

DIRECT, DIRECT/INDIRECT

# SEALWERX SERIES







Intertek



# DIRECT, DIRECT/INDIRECT

# SEALWERX SERIES

Lumenwerx
Lumenwerk

Project:			
-			
	-		
Typo:			

# Order Guide

LUMINAIRE ID	DISTRIBUTION	ENVIRONMENT 1		DIRECT OPTIC	INDIRECT OPTIC Specify NA for Direct fixture	LIGHT SOURCE 5
V4SEALP						
V4SEALP - Via 4" Seal	<b>D</b> - Direct <b>DI</b> - Direct/Indirect	<u>Direct:</u> <b>IP66</b> - IP66-Rated	<u>Direct/Indirect:</u> <b>IP65</b> - IP65-Rated	EPDO - Environmentally	EPIO - Environmentally Protected Indirect Optic	SW - Static white FS - Full spectrum static white
Pendant		IP65EC - IP65-Rated Electrical Components IP54 <sup>2</sup> - IP54-Rated IP44 <sup>2</sup> - IP44-Rated	IP44 <sup>2</sup> - IP44-Rated	Protected Direct Optic ASDO - Asymmetric Soft	ASIO <sup>3</sup> - Asymmetric Soft Indirect Optic WIO2 <sup>4</sup> - Widespread Indirect Optic	BIOSST <sup>6</sup> - BIOS Biological Static BIOSDY <sup>6</sup> - BIOS Biological Dynamic BIOSTU <sup>6</sup> - BIOS Biological Tunable
		<sup>1</sup> See page 4 for more informatio installation details for each envi <sup>2</sup> Fixture must be installed with c	ronment option.	Direct Optic	NA - Not applicable  3 Not available with BIOS. 4 Not available with BIOSTU.	<sup>5</sup> Chromawerx SOLA and DUO also available. Consult factory for RGBW. <sup>6</sup> See page 7 for details.

CRI	DIR. LUM. PACK.	INDIR. LUM. PACK. Specify NA for Direct fixture	COLOR TEMP.	LUMINAIRE LENGTH	VOLTAGE	DRIVER <sup>17</sup>
80CRI 7 - 80 + CRI 90CRI 7.8 - 90 + CRI 95CRI 9 - 95 + CRI  7Not available with full spectrum.  8 Not available with BIOS. 9 Only available with full spectrum.	500LMF - Low output 500 lm/ft 750LMF 10 - Medium output 750 lm/ft 1000LMF 10.11 - High output 1000 lm/ft 10 Not available with BIOS. 11 Not available with full spectrum.	500LMF - Low output 500 lm/ft 750LMF <sup>12</sup> - Medium output 750 lm/ft 1000LMF <sup>12, 13</sup> - High output 1000 lm/ft NA - Not applicable <sup>12</sup> Not available with BIOS. <sup>13</sup> Not available with full spectrum.	27K 14 - 2700K 30K - 3000K 35K - 3500K 40K - 4000K 50K 14 - 5000K 14 Not available with BIOS.	#FT#IN 15 - Specify nominal length (#) in 1' and/or 1" increments  Standard nominal lengths: Single units: 2' to 12' Continuous runs: lengths over 12'  15 Minimum 2' for Direct. Minimum 3' for Direct/Indirect.	120V - 120V 277V - 277V - 277V UNV - 120V-277V 347V 16 - 347V	D1 - 1% 0-10V ELV 18 - ELV 120V TRI 18 - TRIAC 120V DA 19 - DALI LDE1 19 - Lutron Hi-lume 1% Eco ELD1 - eldoLED 1% ECOdrive 0-10V ELD0 - eldoLED 0.1% SOLOdrive 0-10V LTD10 - Low-temperature 10% 0-10V  7 See page 4 for driver temperature ranges. 8 Available with 120V only. 9 On-site commissioning is required.

ELECTRICAL	ELECTRICAL SECTIONS (optional) 25, 26	POWER FEED	MOUNTING 33	FINISH	OPTION
		TF			
1C - 1 circuit 2C 20 - 2 circuits #MC 21 - Multi circuit EC - Emergency-powered fixture NL - Night light fixture DL - Daylight fixture GTD 22, 23, 24 - Generator transfer device fixture  20 Available for Direct/Indirect only. Separate direct and indirect circuits. 21 Specify total number of circuits (#), including any circuits required for electrical section options. Provide drawing or layout specifications. Minimum 4' section per circuit. 22 Minimum 4' fixture. 23 Not available with 347V. 24 Not available for environments where the ambient temperature falls below 0°C (32°F).	#EC## <sup>27</sup> - Emergency-powered section #NL## <sup>27</sup> - Night light section #DL## <sup>27</sup> - Daylight section #GTD## <sup>27</sup> - 28, <sup>29</sup> , <sup>30</sup> - Generator transfer device section #EMB <sup>29</sup> , <sup>30</sup> , <sup>31</sup> , <sup>32</sup> - Emergency battery NA - None <sup>25</sup> Specify with multi circuit (#MC) electrical option only. <sup>36</sup> Provide drawing or layout specifications. Consult factory for other configurations. Default section length is 4: <sup>27</sup> Specify quantity (#), and section length in inches (##). <sup>28</sup> Minimum 4' section. <sup>29</sup> Not available with 347V. <sup>30</sup> Not available for environments where the ambient temperature falls below 0°C (32°E). <sup>31</sup> Specify quantity (#), All batteries will be on the same circuit. Each battery powers a 4' section. For Direct/Indirect, minimum 8' fixture. <sup>32</sup> Only available with 1954 and 1944.	<b>TF</b> - Top feed	STS - Stem, standard STC() - Stem, custom  33 Standard canopies are black for black fixtures, and white for all other finishes. See page 3 for full details on standard and custom options.	W - Matte white AL - Aluminum B - Matte black WA - White antimicrobial Silverwerx CF# - Custom finish, specify RAL#	CRF - Corrosion- resistant finish NA - None



DIRECT, DIRECT/INDIRECT

# SEALWERX SERIES

# Pendant Mounting Code

### Standard

For a standard mounting, please refer to the information below.

#### MOUNTING

# STS - Stem, standard

- ∙Ø 5" for power canopy
- •Ø 5" for non-power canopy
- $\cdot$  Canopies are black for black fixtures, and white for all other fixture finishes
- · Stem finish is the same color as fixture
- Stem length is 18"
- · Stem is not field adjustable
- $\boldsymbol{\cdot}$  Power cord is black for black fixtures, and white for all other fixture finishes

### Custom

# Stem

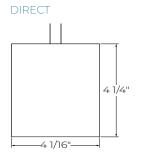
For a custom mounting, specify the options in the parentheses.

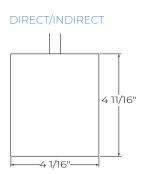
Example: STC(5NPC-36IN-W-STW-SLS)

**Lumenwerx** 

MOUNTING					
STC()					
	NON-POWER CANOPY SIZE	STEM LENGTH	CANOPY FINISH	STEM COLOR	OPTION
STC	<b>5NPC</b> - Ø 5" non-power canopy	18IN - 18" 36IN - 36" #IN ¹ - Specify length in inches  ¹Minimum length is 6°. Maximum length is 72". Stem is not field adjustable.	W - Matte white AL - Aluminum B - Matte black CF# - Custom finish, specify RAL#	STW - Matte white STAL - Aluminum STB - Matte black STCF# - Custom finish, specify RAL#	SLS - Sloped ceiling for stem NA - None

# **Dimensions**









DIRECT, DIRECT/INDIRECT

resistance

### SEALWERX SERIES



water

Moderate exposure to

the elements

Continuous line of

light over 12'

resistance

INDOOR

OUTDOOR

Under canopy, slightly exposed

protected splash

resistance

Under canopy, not exposed

larger splash

than 1mm resistance

protected

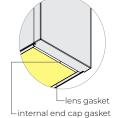
Wipe down application Healthcare application Cleanroom application

Directly exposed to the

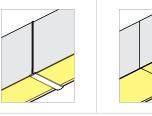
elements

Wipe down application Healthcare application

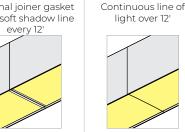




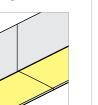








Driver: in a sealed enclosure Electrical connections: water and dust proof





**L**umenwerx

**Direct/Indirect** 

OUTDOOR

INDOOR

Particles Water

protected

larger splash than 1mm | resistance

Under canopy,

not exposed

Wipe down application

Healthcare application

**IP65** 

Dust tight | Moderate

Moderate exposure to

the elements

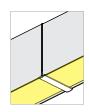
Wipe down application

Healthcare application

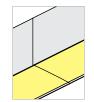
Cleanroom application

water

resistance



external end cap gasket



-internal end cap gasket

weep hole

-lens gasket

Driver: in a sealed enclosure Electrical connections: water and dust proof

LED boards: conformal coated for maximum protection

<b>LED boards</b> : conformal	coated for	maximum
protection		

	,		perature Range		
	LDE1	ELV / TRI	DA / ELD1 / ELD0	Dī	LTD10
Minimum temperature:	0 °C / 32 °F	-10 °C / 14 °F	-20 °C / -4 °F	-30 °C / -22 °F	-40 °C / -40 °F
Maximum temperature:			40 °C / 104 °F		





DIRECT, DIRECT/INDIRECT

# SEALWERX SERIES

# Photometrics

Values calculated based on a 4' fixture at 3500K and 80+ CRI for all optics.

#### DIRECT



LM/FT	W/FT	LM/W
500	4.9	101
750	7.7	98
1000	10.5	95



LM/FT	W/FT	LM/W
500	4.4	113
750	7	107
1000	9.7	103

**Lumenwerx** 

# MULTIPLIERS

Use this table to get results for different color temperatures and CRI for all photometric tables.

Multiplier - CCT/CRI

ССТ	WATTS		LP	w
	80+ CRI	90+ CRI	80+ CRI	90+ CRI
2700K	1.05	1.27	0.95	0.79
3000K	1.02	1.23	0.98	0.81
3500K	1.00	1.19	1.00	0.84
4000K	1.00	1.19	1.00	0.84
5000K	0.96	1.12	1.04	0.89



DIRECT, DIRECT/INDIRECT

# SEALWERX SERIES

# Photometrics

Values calculated based on a 4' fixture at 3500K and 80+ CRI for all optics.

#### DIRECT/INDIRECT



EPDO - EPIO



EPDO - ASIO



**Lumenwerx** 

EPDO - WIO2

1000 1250	10.1	99
1250	17.2	
	13.2	95
1500	16.3	92
1250	12.9	97
1500	15.8	95
1750	19.0	92
1500	15.8	95
1750	18.8	93
2000	22.0	91
	1250 1500 1750 1500 1750	1250 12.9 1500 15.8 1750 19.0 1500 15.8 1750 18.8

LM/FT		TOTAL	W/FT	LM/W
D	- 1	LM/FT		
EPDO	ASIO			
	500	1000	9.2	109
500	750	1250	11.6	108
	1000	1500	14.2	106
	500	1250	11.9	105
750	750	1500	14.3	105
	1000	1750	16.8	104
1000	500	1500	14.9	101
	750	1750	17.2	102
	1000	2000	19.8	101

LM/FT		TOTAL	W/FT	LM/W
D	1	LM/FT		
EPDO	WIO2			
	500	1000	9.1	110
500	750	1250	11.5	109
	1000	1500	14.0	107
	500	1250	11.8	106
750	750	1500	14.2	106
	1000	1750	16.7	105
	500	1500	14.7	102
1000	750	1750	17.2	102
	1000	2000	19.6	102







LM/FT		TOTAL	W/FT	LM/W
D	1	LM/FT		
ASDO	EPIO			
	500	1000	9.6	104
500	750	1250	12.6	99
	1000	1500	15.8	95
	500	1250	12.1	103
750	750	1500	15.2	99
	1000	1750	18.4	95
	500	1500	14.9	101
1000	750	1750	17.9	98
	1000	2000	21.3	94

LM/FT		TOTAL	W/FT	LM/W
D	1	LM/FT		
ASDO	ASIO			
	500	1000	8.6	116
500	750	1250	11.1	113
	1000	1500	13.6	110
	500	1250	11.2	112
750	750	1500	13.6	110
	1000	1750	16.2	108
	500	1500	14.0	107
1000	750	1750	16.4	107
	1000	2000	18.9	106

ASDO - WIO2				
LM	/FT	TOTAL	W/FT	LM/W
D	1.0	LM/FT		
ASDO	WIO2			
	500	1000	8.5	117
500	750	1250	11.0	114
	1000	1500	13.5	111
	500	1250	11.2	112
750	750	1500	13.5	111
	1000	1750	16.1	109
1000	500	1500	13.9	108
	750	1750	16.2	108
	1000	2000	18.9	106

# MULTIPLIERS

Use this table to get results for different color temperatures and CRI for all photometric tables.

Multiplier - CCT/CRI

сст	WATTS		LP	w
	80+ CRI	90+ CRI	80+ CRI	90+ CRI
2700K	1.05	1.27	0.95	0.79
3000K	1.02	1.23	0.98	0.81
3500K	1.00	1.19	1.00	0.84
4000K	1.00	1.19	1.00	0.84
5000K	0.96	1.12	1.04	0.89



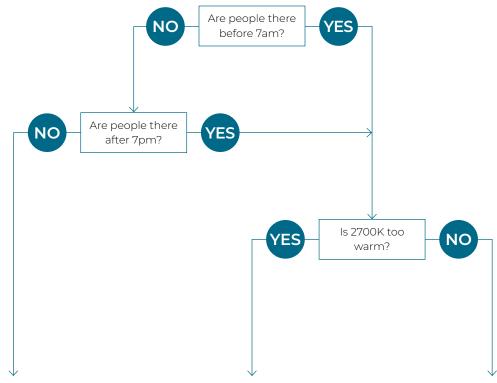


DIRECT, DIRECT/INDIRECT

# SEALWERX SERIES

# BIOS

Three BIOS Circadian LED solutions are offered – Biological Static, Biological Dynamic, and Biological Tunable. Use the decision tree below to identify when and where to use BIOS Wellness LED Lighting Solutions.



*	•	•	
Biological Static BIOSST	Biological Dynamic BIOSDY	Biological Tunable BIOSTU	
No CCT change when dimmed	500K shift when dimmed Dims to 2700K		
Daytime solution	Daytime + evening solution	Daytime + evening solution	
Spaces in operation during daytime hours, between 7am and 7pm	Spaces in operation overnight, after 7pm and before 7am, and when CCT color shift in the evening is not preferred	Suitable for spaces in operation overnight, after 7pm and before 7am, and where people do not sleep (CCT color shift in the evening is preferred)	
E.g. offices, medical/dental offices	E.g. hospitals E.g. offices, shiftwork		
200 420 400 000 640 000 020 020 000 700 740 700	Daytime   Full BIOS SkyBlue   M   (450mm)	Daytime Full BIOS SkyBlue™ (49Cnm)  Bios-Dimming f  Evening BIOS SkyBlue™ Removed  See 420 460 500 500 500 500 500 740 780	





# SEALWERX SERIES



#### **DIRECT OPTICS**

#### **Environmentally Protected Direct Optic (EPDO)**

The Environmentally Protected Direct Optic creates a seal that blocks debris and moisture, and withstands UV distortion and moderate impact. This extruded snap-in lens has a gasket to ensure proper sealing. The lens is 1/16" thick and made of frosted polycarbonate. Internally, white, side kicking reflectors guide the light through the lens. The EPDO suits moderate climate environments.

#### Asymmetric Soft Direct Optic (ASDO)

The Asymmetric Soft Direct Optic creates a seal that blocks debris and moisture, and withstands UV distortion and moderate impact. This extruded snap-in lens has a gasket to ensure proper sealing. The lens is 1/16" thick and made of frosted polycarbonate. Internally, white, side kicking reflectors specifically angled to guide the light through the lens to create a nice asymmetric distribution. The ASDO suits moderate climate environments

#### **INDIRECT OPTICS**

### **Environmentally Protected Indirect Optic (EPIO)**

The Environmentally Protected Indirect Optic creates a seal that blocks debris and moisture, and withstands UV distortion and moderate impact. The lens is 1/16" thick and made of frosted polycarbonate. This extruded snap-in lens has a gasket to ensure proper sealing. The EPIO suits moderate climate environments.

### Asymmetric Soft Indirect Optic (ASIO)

The Asymmetric Soft Indirect Optic creates a seal that blocks debris and moisture, and withstands UV distortion and moderate impact. The lens is 1/16" thick and made of clear polycarbonate. This extruded snap-in lens has a gasket to ensure proper sealing. The total internal reflection and surface scattering optic is specifically angled to guide the light through the lens to create a nice asymmetric distribution. The ASIO suits moderate climate environments.



#### Widespread Indirect Optic (WIO2)

The Widespread Indirect Optic creates a seal that blocks debris and moisture, and withstands UV distortion and moderate impact. The lens is 1/16" thick and made of clear polycarbonate. This extruded snap-in lens has a gasket to ensure proper sealing. The total internal reflection and surface scattering optic offers an impressive 160° spread. WIO2 creates an even illumination for smooth brightness on the ceiling that can achieve uniformity ratios of up to 2:1. The WIO2 suits moderate climate environments.

#### Uniformity [max/min]

Based on 18' continuous runs, in a 20' x 40' room, 10' wall height

Mounting height from	Spacing (Center to center)		
ceiling	8'	10'	12'
24"	3.0	5.5	8.0
36"	2.0	3.0	4.5
48"	2.0	2.0	3.5

#### Static white

Custom linear array of mid-flux LEDs are cartridge-mounted with quick-connect wiring to facilitate service and thermal management. Available in 2700K, 3000K, 3500K, 4000K, and 5000K with a minimum 80+ CRI and an option for 90+ CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

### Full spectrum static white

The full spectrum LED option offers improved color particularly in the cyan region which helps increase Cyanosis Observation Index (COI) and assist in regulating circadian rhythms. The cyan region in full spectrum LED is richer at the 480 nm range.



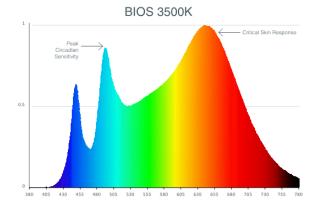


DIRECT, DIRECT/INDIRECT

# SEALWERX SERIES

#### **BIOS**

BIOS SkyBlue™ Technology is designed to provide the specific circadian stimulus to improve overall sleep quality, recovery during the night, and overall feelings of well-being. The non-visual light signals that stimulate our circadian system have peak intensity in the "sky blue" region. As the diagram below illustrates, BIOS SkyBlue technology shifts the peak LED spectral intensity (490 nm) to align better with the peak response of circadian stimulus. Also note the enhanced deepred (near 660 nm) spectrum.



Three BIOS solutions are offered: BIOS Biological Static (BIOSST), BIOS Biological Dynamic (BIOSDY), and BIOS Biological Tunable (BIOSTU). See page 7 for details.

### WELL BUILDING STANDARD



WELL for Light: The WELL building standard focuses on light quality in several features. There are three categories that are fully attributed to the construction and features of a luminaire. In WELL V1, it's Feature 54 Circadian Lighting, Feature 55 Glare Control, and Feature 58 Color Quality. In WELL V2, it's Feature L03 Circadian Lighting, Feature L04 Glare Control, and Feature L07 Electric Light Quality.

This fixture meets Features:

- Feature 54 or LO3 when BIOS LED is selected
- Feature 55 or L04 meets WELL glare category (c-d) (not applicable with 1000 lm/ft)
- Feature 58 or L07 when 90+ CRI is selected

All LED drivers used at Lumenwerx are deemed to have a low risk level of flicker, of 5% or less below 90Hz operational as defined by IEEE standard 1789-2015 LED.





**WELL for Mind**: This luminaire meets WELL for mind as it is a human centric luminaire offering quality light, excellent color, and smooth optics. If any of these features are incorporated in a luminaire, it can improve the ability to focus, concentrate, and persist longer on a given task. This fixture harmoniously operates in a space to assist the mind.

For more information, please contact well@lumenwerx.com

#### LUMINAIRE LENGTH

Via 4 Seal is available in standard lengths of 2' to 12'. Continuous runs are available for run lengths over 12'. Exact run length must be noted in the product code. The minimum length is 2' for Direct fixtures, and 3' for Direct/Indirect fixtures. Lengths can be ordered in 1' and/or 1" increments. All individual sections are joined together onsite using the joiner kits provided. Lumenwerx joiner kits are extremely simple to work with in the field and result in a fixture that appears virtually seamless with no light leak at any connection.

#### WEEP HOLES

The Direct/Indirect fixtures, with the IP44-Rated option, feature a weep hole situated in the end cap. Water and moisture that enters the fixture will be expelled through this hole.



#### TEMPERATURE VARIATION PROTECTION

The intergrated pressure equalization and moisture control GORE® protective vent allows air to flow while blocking water, dust, and contaminants. It reduces internal condensation, supports thermal stability, and preserves the fixture's sealed performance over time.



Location may vary.





DIRECT, DIRECT/INDIRECT

# SEALWERX SERIES



Factory-set, adjustable output current LED driver with universal (120-277 VAC) input. Dimmable from 100% to 1% with 0-10V dimming control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency>84%, PF>0.9, THD<20%. Other specifiable options include Lutron Hi-Lume 1% Ecosystem, eldoLED 1% ECOdrive 0-10V, eldoLED 0.1% SOLOdrive 0-10V, and DALI protocol drivers. All of our standard 0-10V drivers are NEMA 410 compliant. An optional low-temperature 10% 0-10V driver, suitable for temperatures down to -40°C/F is also available.

#### PoE

Depending on the PoE manufacturer selected, Lumenwerx will install the node in factory as either integral to the luminaire or as a remote module. Factory programming of the PoE node may or may not enable the following functionalities: lumen package, DUO (tunable white), QUADRO (RGBW), emergency battery backup, and sensor integration. These must be addressed and evaluated on a case-by-case basis.

#### **ELECTRICAL SECTION OPTIONS**

Electrical section options are available for fixtures specified as multi circuit (#MC). With MC, specify the total number of circuits (#), including any circuits required for optional electrical sections. A drawing is required to specify the layout. Please consult factory for custom configurations.

#### **Electrical sections**

Options include emergency-powered light (#EC##), night light (#NL##), daylight (#DL##), and generator transfer device (#GTD##) sections. Specify the quantity (#), as well as the section length in inches (##).

Example 1: A 32' Direct fixture with two 8' emergency light sections on a second circuit.

Code: 2MC-2EC96

Example 2: A 16' Direct/Indirect fixture with separate circuits for direct and indirect, and with one 4' night light section on the direct side on a third circuit.

Code: 3MC-1NL48

Example 3: A 24' Direct fixture with one 4' generator transfer device section.

Code: 1MC-1GTD48



#### **Battery**

Each emergency battery (#EMB) powers a 4' section. All batteries will be on the same circuit. Specify the number of batteries (#) required.

Factory installed long life, high temperature, maintenance-free Lithium-lon battery pack with self-test functionality, test switch and charge indicator. Minimum of 90 minutes operation, up to 1000 lumens per 4' (25°C) emergency lighting output and recharge time of 24 hours. Suited for ambient temperatures of 0°C (32°F) to 55°C (131°F).

### **Generator Transfer Device (GTD)**

A UL924 listed shunt relay that can bypass both line voltage (120-277V) and 0-10V dimming signal. Suited for ambient temperatures of 0°C (32°F) to 60°C (140°F).

#### MOUNTING

Pendant fixtures can be mounted with stem. See page 3 for details. Additional bracing by others required for wind and earthquake exposure.

#### FINISH

**Interior**: 95%, reflective matte powder coated white paint **Exterior**: Powder-coat paint in matte white, matte black, or aluminum. Custom finishes are also available. Optional antimicrobial finish.

# CONSTRUCTION

**Housing**: Extruded aluminum, up to 90% recycled content **Interior brackets**: Die-formed cold rolled sheet steel

Gaskets: closed-cell silicone foam

Reflectors: Die-formed cold rolled sheet steel, 95% reflective

matte white painted

End cap: Die-cast aluminum

### WEIGHT

Direct	Direct/Indirect
<b>4</b> ': 15.0 lbs - 6.8 kg	<b>4'</b> : 17.2 lbs - 7.8 kg
<b>8</b> ': 27.6 lbs - 12.5 kg	<b>8'</b> : 32.8 lbs - 14.9 kg
<b>12</b> ': 40.1 lbs - 18.2 kg	<b>12'</b> : 48.5 lbs - 22 kg

# CERTIFICATIONS

**ETL**: IP44-Rated environment option is rated for dry/damp locations. IP66-Rated, IP65-Rated, IP65-Rated Electrical Components, and IP54-Rated environment options are ETL Wet Listed. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0. During the installation of Wet Listed fixtures, the contractor is responsible for properly sealing all mounting and electrical connection points.

IK08: Impact resistance rated to IK08





DIRECT, DIRECT/INDIRECT

# SEALWERX SERIES

### WARRANTY

Lumenwerx provides a five-year limited warranty on electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. Lumenwerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.

