MSUi-DFX

LED - Recessed Surgical Luminaire with 365DisInFx™ and WavePort™ technology

CERTOLUX | a **LEVITON** brand

Project:	Catalogue #:	Type:
Notes:		

Product Description

The MSUi-DFX series provides a UVA source from an inset door luminaire to provide a simple and effective way of adding surface disinfection to surgical suites. It also has advanced cleanroom features for supplemental lighting of the surgical/operating room. It offers symmetric or asymmetric distributions when located above the surgical table perimeter. It is 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 and grid and flanged installations. The MSU-DFX featuring Leviton's WavePort™ technology harnesses the power of 365DisInFx to kill bacteria while delivering superior white light.

Featured Options

- Integral Emergency Packs
- 90 CRI LEDs

Housing

Precision formed, seam welded, one-piece, hole-free construction. 20 gauge cold rolled steel standard. Rigid 18 gauge flange with welded and rounded corners for safety. Gasketed and cable hinged access panel in rear surface of housing.

Door Frame

Inset one-piece door frame, fabricated from 18 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. High performance silicone gasket seals door frame to housing.

Lens & Lens Retention

Each aperture contains a high diffusion 0.125" thick acrylic lens that provides a symmetric distribution. UVA transmissive and resistant materials used in DFX aperture. Smooth external surface for easy cleaning. Each lens is secured continuously along their perimeter with steel rails. Asymmetric acrylic distributions are 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: High performance Poron™ gasket seals door frame to 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. Lifetime L70 is greater than 60,000 hrs. Modules are field replaceable and commercially available.

UVA Light Engine

365nm UVA LED board modules are proprietary and designed for long life and continuous operation. These non-dimming drivers are factory programed for proper output and continuous operation and are separately circuited from the visible light engine. Modules are field replaceable. UVA output is certified to risk group zero based on safety testing according to IEC 62471 and UL standards.

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 side[2].

Finish

5 Stage pretreatement and gloss white polyester powder coated after fabrication. ASTM B117 1000hr Salt Spray tested. Stainless Steel is available with a choice of brushed #4 polished finish or gloss white polyester powder coated.

Installation

Flange installation is supported by swing style mounting brackets. Grid installation suitable for 1" and 1.5" T-Bar NEMA LE4 Type G ceilings. See ordering key for use with 2" T-Bar Grid systems. (option C57) Consult factory for compatibility with non-standard grid systems). Ambient operating temperture: -4°F (-20°C) to 104°F (40°C).

Safety

Safety: 24-hour dosage is designed to operate below human health exposure limits per IEC 62471 Photobiological Safety for Lamps and Lamp Systems standard and American Conference of Governmental Industrial Hygienists (ACGIH®) TLVs® guidelines. This fixture has assigned to Risk Group 0 (Zero) per this standard. *Risk Group 0 (Zero) is the lowest test group and requires no special warnings or cautions. See the Application Guide for proper installation and use. UVA emitted from this product. Install in compliance with manufacturer instructions to prevent risk of personal injury from UV radiation.

Listings, Certifications and Ratings

UL listed ANSI/UL1598 for wet locations under covered ceiling. Recessed Type IC for insulated ceilings. UL Listed UL8802 Germicidal Systems, IEC60598 IP65 Certified. Mil-Std-461G certified. Cleanroom classified ISO3-8. EPA # xxxxx-xx-x

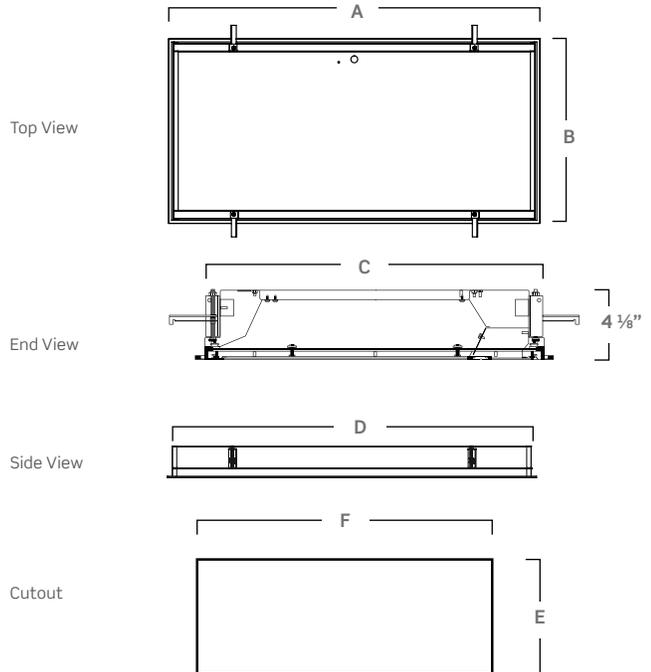## Warranty

5 year limited warranty. For complete warranty,

5YR Warranty

Approvals

- Certified IP65 & Certified NSF2.
- Cleanroom class ISO3.

[NSF] [IP 65] [ISO 3]

Dimensions

Top View — A, B

End View — C, 4 ⅛"
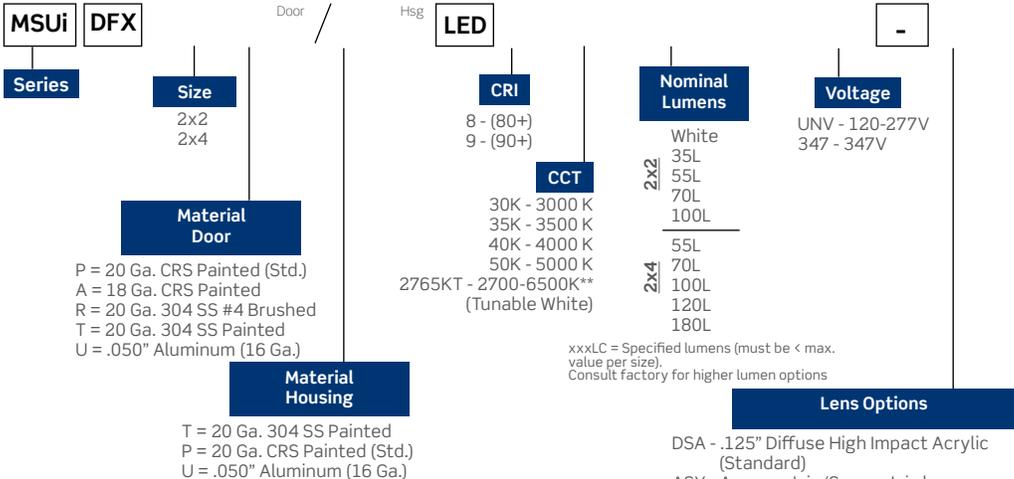
Side View — D

Cutout — F, E

Test Results

365DisInFx™ UVA disinfection technology was tested using in-vitro methods (as described in Livingston, Kvam[1],[2]) which resulted in 99.7% reduction in MRSA on surfaces exposed to 3W/m2 of 365nm UVA over a single 8-hour period. Results of this testing also showed significant reduction over a similar exposure period of certain common pathogens including Staphylococcus aureus, Enterococcus faecalis, Escherichia coli, Acinetobacter baumannii, Pseudomonas aeruginosa, Candida albicans and auris, associated with Hospital Acquired Infections (HAIs). Photobiological science and mathematical modeling enables us to calculate expected inactivation rates for 24-hour continuous operation of the 365DisInFx™ UVA technology

* 365DisInFXTM is a trademark of Current Lighting Solutions, LLC.

Project:	Catalogue #:	Type:

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Order Key

EXAMPLE: MSUi-DFX2x4A/PLED840K100LUNV-DSA

MSUi | DFX | Door / | Hsg | LED | | - | | DSA

Series

Size
2x2
2x4

Material Door
P = 20 Ga. CRS Painted (Std.)
A = 18 Ga. CRS Painted
R = 20 Ga. 304 SS #4 Brushed
T = 20 Ga. 304 SS Painted
U = .050" Aluminum (16 Ga.)

Material Housing
T = 20 Ga. 304 SS Painted
P = 20 Ga. CRS Painted (Std.)
U = .050" Aluminum (16 Ga.)

CRI
8 - (80+)
9 - (90+)

CCT
30K - 3000 K
35K - 3500 K
40K - 4000 K
50K - 5000 K
2765KT - 2700-6500K**
(Tunable White)

Nominal Lumens

White

2x2
35L
55L
70L
100L

2x4
55L
70L
100L
120L
180L

xxxLC = Specified lumens (must be < max. value per size).
Consult factory for higher lumen options

Voltage
UNV - 120-277V
347 - 347V

Lens Options
DSA - .125" Diffuse High Impact Acrylic (Standard)
ASY - Asymmetric/Symmetric lens assembly
FASY - Asymmetric lens assembly
P13 - Inverted Prismatic Acrylic Lens 0.125"
P103 - .125" Clear Polycarbonate w/ Diffuse inside layer
C/F - Consult Factory for glass and other lens options

Options

Driver Options
B02   Dimming Addressable Digital (DALI)
B39   Emergency Bat. Pack - LED 10 Watts*
B39(ST)   Emergency Bat. Pack, Self-Testing - LED 10 Watts*
V33   Two Circuit Switching (Add V25, below, if desired)

Housing Construction Options
C57   Housing for 2" T-Bar (Consult factory for compatibility)
C106   Silicone Free Construction

Finish Options
F06   Standard Gloss White (Not Antimicrobial)
C77   Color Matched Stainless Door Screws

Wiring Options
V25   Radio Frequency Filter
V55   Sealed wireway
V126   Deduct RF Filtering

Accessories
M70   Install Frame, (Typ. for wet plaster ceilings)
M46   Continuous Row Mtg. - Not Required for Grid

* 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 regarding 2x2 with emergecy pack options.

** When Selecting 2765KT, if a tunable whitecompatible control is not selected the luminaire will come standards with two sets of 0-10V wires for dimming and color tuning. For compatible control options please consult factory.
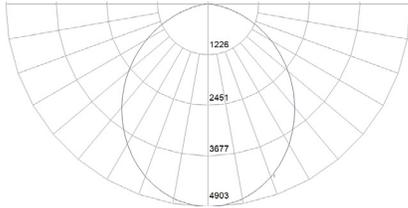
Performance Data

Size	Lens	Lumens	Delivered Lumens	Watts	Efficacy	UVA Watts
2x2	DSA	035L	3527	27.5	128	14
		055L	5544	45	123	14
		070L	7083	59.2	120	14
		100L	1092	84.3	13	14
	ASY	035L	3133	27.5	114	14
		055L	4924	45	109	14
		070L	6291	59.2	106	14
		100L	8963	84.3	106	14
	FASY	035L	3003	27.5	109	14
		055L	4720	45	105	14
		070L	6030	59.2	102	14
		100L	8591	84.3	102	14
2x4	DSA	055L	5589	43.1	130	29
		070L	7055	55	128	29
		100L	10038	80.6	125	29
		120L	12012	98.3	122	29
		180L	18076	149.4	121	29
	ASY	055L	4963	43.1	115	29
		070L	6265	55	114	29
		100L	8915	80.6	111	29
		120L	10669	98.3	109	29
		180L	16053	149.4	107	29
	FASY	055L	4758	43.1	110	29
		070L	6006	55	109	29
		100L	8546	80.6	106	29
		120L	10226	98.3	104	29
		180L	15634	149.4	105	29

Please note that values may change without notice.

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Photometrics

MSU-DFX-2X4-LED840K120Lxxx-DSA

Luminance Data (cd/sq.m)			
Angle Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	5674	5590	5622
55	5141	5043	5062
65	4431	4281	4278
75	3272	3054	2609
85	1605	1440	361

Characteristics	
Luminaire Lumens	12013
Efficacy Rating	123
Luminaire Watts (Visible Only)	98
Spacing Criterion (0 - 180)	120
Spacing Criterion (90 - 270)	120
Spacing Criterion (Diagonal)	130

Zonal Lumen Summary	
Zone	Lumens
0-30	3696
0-40	5937
0-60	10029
0-90	12013
90-180	0

MSU-DFX2X4-LED840K120Lxxx-ASY
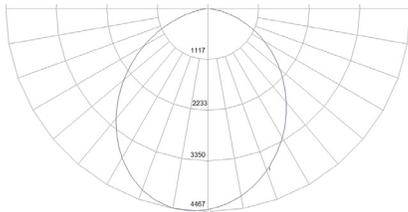
Luminance Data (cd/sq.m)			
Angle Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	4625	4674	4944
55	4198	4204	4454
65	3638	3586	3752
75	2734	2604	2301
85	1447	1314	298

Characteristics	
Luminaire Lumens	10669
Efficacy Rating	109
Luminaire Watts (Visible Only)	98
Spacing Criterion (0 - 180)	1.12
Spacing Criterion (90 - 270)	1.18
Spacing Criterion (Diagonal)	1.3

Zonal Lumen Summary	
Zone	Lumens
0-30	3323
0-40	5322
0-60	8938
0-90	10669
90-180	0

MSU-DFX2X4-LED840K120Lxxx-FASY
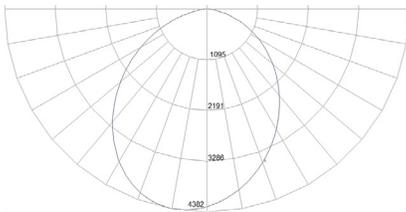
Luminance Data (cd/sq.m)			
Angle Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	4178	4274	4703
55	3771	3823	4220
65	3249	3242	3544
75	2413	2325	2167
85	1232	1143	257

Characteristics	
Luminaire Lumens	10227
Efficacy Rating	104
Luminaire Watts (Visible Only)	98
Spacing Criterion (0 - 180)	108
Spacing Criterion (90 - 270)	1.18
Spacing Criterion (Diagonal)	1.28

Zonal Lumen Summary	
Zone	Lumens
0-30	3202
0-40	5120
0-60	8575
0-90	10226
90-180	0

Make An Informed Decision

- UV radiation can pose a risk of personal injury. Overexposure can result in damage to the eyes and bare skin. To reduce the risk of overexposure, equipment must be installed following the manufacturer's site planning and application recommendations, including minimum ceiling height restrictions.
- UV solutions are intended for common high traffic spaces and not recommended for dwellings or home use.
- Installation of the devices should be performed by qualified professionals as detailed in the MSUi-DFX installation guide.
- To allow for occupancy during use, this fixture complies with IEC 62471 – Photobiological Safety of Lamps and Lamp Systems standards and American Conference of Governmental Industrial Hygienists (ACGIH®) TLVs® guidelines when installed as directed.
- Certolux's UV products are meant to be used in conjunction with other protective measures like manual cleaning and the use of proper PPE. They are not a substitute for other measures.
- Certolux products are not intended to be used as a medical device.
- If combining two or more UV solutions, whether from Certolux / Viscor, a Leviton company and/or other manufacturers, please consult a trained product application representative to ensure the total irradiance (UV dose) does not exceed recommended human exposure limits. To the extent UV solutions are combined, it may impact inactivation rates.