3652	0	0	1	64.5
				5Q	6411	2	0	1	113.1	6570	3	0	1	115.9	6899	3	0	1	121.7
				5W	6233	3	0	1	110.0	6387	3	0	1	112.7	6706	3	0	1	118.3
			Clear	1	5769	1	0	0	101.8	5911	1	0	1	104.3	6207	1	0	1	109.5
				2	5304	1	0	1	93.6	5435	1	0	1	95.9	5707	1	0	1	100.7
				3	5233	1	0	2	92.3	5362	1	0	2	94.6	5630	1	0	2	99.4
				4W	5202	1	0	2	91.8	5331	1	0	2	94.1	5598	1	0	2	98.8
1-HS				3309	0	0	0	58.4	3391	0	0	0	59.8	3561	0	0	0	62.8	
2-HS				2864	0	0	0	50.5	2935	0	0	1	51.8	3082	0	0	1	54.4	
3-HS				2795	0	0	1	49.3	2864	0	0	1	50.5	3007	0	0	1	53.1	
4W-HS				2908	0	0	1	51.3	2980	0	0	1	52.6	3129	0	0	1	55.2	
5Q				5493	2	0	1	96.9	5628	2	0	1	99.3	5910	2	0	1	104.3	
5W	5340	3	0	1	94.2	5471	3	0	1	96.5	5745	3	0	1	101.4				
Diffused	3	4334	1	0	1	76.5	4441	1	0	1	78.4	4664	1	0	1	82.3			
	5W	4423	2	0	1	78.0	4532	2	0	1	80.0	4759	2	0	1	84.0			

DELIVERED LUMENS (CONTINUED)

The table below shows the delivered lumens for the various lumen outputs and beam distributions. Use this chart in connection with the lumen factor (LF) capability to deliver any output required.

LED #	Drive Current	Lumen Package	Lens	Distribution	3000K 70CRI				4000K 70CRI				5000K 70CRI							
					Lumen	Bug Rating			Efficacy (Lm/W)	Lumen	Bug Rating			Efficacy (Lm/W)	Lumen	Bug Rating			Efficacy (Lm/W)	
36	615	7500	None	1	8412	1	0	1	118.3	8619	1	0	1	121.2	9051	1	0	1	127.2	
				2	7734	1	0	2	108.7	7925	1	0	2	111.4	8322	1	0	2	117.0	
				3	7630	1	0	2	107.3	7819	1	0	2	109.9	8210	1	0	2	115.4	
				4W	7586	1	0	2	106.6	7773	1	0	3	109.3	8162	1	0	3	114.8	
				1-HS	4826	0	0	0	67.8	4945	0	0	0	69.5	5192	0	0	0	73.0	
				2-HS	4177	0	0	1	58.7	4280	0	0	1	60.2	4494	0	0	1	63.2	
				3-HS	4075	0	0	1	57.3	4176	0	0	1	58.7	4385	0	0	1	61.6	
				4W-HS	4240	0	0	1	59.6	4345	0	0	1	61.1	4563	0	0	2	64.1	
				5Q	8009	3	0	1	112.6	8207	3	0	1	115.4	8618	3	0	1	121.2	
				5W	7786	3	0	2	109.5	7978	3	0	2	112.2	8378	3	0	2	117.8	
				Clear	1	7206	1	0	1	101.4	7384	1	0	1	103.9	7754	1	0	1	109.1
					2	6626	1	0	2	93.2	6789	1	0	2	95.5	7129	1	0	2	100.3
			3		6537	1	0	2	91.9	6698	1	0	2	94.2	7034	1	0	2	98.9	
			4W		6499	1	0	2	91.4	6659	1	0	2	93.7	6993	1	0	2	98.4	
			1-HS		4134	0	0	0	58.1	4236	0	0	0	59.6	4448	0	0	0	62.6	
			2-HS		3578	0	0	1	50.3	3667	0	0	1	51.6	3850	0	0	1	54.2	
			3-HS		3491	0	0	1	49.1	3577	0	0	1	50.3	3756	0	0	1	52.8	
			4W-HS		3633	0	0	1	51.1	3723	0	0	1	52.4	3909	0	0	1	55.0	
			Diffused	5Q	6862	3	0	1	96.5	7031	3	0	1	98.9	7383	3	0	1	103.8	
				5W	6670	3	0	1	93.8	6835	3	0	1	96.1	7177	3	0	2	100.9	
				3	5415	1	0	1	76.2	5548	1	0	1	78.0	5826	2	0	1	81.9	
				5W	5525	2	0	1	77.7	5662	2	0	1	79.6	5945	2	0	1	83.6	

PHOTOMETRY

M2-36L-615-4K7-1

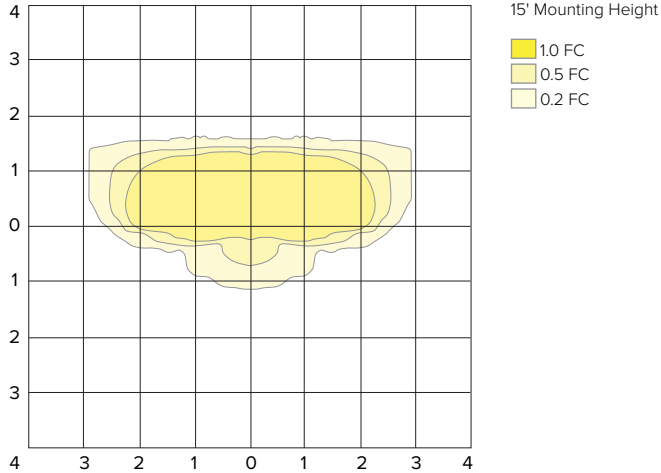
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	8619
Watts	71.13
Efficacy	121.2
IES Type	II
BUG Rating	B1-U0-G1
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	7652	89%
Downward House Side	967	11%
Downward Total	8619	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	8619	100%

ISOFOOT CANDLE PLOT



M2-36L-615-4K7-2

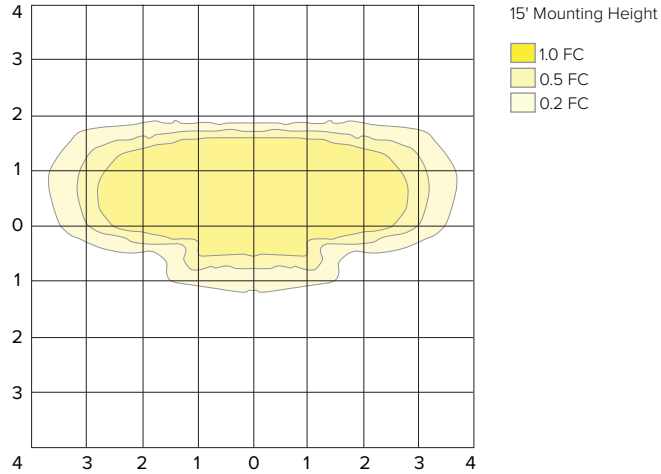
LUMINAIRE DATA

Description	4000 Kelvin, 70CRI
Delivered Lumens	7925
Watts	71.13
Efficacy	111.4
IES Type	II
BUG Rating	B1-U0-G2
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	6643	84%
Downward House Side	1281	16%
Downward Total	7925	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	7925	100%

ISOFOOT CANDLE PLOT



M2-36L-615-4K7-3

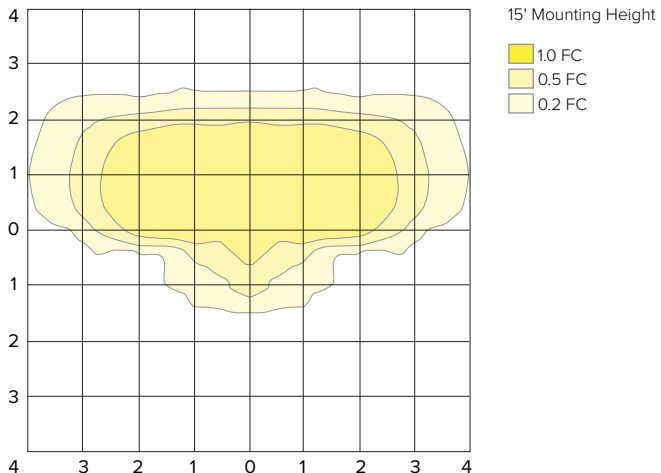
LUMINAIRE DATA

Description	4000 Kelvin, 70CRI
Delivered Lumens	7819
Watts	71.13
Efficacy	109.9
IES Type	III
BUG Rating	B1-U0-G2
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	6622	85%
Downward House Side	1197	15%
Downward Total	7819	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	7819	100%

ISOFOOT CANDLE PLOT



PHOTOMETRY

M2-36L-615-4K7-4W

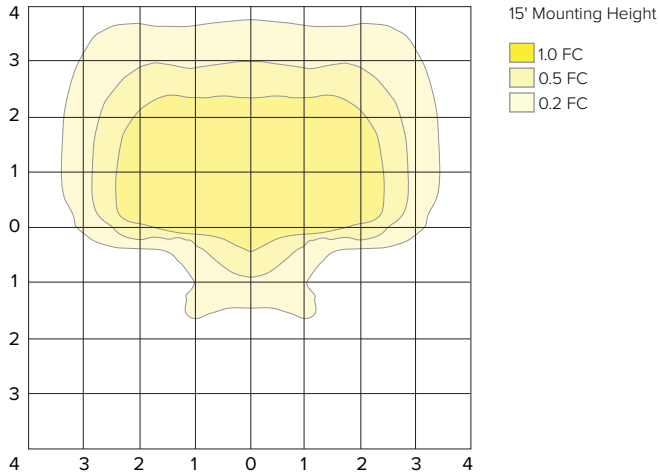
LUMINAIRE DATA

Description	4000 Kelvin, 70CRI
Delivered Lumens	7773
Watts	71.13
Efficacy	109.3
IES Type	IV
BUG Rating	B1-U0-G3
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	6846	88%
Downward House Side	927	12%
Downward Total	7773	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	7773	100%

ISOFOOT CANDLE PLOT



M2-36L-615-4K7-5Q

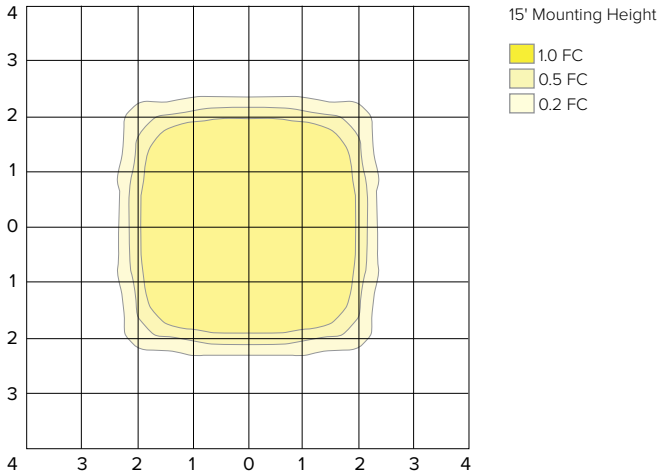
LUMINAIRE DATA

Description	4000 Kelvin, 70CRI
Delivered Lumens	8207
Watts	71.13
Efficacy	115.4
IES Type	VS
BUG Rating	B3-U0-G1
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	4103	50%
Downward House Side	4103	50%
Downward Total	8207	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	8207	100%

ISOFOOT CANDLE PLOT



M2-36L-615-4K7-5W

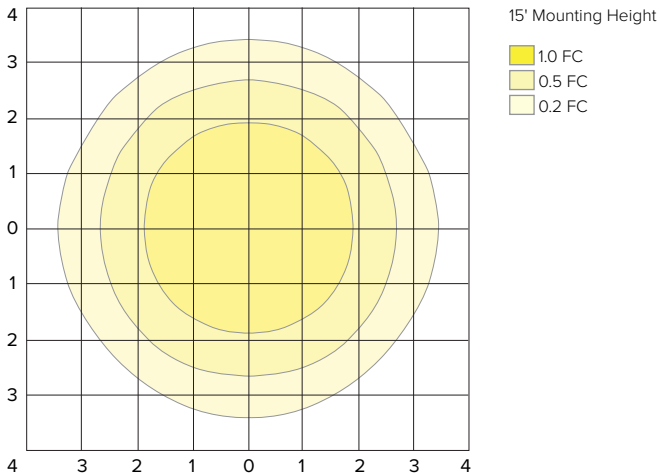
LUMINAIRE DATA

Description	4000 Kelvin, 70CRI
Delivered Lumens	7978
Watts	71.13
Efficacy	112.2
IES Type	VS
BUG Rating	B3-U0-G2
Mounting Height	15 ft
Grid Scale	15 ft

ZONAL LUMEN SUMMARY

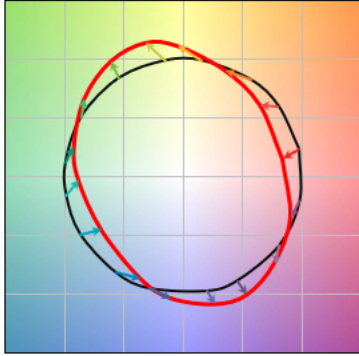
Zone	Lumens	% Luminaire
Downward Street Side	3989	50%
Downward House Side	3989	50%
Downward Total	7978	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	7978	100%

ISOFOOT CANDLE PLOT



TM-30 DATA

COLOR VECTOR GRAPHIC

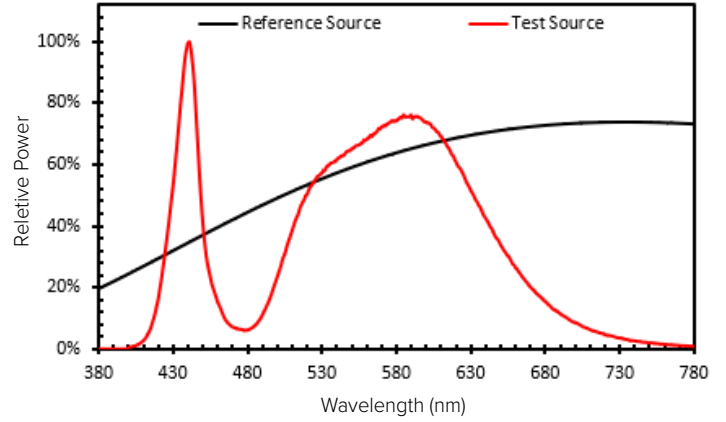


— Reference Illuminant — Test Source

TEST SOURCE

MBM TEST RESULTS	
CCT (K)	3947
CIE Ra	72
Duv	0.0004
x	0.3831
y	0.3793
Rf	68
Rg	99

SPECTRAL POWER DISTRIBUTION COMPARISON



ELECTRICAL DATA

System Current	System Watts	Electrical						Min. Power Factor	Max THD (%)	Dimming Range	Dimming			
		Line Voltage		Amps AC							Source current out of 0-10V		Absolute voltage range on 0-10V (+)	
		VAC	HZ	120	208	240	277				Min	Max	Min	Max
260 mA	32.2	120-277	50/60	0.27	0.15	0.13	0.12	>0.9	20	10% to 100%	0mA	1mA	0V	10V
325 mA	41.3			0.34	0.20	0.17	0.15							
420 mA	49.6			0.41	0.24	0.21	0.18							
475 mA	56.7			0.47	0.27	0.24	0.20							
615 mA	71.1			0.59	0.34	0.30	0.26							

AMBER MULTIPLIER	
CCT	MULTIPLIER
5000K	1
AM	0.1727

2700K MULTIPLIER	
CCT	MULTIPLIER
5000K	1
2700K	0.897

LENS OPTION MULTIPLIER	
CLEAR LENS	DIFFUSED LENS
0.8567	0.7096