

Project:	Catalog:	Type:
Notes:		

Product Description

The MSUi series provides supplemental lighting for the surgical / operating room. Commonly located above the table perimeter using Symmetric or Asymmetric distributions. It is UL Listed for wet locations, cleanroom ISO-3, certified dust tight and water resistant to IP65 for frequent rigorous cleaning practices. MSUi is Mil-Std-461G certified and designed for recessed mounting in surgical ceiling systems as well as grid and flanged installations.

Features

- Shallow Design, 4" Deep with Emergency
- Dimming to 1% (0-10v)¹
- Triple gasketed cleanroom construction
- Mil-Std-461G certified
- Smooth lens for easy cleaning
- Room side access to all electrical components²

Applications

- Medical Surgical Suites

Featured Options

- Fully luminous lens aperture option
- Up to 24,000 lumens
- Symmetric & Asymmetric options
- Optional 90CRI



Housing

Precision formed; hole-free seam welded 20 gauge cold rolled steel housing. One standard 1/2" trade-size conduit entrance hole. See options for additional material choices and row mounting. Closed cell neoprene gasket provided to seal flange to ceiling.

Door Frame

Inset one-piece door frame, fabricated from 20 gauge, cold rolled steel with TIG welded corners. Countersunk flat head, stainless steel, captive fasteners with integral silicone o-rings. Door frame is removable, reversible, and hinged by stainless steel aircraft cables. Highly resilient and chemical resistant CertaSeal micro cellular closed-cell gasket seals door frame to housing.

Lens

High diffusion, impact resistant 0.125" thick acrylic lens provides symmetric distribution. Smooth external surface for easy cleaning. Symmetric/asymmetric acrylic lens is optional. Radiated emissions (RE101) mitigated below Mil Std 461G limits by use of special filters and secondary circuit design elements. (This makes a metalized RFI grid no longer necessary.) Other lens options available. Lens sealed to door frame with silicone sealant.

Gasket Systems

Triple gasketed: Lens: RTV 100% pure silicone seals lens to door. Door: Highly resilient and chemical resistant CertaSeal micro cellular closed-cell gasket seals door frame to the housing. Housing: Closed cell neoprene gasket provided to seal flange to ceiling. Door screws: Silicone o-rings with special sealing flat-head screws.

LED

LED board modules are high efficiency and closely regulated to maintain CRI, color consistency, lumen performance, and efficacy. Select from 3000K, 3500K, 4000K, and 5000K color temperatures with a color consistency of 3 SDCM, standard 80 CRI, optional 90 CRI. Optional 525nm Green LEDs arrays available alone or in combination with white LEDs. Lifetime L70 is greater than 60,000 hrs. Modules are field replaceable and commercially available. For MSUi with Green LEDs [click here](#).

Electrical

The standard electronic driver is constant current, programmable and dimmable to 1%¹ using a 0-10V protocol. High efficiency (>85%) and low THD (<10%). Certified to Mil-Std-461G for conducted emissions as well as FCC Part 15. 120-277Vac or 347Vac, 50/60hz. See "Options" for Lutron™ or DALI driver choices. Internal Emergency Drivers are serviceable from the room side².

Mounting/Installation

Flange installation is supported by swing style mounting brackets. Grid installation suitable for 1" and 1.5" T-Bar ceilings. See ordering key for additional 2" T-Bar support (option C57) Ambient operating temperature: -4°F (-20°C) to 104°F (40°C).

Finish

5-stage pretreatment, polyester powder coating. Anti-microbial matte white optional (F36).

Certifications

UL listed (CAN & USA) for wet locations under covered ceiling. Recessed Type IC for insulated ceilings. NSF2 for Non-food zone, Splash Zone (See option X5 for Food Zone certification). IEC60598 IP65 Certified. Mil-Std-461G certified. Cleanroom classified ISO3-8.

Warranty

5-year limited warranty. For complete warranty, click here:

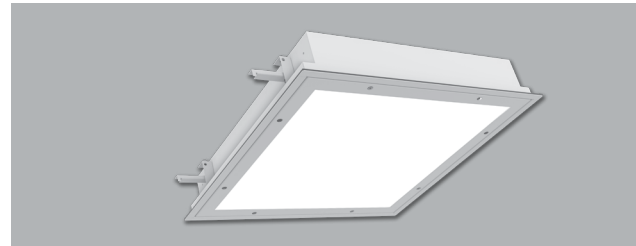


SPEEDSHIP

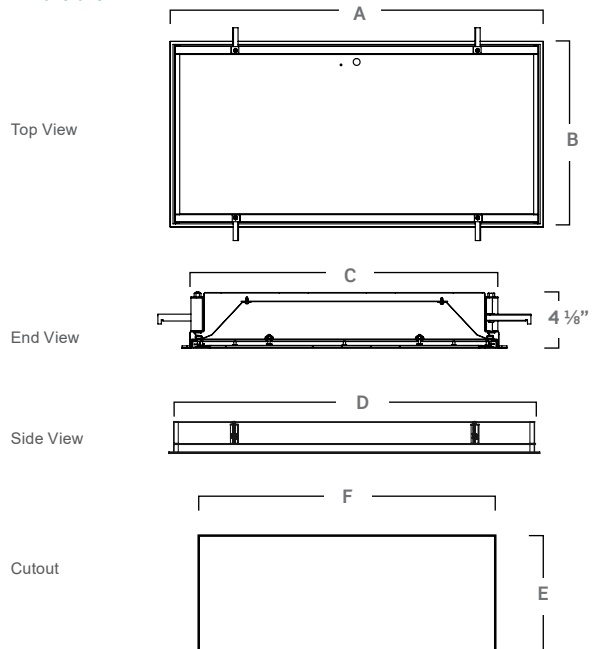
Refer to page 2 of the spec sheet for Speedship Items.

Approvals

- UL listed to CSA and UL standards for insulated ceilings and wet location.
- Certified IP65 & Certified NSF2. • RoHS Compliant.
- MIL STD 461G Certified. • Cleanroom class ISO3-8.



Dimensions



Dimensions (inch)						
Size	A	B	C	D	E	F
1x4	47.75	11.75	10.69	46.75	10.69	46.75
2x2	23.75	23.75	22.69	22.88	22.69	22.88
2x4	47.75	23.75	22.69	47.75	22.69	46.75

Consult the installation guide for exact dimensions.

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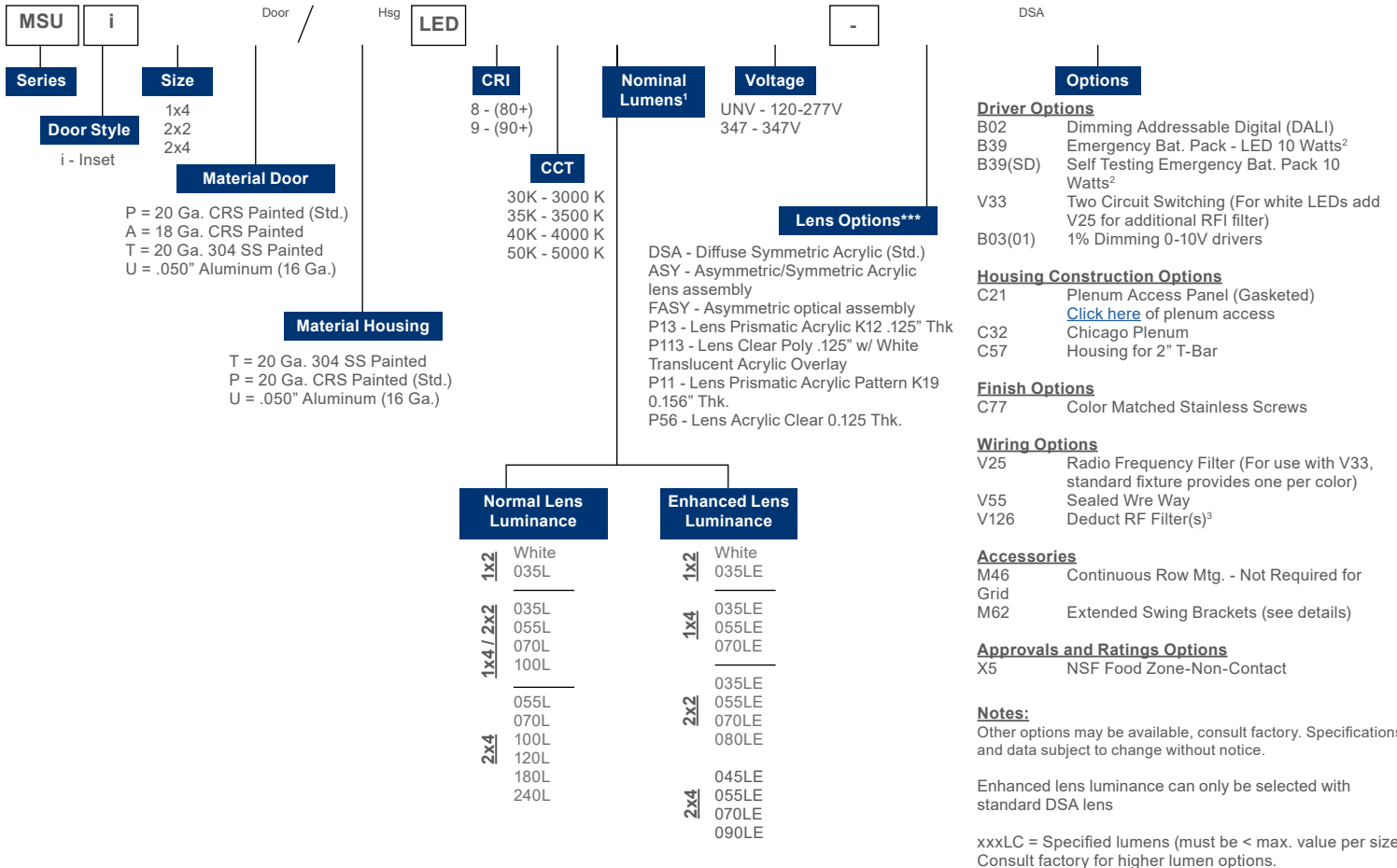
SPEEDSHIP»

Order Key for items that ship within 5 days.

SKU	Description
MSUi2x2A/P-led840K035LUNV-DSA	MSUi Inset Door Frame Size: 2x2
MSUi2x2A/P-led840K055LUNV-DSA	Material Door: A = 18 Ga. CRS Painted (Std.) Material Housing: P = 20 Ga. CRS Painted (Std.) CRI: 80+ CCT: 4000K
MSUi2x2A/P-led840K070LUNV-DSA	Lumens: 35L, 55L, 70L & 100L
MSUi2x2A/P-led840K100LUNV-DSA	Voltage: UNV - 120-277V Lens: DSA - Diffuse Symmetric Acrylic (Std.)
MSUi2x4A/P-led840K055LUNV-DSA	MSUi Inset Door Frame Size: 2x4
MSUi2x4A/P-led840K100LUNV-DSA	Material Door: A = 18 Ga. CRS Painted (Std.) Material Housing: P = 20 Ga. CRS Painted (Std.) CRI: 80+ CCT: 4000K
MSUi2x4A/P-led840K120LUNV-DSA	Lumens: 55L, 100L, 120L, 180L & 240L
MSUi2x4A/P-led840K180LUNV-DSA	Voltage: UNV - 120-277V
MSUi2x4A/P-led840K240LUNV-DSA	Lens: DSA - Diffuse Symmetric Acrylic (Std.)

Order Key

EXAMPLE: MSUi2x4-P/PLED840K70LUNV-DSA



¹ Standard for 100L, 120L, 180L & 240L is 5% dimming. Add option code "B03(01)" for 1% dimming for these lumen order codes.

² Standard emergency battery pack options are internal and serviced from the room side. The exception is for some 2x2 wattages may have remote battery packs. Consult factory for details.

³ Removal of RF filters will also remove Mil-Std-461 certification. Fixture continues to meet FCC requirements.

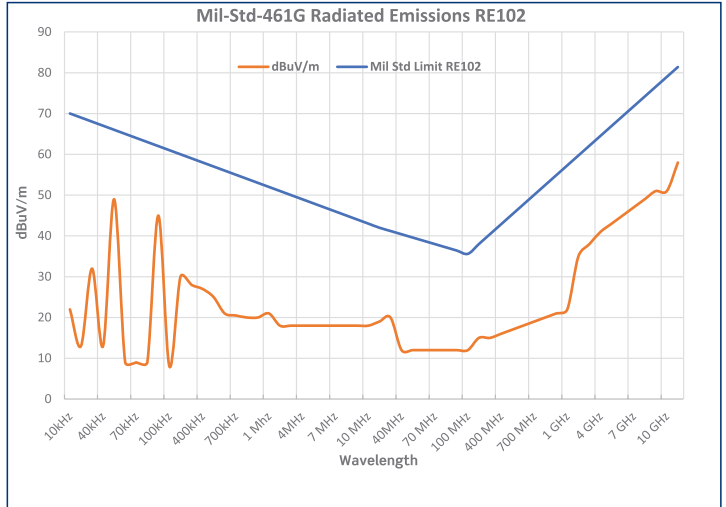
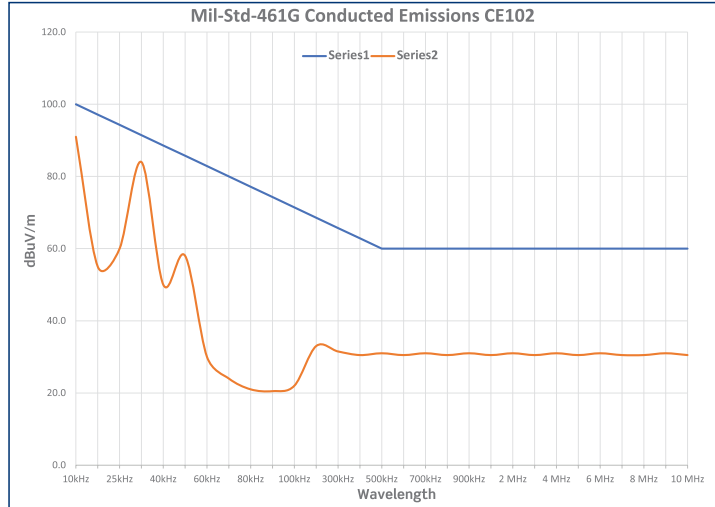
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White LED Performance Data				
Size	Nominal Lumens	Delivered Lumens	Watts	Efficacy
1x4	35L	3585	32	112
	55L	5538	51	109
	70L	7064	68	104
	100L	10100	96	105
2x2	35L	3564	31	115
	55L	5571	50	111
	70L	7035	65	108
	100L	10121	93	109
2x4	55L	5517	45	123
	70L	7085	59	120
	100L	10093	80	126
	120L	12096	99	122
	180L	18103	143	127
	240L	24102	198	122

LED Performance Multipliers		
CRI	CCT	Lumen Multipliers
80 CRI	3500K	0.98
	4000K	1.00
	5000K	1.04
90 CRI	3500K	0.83
	4000K	0.85
	5000K	0.90

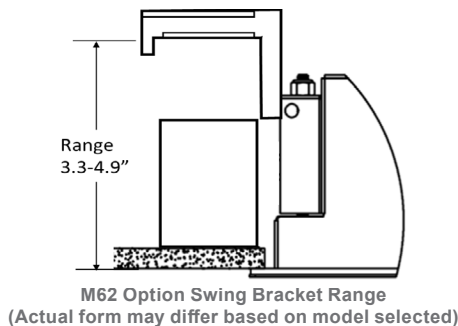
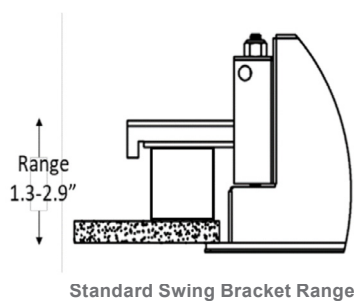
* Lumen values are based on 4000K, 80 CRI performance. See Lumen Multipliers below for other CCT or CRI performance data.

Mil-Std-461G Testing- Conducted and Radiated



Conducted measurements are taken from the fixture power input leads in a laboratory. Radiated emissions are measured in an anechoic chamber designed to absorb indirect signals from the environment. The limits are shown in the red lines. Performance is shown on the yellow line. For more information on Mil-Std-461G see the Certolux Technical Brochure. [Click here](#)

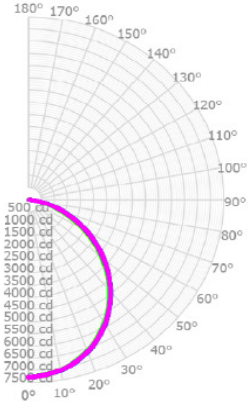
Installation Details



Project:	Catalog:	Type:
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Photometrics

IES File: MSUI-2x4-LED840K180LUNV-P/P-DSA
Lumens: 18102
Wattage: 143
Efficacy: 127



Zonal Lumen Summary

Zone	Lumens	%Fixture
0.0° - 30.0°	5522	30.5%
0.0° - 40.0°	8896	49.1%
0.0° - 60.0°	15053	83.2%
0.0° - 90.0°	18102	100.0%
0.0° - 110.0°	18102	100.0%
0.0° - 130.0°	18102	100.0%
0.0° - 150.0°	18102	100.0%
0.0° - 170.0°	18102	100.0%
0.0° - 180.0°	18102	100.0%

Coefficients of Utilization

ρc ρw	80%			70%			50%		
	70%	50%	30%	70%	50%	30%	70%	50%	30%
0	119	119	119	116	116	116	111	111	111
1	110	105	101	107	103	99	102	99	96
2	100	92	86	98	91	85	93	87	82
3	92	82	74	89	80	73	85	77	71
4	84	73	64	82	71	63	78	69	62
5	78	65	56	76	64	56	72	62	55
6	72	59	50	70	58	50	66	56	49
7	67	54	45	65	53	45	62	51	44
8	62	49	41	61	48	40	58	47	40
9	58	45	37	57	44	37	54	43	36
10	55	42	34	53	41	34	51	40	33

Average Luminance Table (cd/m2)

CP Summary			
	0.00	45.00°	90.00°
0.00°	10030	10030	10030
45.00°	8533	8358	8333
55.00°	7734	7459	7493
65.00°	6572	6116	6295
75.00°	4569	4058	4424
85.00°	1191	1822	2657

Effective Floor Cavity Reflectance: 20%

EM Ordering Guide

EM Function	Order Code	Description	Notes
Standard EM	B39	10W EM battery pack	Standard 10W output, 90 minute run time in emergency mode.
High Wattage EM	B39(20W)	20W EM battery pack	Standard 20W output, 90 minute run time in emergency mode.
347V EM	347...B39	8W 347V EM battery pack	Fixture part number indicates 347V input voltage.
347 High Wattage EM	347...B39(20W)	20W 347V EM battery pack	Fixture part number indicates 347V input voltage.
Self Testing EM	B39(SD)	10W Self test EM battery pack	Self test instructions provided with each fixture. Digital copies available as needed.
Cold Weather	B06...B39	10W Cold weather EM battery pack suitable to -20°C	Standard EM battery pack 0°C minimum temperature.
120 Minute EM	B39(2HR)	EM battery pack with 120 minute minimum run time	Standard 14W output, 120 minute run time in emergency mode.
Specified EM	B39(xx)	Customer to specify brand, model number and/or feature.	xx Indicates model number of specified by Viscor.