

IES Report

BoxRail® | 107 | White Baffle | 90 CRI | SO

107-BX-XX-4-48-XX-XX-XX-XX-X-X-Z-SO-359-WB-X-XX-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	65	67	68	69
Total Lumens, 4' rail length (1219mm)	1540	1589	1621	1637
Lumens per foot (305mm)	385	397	405	409
Input Power (W), 4' rail length (1219mm)	23.9	23.9	23.9	23.9
Watts per foot (305mm)	6.0	6.0	6.0	6.0
CRI	94	94	94	94

Due to the large number of options in Vode's product offering, most Vode IES reports are factored reports prepared from source reports. Source reports are the IES test reports prepared for Vode by an NVLAP accredited photometric test laboratory. Factored reports are based on data from the Vode source reports.

If the data above is in black, it is directly from a Vode source report. If it is in grey, it is factored from Vode source reports. Reference details on Vode source reports can be found on the [IES File Finder](#) page on [vode.com](#).



8165 E Kaiser Blvd.
Anaheim, CA 92808
www.lightlaboratory.com

Report No: L121911507



Report No: L121911507

Issue Date: 12/20/2019

Report Prepared For: Vode Lighting
21684 8th Street East, Suite 700, Sonoma, CA 95476

Model Number: 107-BX-48-Z-SO-359-WB-AL

Test: Photometric/Colorimetric/Electrical Test

Standards Used: Appropriate part or all test guidelines were used for test performed:

IESNA LM79: 2008 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products

ANSI NEMA ANSLG C78.377: 2008 Specification of the Chromaticity of Solid State Lighting Products

ANSI C82.77:2002: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

Special Test Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 12/16/19

Date of Tests: 12/17/19 - 12/20/19

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S4	1/9/21
BK PRECISION	1747	PS-DC04	1/10/21
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/21
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

General Information

Manufacturer:	Vode Lighting
Model Number:	107-BX-48-Z-SO-359-WB-AL
Driver Model Number:	MEAN WELL HLG-40H-36A

Test Summary

Total Lumens:	1620.63
Efficacy:	67.70
Color Redering Index:	94.0
Correlated Color Temperature:	3432
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.2008
Input Power (W):	23.94
Input Power Factor:	0.9933
Current ATHD (%):	8.6%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:40
Total Operating Time (Hours):	1:30

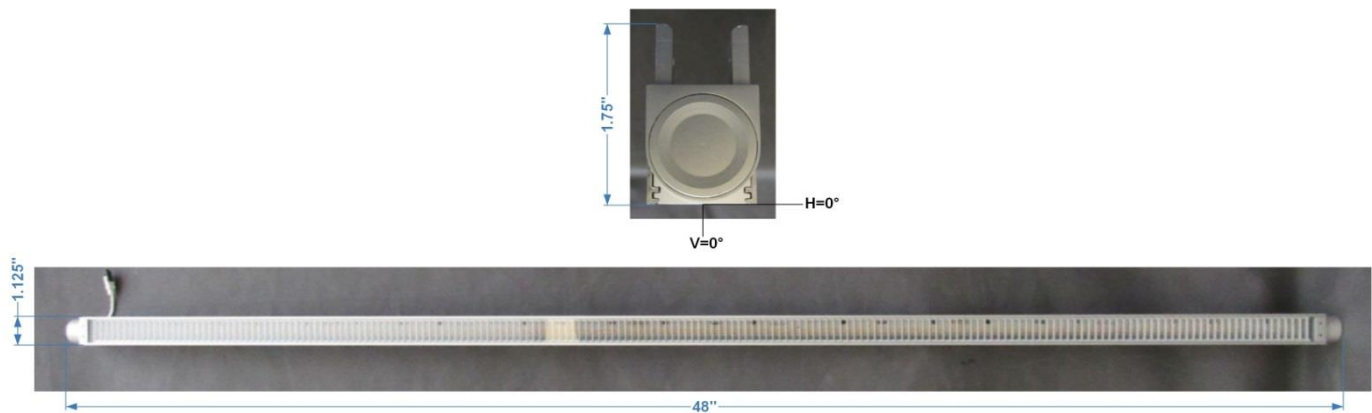
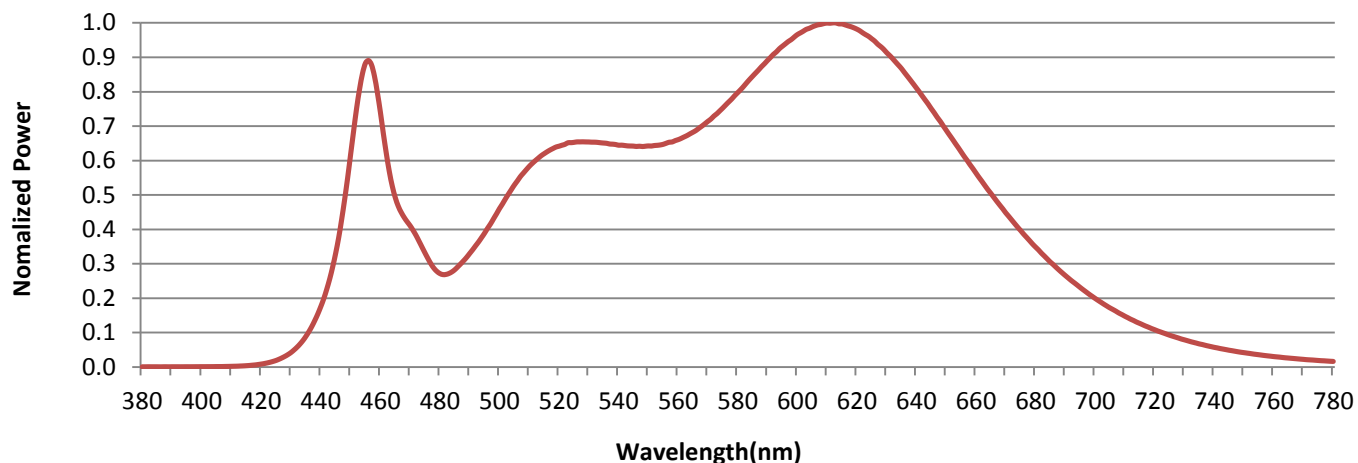


FIG. 1 LUMINAIRE

Colorimetry Test Results

Spectral Power Distribution



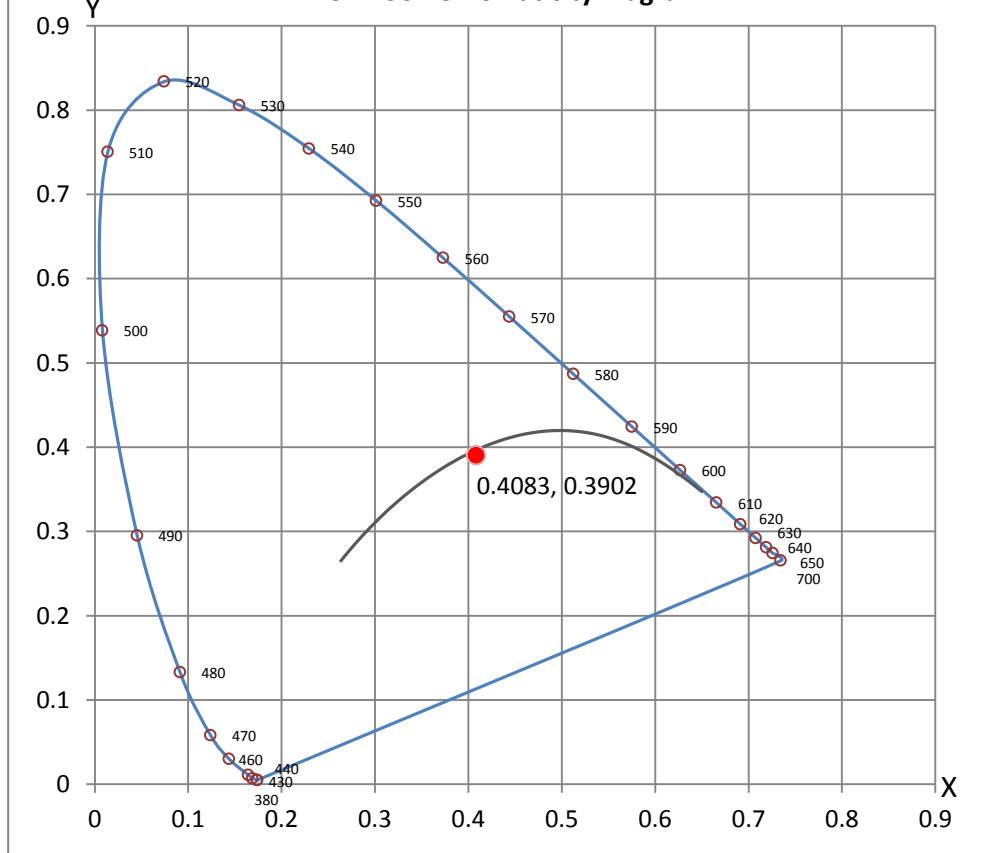
CRI & CCT

x	0.4083
y	0.3902
u'	0.2379
v'	0.5115
CRI	94.00
CCT	3432
Duv	-0.00088

R Values

R1	96.19
R2	99.13
R3	97.73
R4	96.34
R5	96.25
R6	95.56
R7	90.25
R8	80.80
R9	57.06
R10	97.81
R11	98.02
R12	77.22
R13	97.95
R14	99.56
R15	90.36

CIE 1931 Chromaticity Diagram





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Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : Keyur Patel

Test Report Reviewed by:

Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 9*



8165 E. Kaiser Blvd. Anaheim, CA 92808
www.lightlaboratory.com

Photometric Test Report

IES INDOOR REPORT

PHOTOMETRIC FILENAME : L121911507.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L121911507
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUE DATE] 12/20/2019
[MANUFAC] Vode Lighting
[LUMCAT] 107-BX-48-Z-SO-359-WB-AL
[LUMINAIRE] BoxRail LED, 48", 3500K, 90 CRI, zipper board, white baffle,
[MORE] standard output, clear anodized finish
[BALLASTCAT] MEAN WELL HLG-40H-36A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120.0VAC, 23.94W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1621
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	68
Total Luminaire Watts	23.94
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.28
Spacing Criterion (90-270)	0.80
Spacing Criterion (Diagonal)	1.00
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.07 ft
Luminous Width (90-270)	3.84 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	8656	15672	11881
55	7882	10114	9416
65	8330	7478	7668
75	4328	4637	5410
85	2754	2295	2295

IES INDOOR REPORT
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CANDELA TABULATION

	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
0	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
5	1222	1221	1220	1218	1217	1214	1211	1208	1206	1204
10	1210	1209	1203	1197	1191	1187	1180	1171	1162	1150
15	1189	1185	1176	1167	1156	1139	1117	1095	1072	1050
20	1156	1149	1138	1123	1097	1064	1031	999	970	947
25	1109	1099	1085	1056	1016	974	935	905	874	835
30	1056	1045	1022	978	927	879	844	792	738	688
35	987	974	940	887	833	790	727	661	604	556
40	652	654	660	669	678	643	589	533	461	390
45	153	160	176	197	232	291	338	340	304	277
50	118	122	129	137	147	160	176	191	199	203
55	113	115	119	123	129	136	143	144	144	145
60	105	106	105	105	105	107	108	108	108	108
65	88	87	84	81	79	78	78	78	78	79
70	55	54	54	52	51	50	50	51	51	52
75	28	28	28	27	27	27	28	28	29	30
80	14	14	13	13	13	13	13	13	13	14
85	6	6	6	6	6	6	6	6	5	5
90	0	0	0	0	0	0	0	0	0	0

Vert. Angles **Horizontal Angles**

	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>
0	1225	1225	1225	1225	1225	1225	1225	1225	1225
5	1202	1201	1200	1199	1197	1197	1196	1195	1195
10	1139	1129	1119	1110	1103	1097	1093	1090	1089
15	1031	1013	998	985	976	968	963	961	960
20	927	907	885	862	844	828	817	810	808
25	794	757	725	697	677	661	650	644	642
30	646	614	580	543	511	486	469	458	455
35	497	443	398	365	344	331	323	318	316
40	339	310	293	282	273	266	262	259	258
45	260	247	237	228	222	217	213	211	210
50	201	194	188	182	178	174	172	170	169
55	147	147	145	143	141	138	137	136	135
60	109	109	109	109	109	108	107	107	106
65	79	80	81	81	81	82	81	81	81
70	53	54	55	56	56	57	57	57	57
75	31	32	33	34	35	35	36	36	35
80	14	15	16	16	17	17	18	18	17
85	5	5	5	5	5	5	5	5	5
90	0	0	0	0	0	0	0	0	0

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	411.65	N.A.	25.40
0-30	800.34	N.A.	49.40
0-40	1166.5	N.A.	72.00
0-60	1499.63	N.A.	92.50
0-80	1613.67	N.A.	99.60
0-90	1620.63	N.A.	100.00
10-90	1507.31	N.A.	93.00
20-40	754.85	N.A.	46.60
20-50	964.92	N.A.	59.50
40-70	412.86	N.A.	25.50
60-80	114.04	N.A.	7.00
70-80	34.30	N.A.	2.10
80-90	6.96	N.A.	0.40
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	1620.63	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	113.32
10-20	298.33
20-30	388.69
30-40	366.16
40-50	210.06
50-60	123.06
60-70	79.74
70-80	34.30
80-90	6.96
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

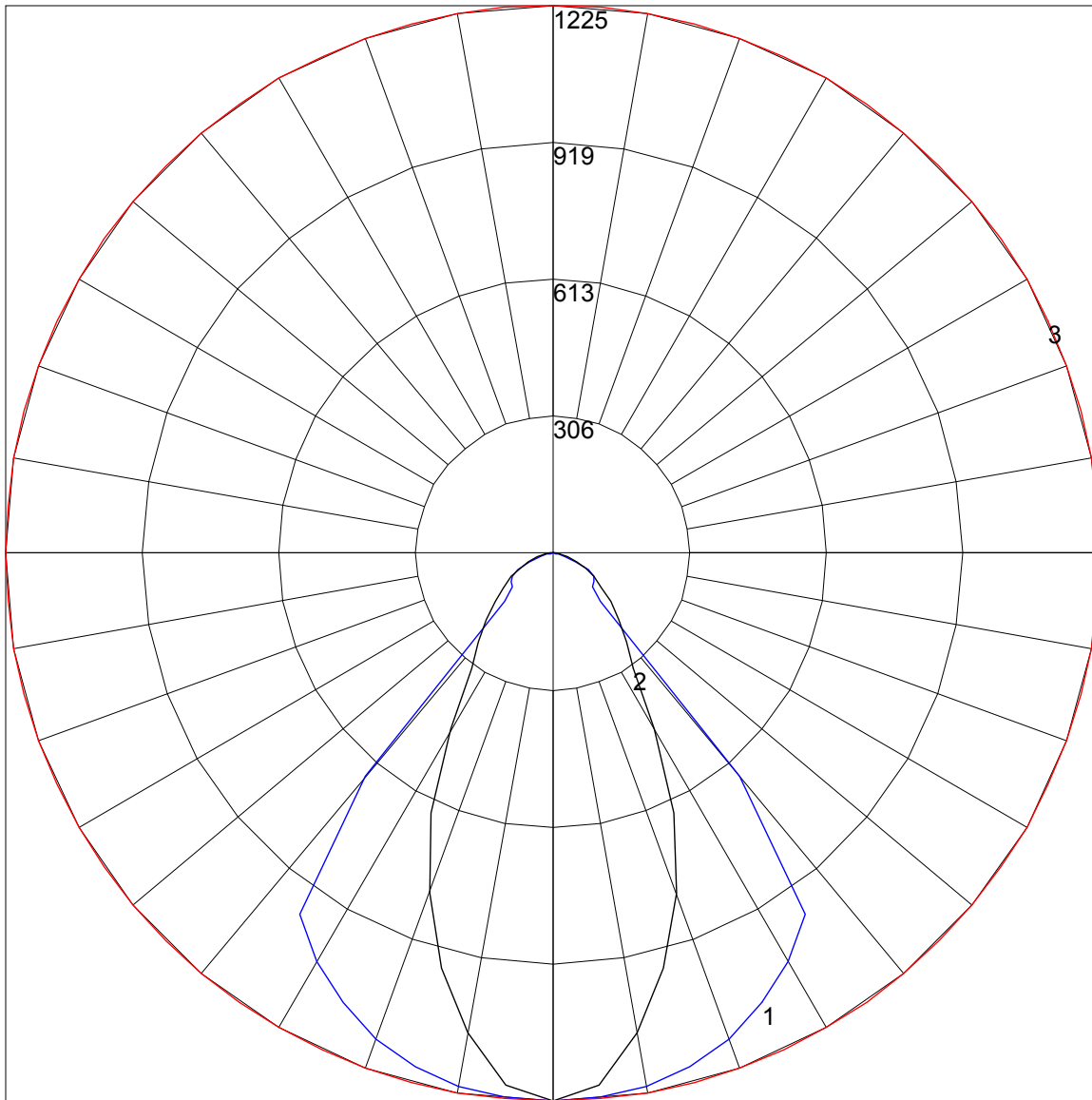
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	108	105	102	109	106	103	101	102	100	97	98	96	94	95	93	92	90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72
4	91	82	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	65
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	59
6	80	69	62	56	78	68	61	56	67	60	56	65	60	55	64	59	55	53
7	75	64	57	52	74	63	56	51	62	56	51	60	55	51	59	54	50	49
8	71	59	52	47	69	59	52	47	58	51	47	56	51	47	55	50	47	45
9	67	55	48	44	65	55	48	44	54	48	43	53	47	43	52	47	43	41
10	63	52	45	40	62	51	45	40	50	44	40	50	44	40	49	44	40	39

POLAR GRAPH



Maximum Candela = 1225 Located At Horizontal Angle = 0, Vertical Angle = 0

1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

2 - Vertical Plane Through Horizontal Angles (90 - 270)

3 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)