

IES Report

BoxRail® | 107 | Diffuse | 90 CRI | SO

107-BX-XX-4-48-XX-XX-XX-XX-X-X-Z-SO-359-1-X-XX-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	93	96	98	99
Total Lumens, 4' rail length (1219mm)	2215	2285	2332	2355
Lumens per foot (305mm)	554	571	583	589
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: L121911506



Report No: L121911506

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-359-1-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-359-1-AL
Driver Model Number:	MEAN WELL HLG-40H-36A

Test Summary

Total Lumens:	2331.67
Efficacy:	97.42
Color Redering Index:	94.0
Correlated Color Temperature:	3379
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):	0:30
Total Operating Time (Hours):	1:25

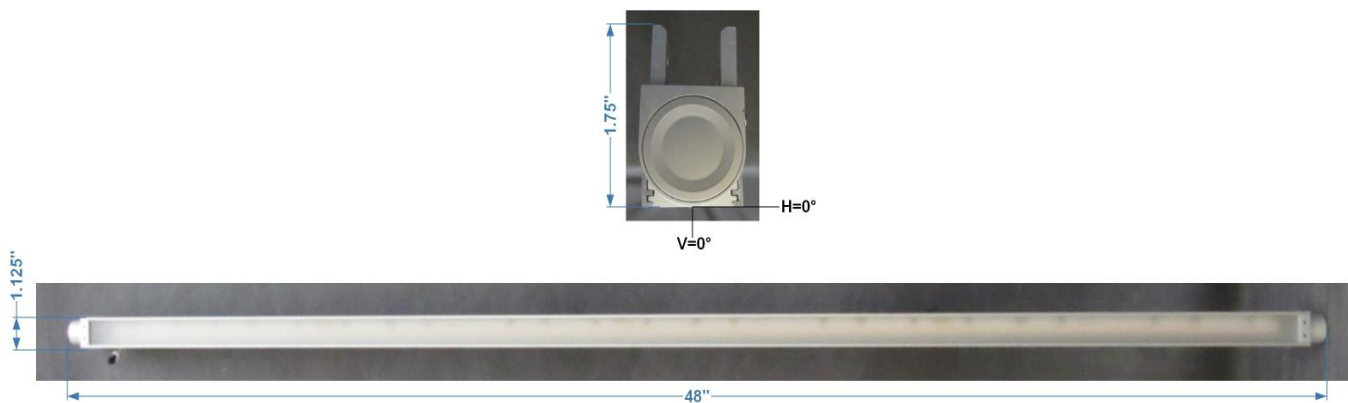
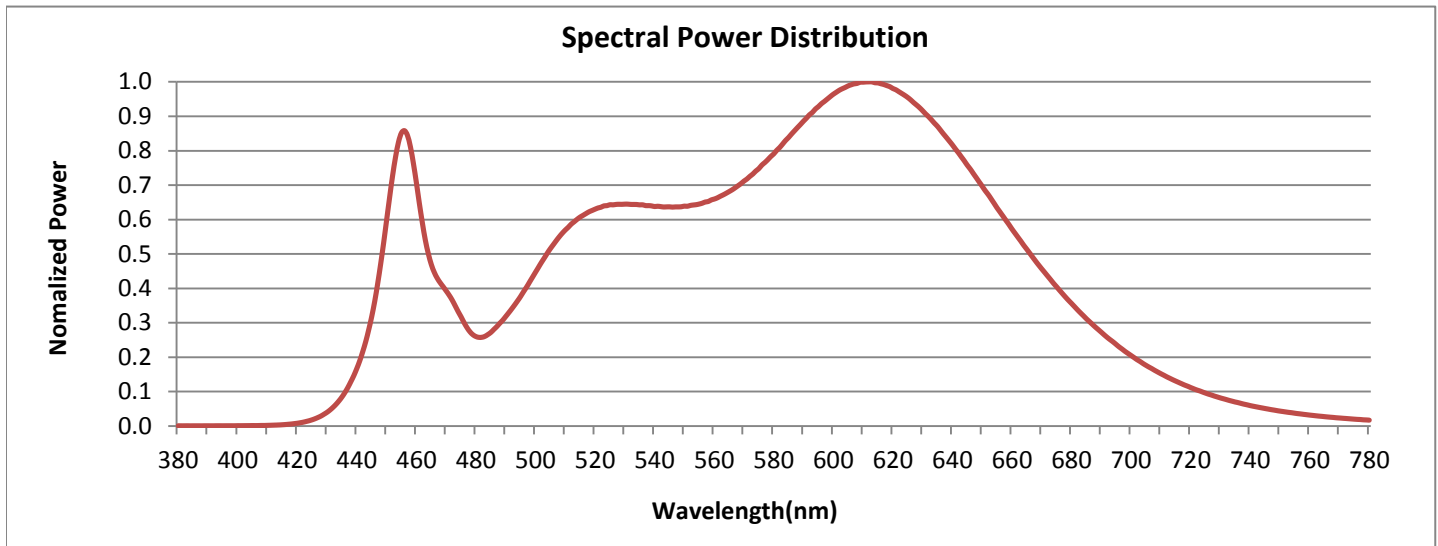


FIG. 1 LUMINAIRE

Colorimetry Test Results

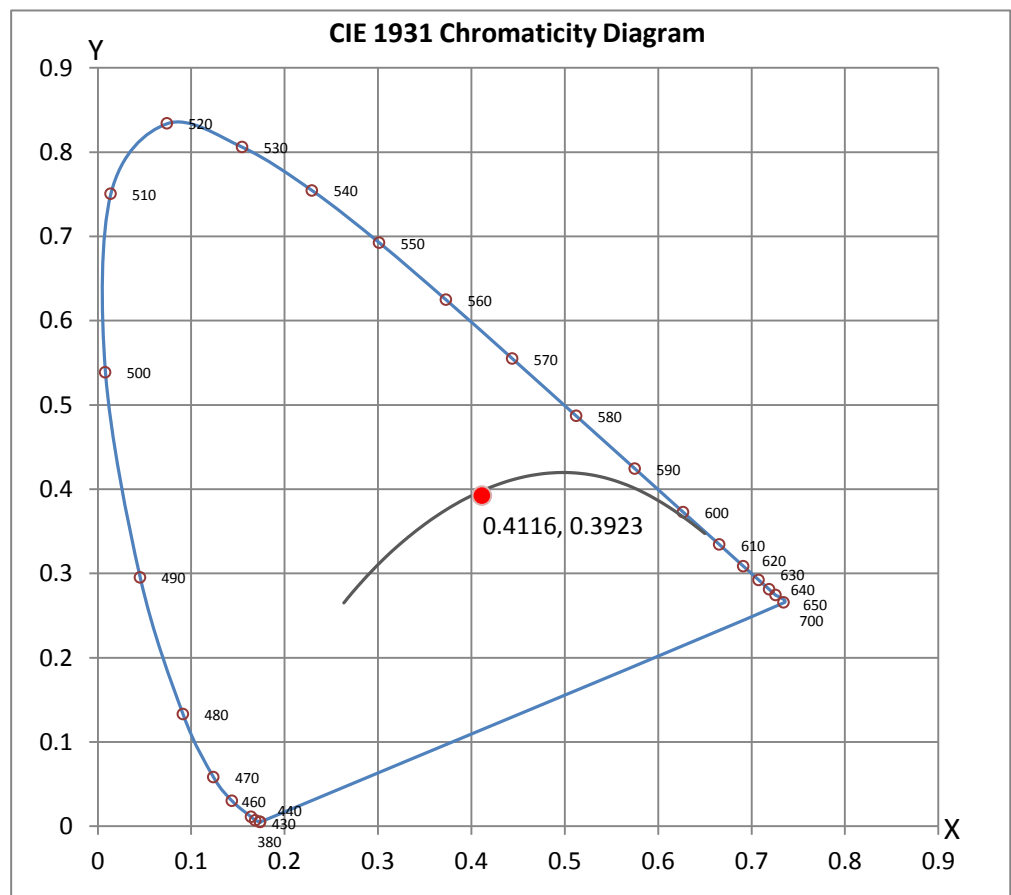


CRI & CCT

x	0.4116
y	0.3923
u'	0.2391
v'	0.5129
CRI	94.00
CCT	3379
Duv	-0.00064

R Values

R1	95.93
R2	98.88
R3	98.03
R4	96.18
R5	96.01
R6	95.85
R7	90.36
R8	80.62
R9	56.54
R10	97.04
R11	98.06
R12	77.26
R13	97.59
R14	99.63
R15	90.06





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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 : L121911506.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L121911506
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUE DATE] 12/20/2019
[MANUFAC] Vode Lighting
[LUMCAT] 107-BX-48-Z-SO-359-1-AL
[LUMINAIRE] BoxRail LED, 48", 3500K, 90 CRI, zipper board, diffuse lens,
[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	2332
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	97
Total Luminaire Watts	23.94
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.10
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.22
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	24215	30326	35927
55	17019	23366	30481
65	12401	17324	24802
75	9738	12675	19940
85	6426	8262	16984

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	1119	1119	1119	1119	1119	1119	1119	1119	1119	1119
5	1113	1113	1113	1113	1113	1113	1113	1113	1113	1114
10	1090	1090	1090	1091	1091	1091	1092	1092	1093	1093
15	1048	1048	1048	1049	1050	1051	1053	1055	1056	1058
20	984	985	986	987	990	992	996	999	1003	1006
25	897	898	900	903	908	912	918	924	931	937
30	791	793	796	800	807	814	823	833	842	852
35	672	673	677	683	691	702	713	726	740	753
40	546	548	552	559	570	583	597	613	630	646
45	428	430	434	441	452	466	481	499	518	536
50	327	328	332	339	348	360	375	392	411	431
55	244	246	249	254	262	273	285	300	317	335
60	180	181	184	188	194	201	211	223	237	252
65	131	132	133	136	140	145	152	161	171	183
70	93	93	94	95	98	101	105	111	118	126
75	63	63	63	64	65	67	69	72	76	82
80	37	37	37	37	38	39	40	41	43	46
85	14	14	15	15	15	15	16	16	17	18
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	1119	1119	1119	1119	1119	1119	1119	1119	1119
5	1114	1114	1114	1114	1115	1114	1114	1114	1115
10	1094	1095	1096	1096	1097	1097	1097	1097	1097
15	1059	1061	1063	1065	1065	1066	1067	1067	1067
20	1010	1013	1016	1019	1021	1023	1024	1024	1025
25	943	949	954	959	963	965	967	969	969
30	862	871	879	885	891	895	899	900	901
35	767	779	790	800	807	814	818	820	822
40	663	678	692	704	714	721	727	730	731
45	555	573	589	603	614	623	630	633	635
50	451	470	486	501	513	523	529	534	535
55	354	372	389	404	416	425	432	436	437
60	269	285	301	315	326	334	341	344	345
65	196	210	223	235	245	253	258	261	262
70	136	146	157	167	175	182	186	189	189
75	88	95	103	110	117	122	126	128	129
80	49	53	58	63	68	72	75	77	77
85	19	21	23	26	29	32	34	36	37
90	0	0	0	0	0	0	0	0	0

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	403.30	N.A.	17.30
0-30	832.67	N.A.	35.70
0-40	1300.51	N.A.	55.80
0-60	2018.35	N.A.	86.60
0-80	2305.92	N.A.	98.90
0-90	2331.67	N.A.	100.00
10-90	2226.02	N.A.	95.50
20-40	897.21	N.A.	38.50
20-50	1309.93	N.A.	56.20
40-70	909.24	N.A.	39.00
60-80	287.57	N.A.	12.30
70-80	96.16	N.A.	4.10
80-90	25.75	N.A.	1.10
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	2331.67	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	105.65
10-20	297.65
20-30	429.37
30-40	467.85
40-50	412.72
50-60	305.12
60-70	191.41
70-80	96.16
80-90	25.75
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

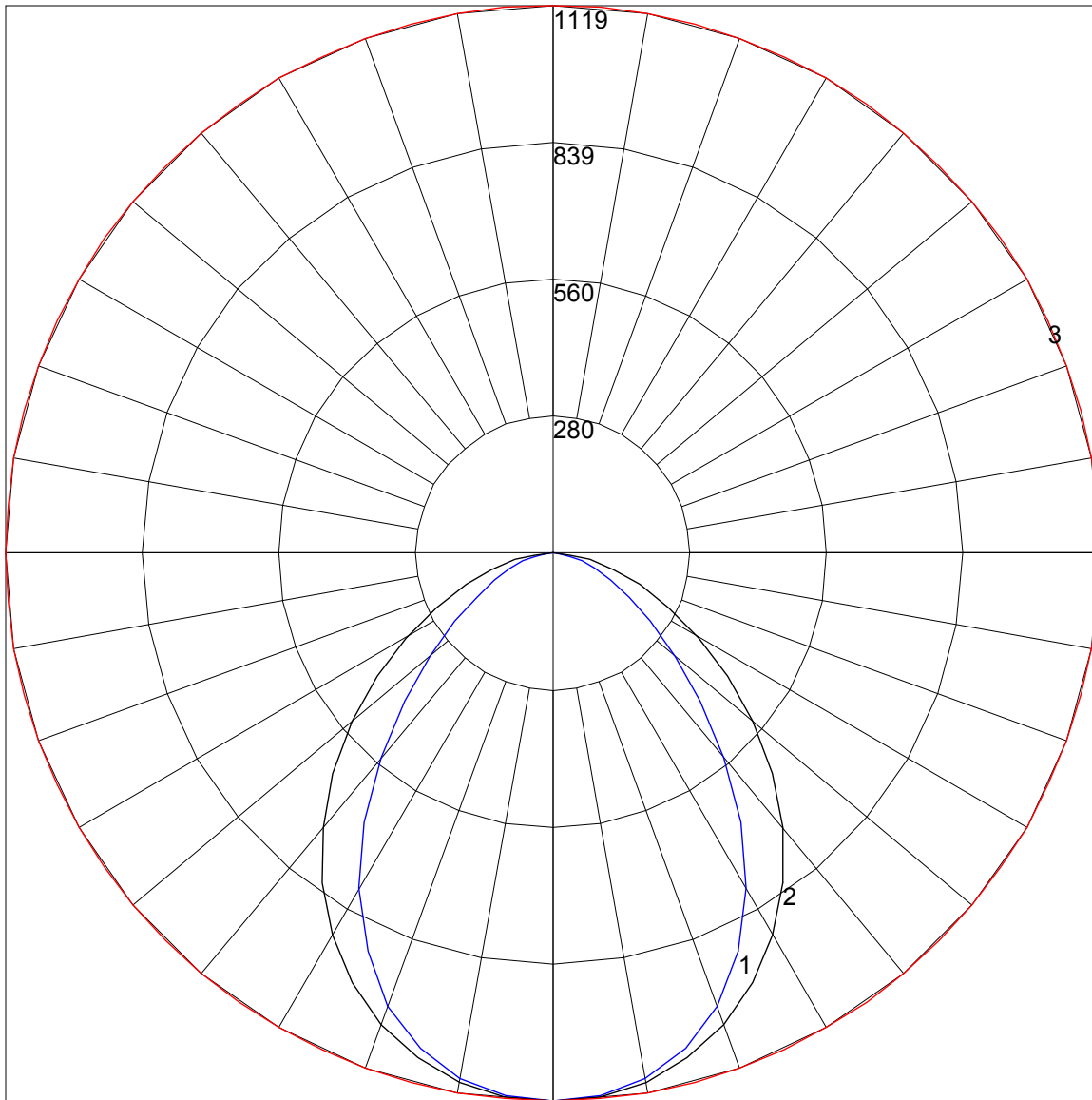
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	110	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75
3	93	84	77	71	91	82	76	70	80	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	67	61	72	65	60	69	64	59	67	62	59	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	54	48	72	61	53	47	59	52	47	58	51	47	56	51	46	44
7	69	57	48	43	67	56	48	43	54	47	42	53	47	42	52	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	43	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	35	44	39	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

POLAR GRAPH



Maximum Candela = 1119 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.)