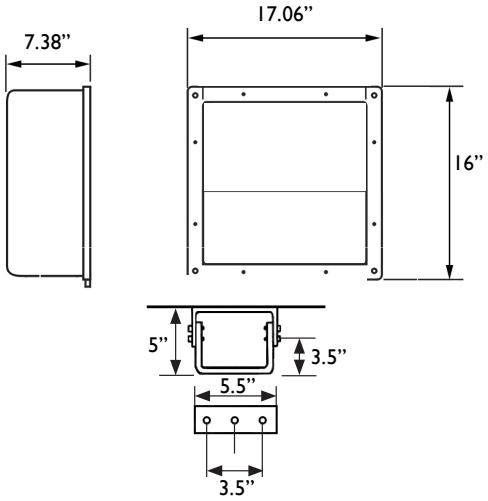
HAZARDOUS SOLUTION

NORIBACHI

NHS.03



Product Information

NHS.03 is a hazardous LED lighting solution used in general marine and hazardous applications.

Applications: Hazardous environments, Auto Dealerships, Shopping Malls, Parking Lots, Security Lighting and a variety of other outdoor environments.

Performance Ratings and Certifications

Class I, Divisions 2, Groups A, B, C, D,
Class II, Divisions 2, Groups F, G
Class I Zone 2 Groups IIC
Class II Zone 2 Groups IIIB
Class III and Zone 22
Conforms to UL Std. 1598, 844
Certified to CSA C22.2 #137, CSA C22.2 #213

Performance Summary

Lumens:	4,862 – 30,870 lm
Lumens Per Watt (Typical):	140 LPW
Power Consumption:	35 – 221 W
Light Engine:	L70 Rated Lifetime of 100,000+ hours.
CRI:	Minimum 70 CRI. Optional custom CRI.
CCT (Typical):	3000K, 4000K, 5700K, optional tight bins.
Light Dist. Pattern:	Multiple distribution patterns available.

Manufactured in the U.S. with parts from U.S. and imported.

Fixture Information

Housing:	Copper-free aluminum.
Color:	Bronze with clear coat. . Optional custom color.
Finish:	Superior dual coat finish. Chemical resistant epoxy primer and/or Marine Grade coating optional.
Lens:	Tempered glass lens.
Mounting	Handle Yoke
Width:	17.06”
Depth:	7.38”
Height:	16.00”
Weight:	17.6 lbs
Shipping Weight	19.5 lbs

Electrical System Characteristics / Data

AC Input:	120/277 VAC (standard), 480 VAC (upgrade)
FCC:	Title 47, Part 2, Part 15, Class A
EM:	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (60% load); EN61000-3-3
EM Immunity:	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge 4KV), criteria A
Withstand Voltage:	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC
Isolation Resistance:	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25 / 70% RH
Power Factor:	PF > 0.98/115VAC, PF > 0.92/277VAC
Total Harmonic Distortion:	THD < 20%
Standard Surge Protection:	All-Around Protection: OVP, SCP, OLP.
Enhanced Surge Protection:	Protects against surges according to IEEE C62.41.2 C and ANSI C136.2
Emergency Batt. Backup:	Optional upgrades available.

Optional Controls:

Dimming:	0-10V, step, line voltage or bi-level.

Warranty

Standard limited 5-year warranty, first year includes labor. Optional 10-year warranty available. See details at www.Noribachi.com.

ELECTRICAL CHARACTERISTICS AND PERFORMANCE DATA VERIFIED BY NATIONALLY RECOGNIZED TESTING LABS (NRTL). FOR FULL REPORTS AND RESULTS, VISIT WWW.NORIBACHI.COM/REPORTS. ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE. ALL VALUES TYPICAL UNLESS OTHERWISE NOTED. LUMEN VALUES MAY VARY BY +/-10%. COLOR TEMPERATURE MAY VARY ACCORDING TO ANSI C78.377.
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Electrical System Specifications

Electrical Load				
Light Engine	Drive Current (Amps@120VAC)	Drive Current (Amps@277VAC)	Drive Current (Amps@480VAC)	System Power (Watts)*
HEX-021-B-CW-MT	0.29	0.13	0.07	34.70
HEX-042-B-CW-MT	0.58	0.25	0.14	69.50
HEX-063-B-CW-MT	0.87	0.38	0.22	104.20
HEX-084-B-CW-MT	1.16	0.50	0.29	138.90
HEX-105-B-CW-MT	1.45	0.63	0.36	173.60
HEX-126-B-CW-MT	1.74	0.75	0.43	208.40
LIN-140-B-CW-MT	1.84	0.80	0.46	220.50
				* ideal wattage

Operating Characteristics (Typical @5700K CCT)				
Light Engine	Lumens (Medium Dist)	Input Power (Watts)	Lumens per Watt	Replaces
HEX-021-B-CW-MT	4,862	34.70	140.12	75-175W
HEX-042-B-CW-MT	9,724	69.50	139.91	125-300W
HEX-063-B-CW-MT	14,586	104.20	139.98	200-400W
HEX-084-B-CW-MT	19,448	138.90	140.01	300-525W
HEX-105-B-CW-MT	24,310	173.60	140.03	400-650W
HEX-126-B-CW-MT	29,172	208.40	139.98	550-800W
LIN-140-B-CW-MT	30,870	220.50	140.00	750-1000W

Fixture Specifications

Construction
Copper-free aluminum.

Optional Finishes
Bronze with a dear coat standard. Custom colors available (specify RAL code). Epoxy finish and marine-grade coating available. Marine grade coating is green.

Mounting Options
Handle Yoke mount available.

Lens Options
Clear tempered glass standard.

Light Distribution Patterns
T5 standard. 80degree and 40degree option available.

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Electrical System Specifications

Electrical System
Standard AC input of 120 – 277VAC. Optional upgrade to 480VAC. Driver meets maximum harmonic distortion (THD) of 20% and is ROHS compliant. Power Factor = > 0.9. Standard Surge protection according to IEC/EN 61000-4-5 EMC test standard and can protect against up to 4KV transient surge. Optional, enhanced Surge Protection protects Line-Ground, Line-Neutral, and Neutral-Ground. Protects against surges according to IEEE C62.41.2 C(10kA and 10kV) and ANSI C136.2.

Controls
Optional controls include: 0-10V (010V), Step, line voltage and Bi-Level Dimming functionality (not guaranteed to work with all dimming systems). Optional Emergency Battery Backup: Nickel-Cadmium Batteries, 5W, 600 Lumens for 90 minutes. Optional Cold Emergency Battery Backup: 23W, 2000 Lumens for 90 minutes. The battery has a 7-10 year lifespan.

Driver
All LED drivers provide constant current to give flicker free lighting. Two different drive currents are provided; A (350 mA) and B (525 mA). Highly reliable. Suitable for dry, damp and wet locations. Compliant to worldwide safety regulations for lighting.

Ambient Temperature
We provide fixtures that can sustain ambient temperature ranging from -40F to 140F (-40C to 60C).

RGBW Controls
Optional RGBW controls with communication to fixture via DMX512 or DMX256 and four channel controls. Four channel control uses red, green, blue and white (to control intensity). DMX controller optional, either software DMX master (via CD and USB adapter) or a physical DMX master. 2.4 GHz wireless DMX networking optional. Other frequencies available upon request.

Testing Compliance
Noribachi complies with and exceeds standards set forth by UL and CSA. All luminaires comply with UL 1598 (CSA C22.2#250.13), and UL 8750 (CSA C22.2#250.0) standards for safety.
All hazardous location luminaires complies with and exceeds standards set forth by UL 844 and CSA C22.2#213 and CSA C22.2#137
Performance testing is done in accordance with LM-79 color measurements and LM-79 distribution measurements, and LM-80 lumen maintenance testing.

Manufacturing
Manufactured in beautiful Harbor City, CA. ARRA Compliant. NAFTA Compliant. Test and burn-in of 100% of all luminaries before shipment. No less than 8-years experience in manufacturing LED-based products.

Warranty
Standard limited 5-year warranty, first year includes labor. Optional 10-year warranty available. See details at www.Noribachi.com.

Note
All safety tests and performance data is done in ambient (STP) conditions. Specifications subject to change without notice. Actual performance may differ as a result of end-user environment application. Actual wattage may differ by +/- 8%. Lumen values may vary within compliance with ANSI C78-377 (unless specifying tight color bins).

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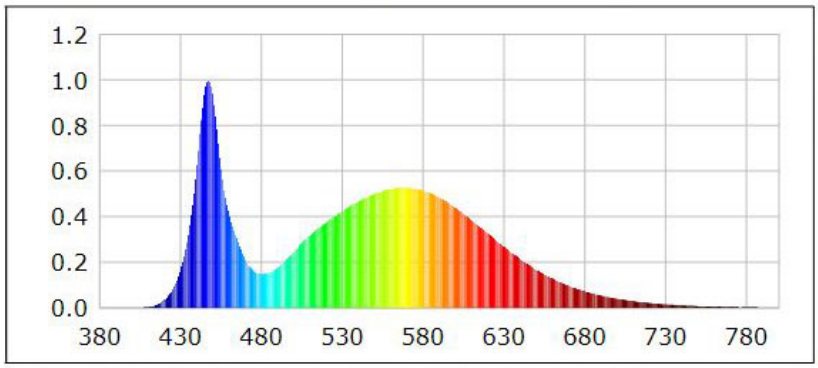
Optics Specifications

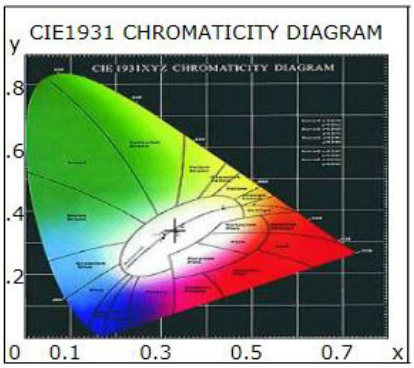
White LED Optics
High brightness, high efficiency LEDs. Standard color temperature is Cool White (5700K typical). Neutral White (4000K typical) and Warm White (3000K typical) also available. All with minimum 70 CRI. Tight bins (<+/-50degK variability) also available – recommended for WW installations as the eye is sensitive to variations in this color range. 40deg and 80deg beam angle optional (n/a for RGBW).

RGBW Light Engine Optics
RGBW light engine also available, compatible with DMX controller. RGBW colors, to allow changing from pure white light to any hue available. Multiple channels of LEDS produce a full spectrum of light anywhere from deepest red to farthest violet. CRI greater than 75 in the 2700K – 4000K range.

Single color light engines also available. Red=630 nanometers, Green=525 nanometers. Blue=475 nanometers.

Photometric Data for White LED Light Engine



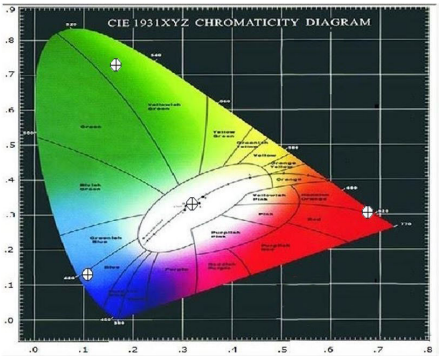


Chromaticity coordinates: x=0.3305 y=0.3424 u(u')=0.2050 v=0.3186 v'=0.4779
CCT: Tc=5700K (duv=0.00156) Color Ratio: R=0.133 G=0.827 B=0.040
Peak Wavelength: 447.2nm Half Bandwidth: 19.1nm
Dominant Wavelength: 535.2nm Color Purity: 0.020
Color Render Index: Ra= 75.0, avgR(1~14)= 65.6, avgR(1~15)= 65.9

R1 =74	R2 =76	R3 =76	R4 =81	R5 =75	R6 =66	R7 =84	R8 =67
R9 =0	R10=41	R11=78	R12=40	R13=73	R14=86	R15=71	

Photometric Data for RGBW LED Light Engine

Chromaticity coordinates:
White x = 0.3264 y = 0.3427
Red x = 0.6977 y = 0.3014
Green x = 0.1897 y = 0.7174
Blue x = 0.1104 y = 0.1298



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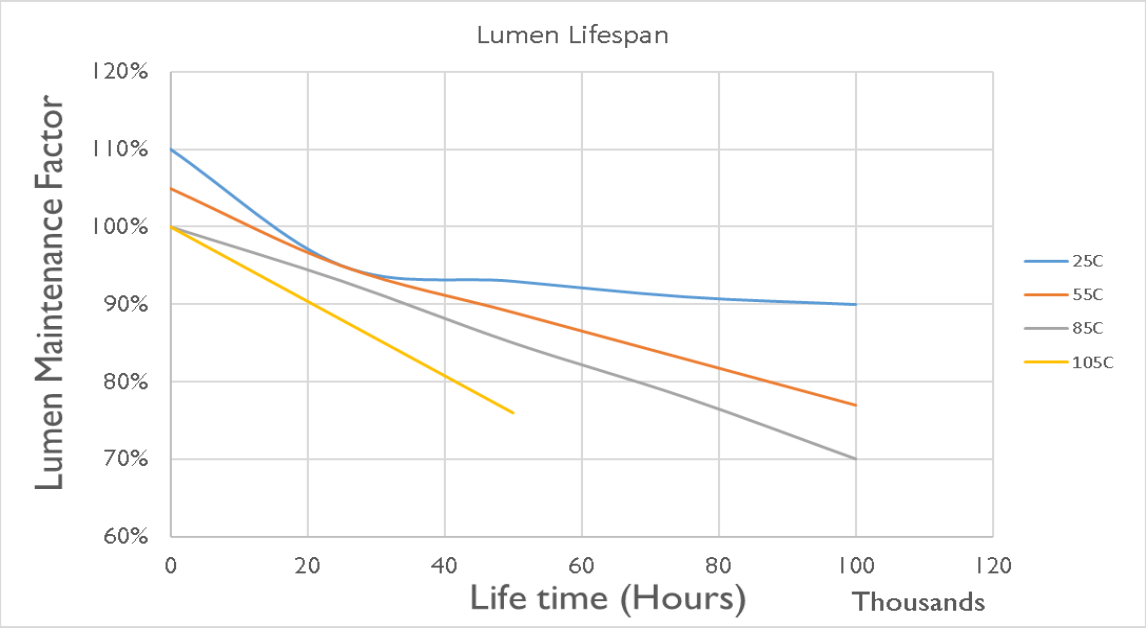
Lumen Performance



Lumen Maintenance Factors (B Drive)					
T_j (Junction Temp)	INITIAL LMF	25K HR PROJECTED LMF	50K HR PROJECTED LMF	75K HR PROJECTED LMF	100K HR PROJECTED LMF
25°c	1.10	0.95	0.93	0.91	0.90
55°c	1.05	0.95	0.89	0.83	0.77
85°c	1.00	0.93	0.85	0.78	0.70
105°c	1.00	0.88	0.76	N/A	N/A

Each temperature has an independent initial value. In accordance with IESNA TM021011, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing (DUT) i.e. the packaged LED chip). In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing (DUT) i.e. the packaged LED chip)

Lumen Multiplier	
AMBIENT TEMPERATURE	LUMEN MULTIPLIER
10°C	1.032
15°C	1.021
25°C	1.000
40°C	0.968
50°C	0.946

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How to Order

Sample Order Code: Only include the optional upgrades you need.

NHS03	–	HEX	–	063	–	B	–	CW	–	MT	–	COL-5004	–
Fixture (required)		Light Board (required)		Number of Diodes (required)		Drive Current (required)		LED Color Temperature (required)		Voltage (required)		Custom Fixture Color (optional)	

EPOXY	–	HY	–	BLD[50]	–	EM	–	SRG2	–	80D
Coating (optional)		Mounting (optional)		Dimming (optional)		Emergency Battery Backup (optional)		Surge Protection (optional)		Beam Angle (optional)

Numbering Order	Specification	Required or Optional	Allowed Values	Description
1	Fixture	Required	NHS03	For Hazardous Solution.03
2	Light Board	Required	LIN	For Hazardous Solution.03
			HEX	For Hazardous Solution.03
3	Number of Diodes	Required	021	For HEX-021 models
			042	For HEX-042 models
			063	For HEX-063 models
			084	For HEX-084 models
			105	For HEX-105 models
			126	For HEX-126 models
			140	For LIN-140 models
4	Drive Current	Required	B	B (525mA) drive current
5	LED Color Temperature	Required	CW	Standard Cool White LEDs (5700K)
			NW	Neutral White LEDs (4000K)
			WW	Warm White LEDs (3000K)
			[Specific degree Kelvin]	Specific color temp LEDs [Specific degree Kelvin]
			TB1 [Specific degree Kelvin]	Tight Bin LED Color [Specific degree Kelvin]
			TB2 [Specific degree Kelvin]	Tight Bin LED Color [Specific degree Kelvin]
			RGBW	Red/Green/Blue/White light engine
			SC [R, G, B]	Red, Green, or Blue light engine
6	Voltage	Required	MT	Standard AC input: 120VAC - 277VAC
			HV1	High Voltage (480VAC) option for up to 150W
			HV2	High Voltage (480VAC) option for greater than 150W
7	Custom Fixture Color	Optional	COL-[RAL]	Custom Fixture Color (RAL code)
8	Coating	Optional	COAT	Marine Grade Coating
			EPOXY	Epoxy Coating
9	Mounting	Optional	HY	Handle Yoke
10	Dimming	Optional	010V	0 - 10V dimming
			STEP	Step dimming
			LVDIM	Line voltage dimming
			BLD[%]	Bi-level dimming
11	Emergency Battery Backup	Optional	EM	Emergency Battery Backup
			EMC	Emergency Battery Backup – Cold
12	Surge Protection	Optional	SRG1	Enhanced surge protection for 120-277VAC
			SRG2	Enhanced surge protection for 480VAC
13	Beam Angle	Optional	40D	40degree Beam Angle Optics
			80D	80degree Beam Angle Optics

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