

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P518026

Luminaire Tested: HVL8-4-LD4-1HI-50-UNV-O-EDD

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P518026
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1HI-50-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3827.0 lumens
Efficiency: N/A
Efficacy: 89.0 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

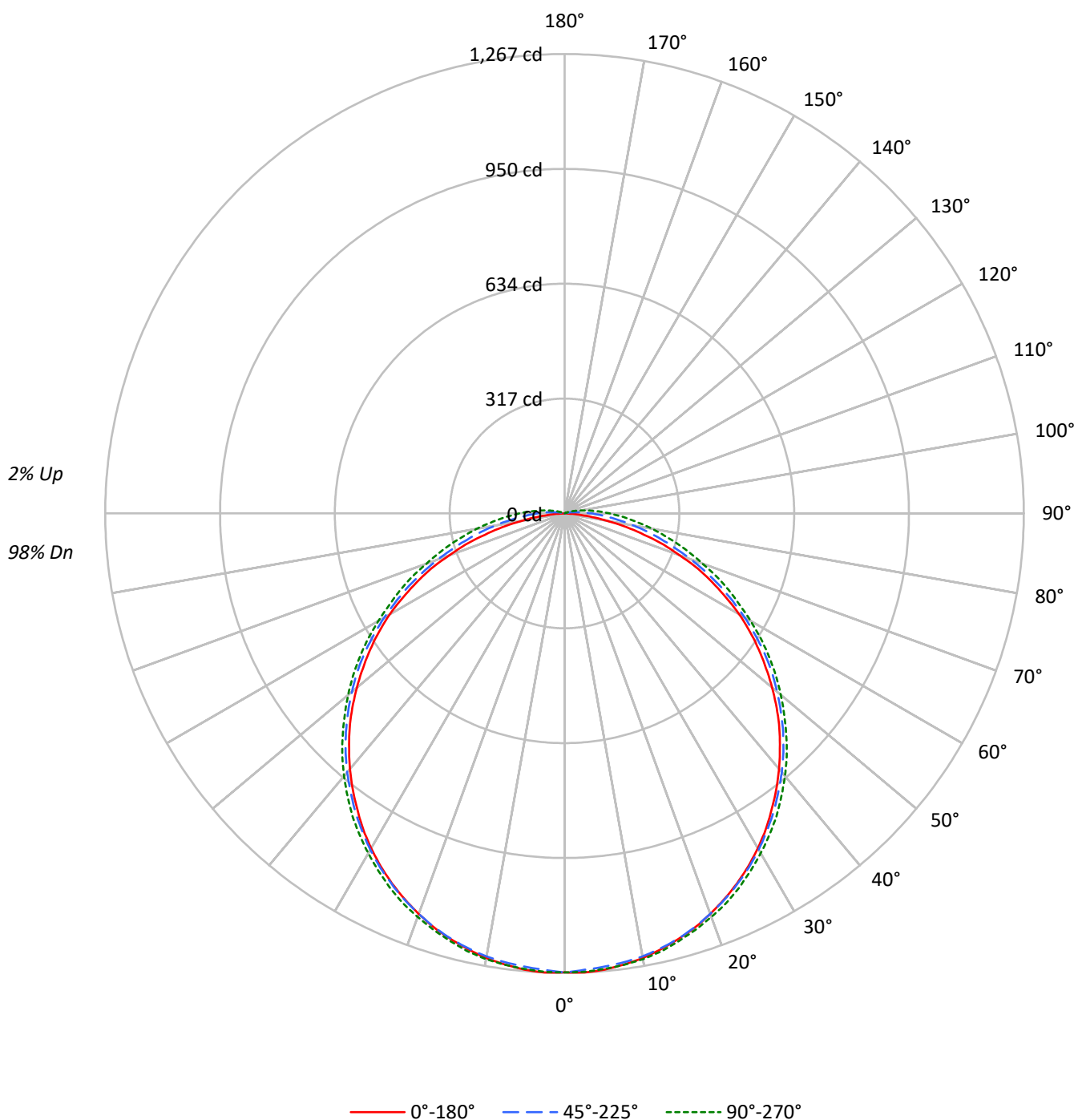
Input Watts (W): 43
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		0
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		98
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		81
2	98	89	82	76	95	87	80	75	83	77	73		79	75	71		67
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		56
4	81	69	60	53	79	67	59	52	65	57	52		62	56	51		47
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		41
6	69	55	46	40	67	54	46	39	52	45	39		50	44	38		36
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		32
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		28
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		25
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5109	5109	5109
5°	5099	4995	5000
10°	5065	4906	4900
15°	5021	4807	4780
20°	4974	4696	4663
25°	4918	4583	4544
30°	4854	4461	4409
35°	4772	4329	4276
40°	4686	4188	4120
45°	4595	4036	3951
50°	4475	3860	3771
55°	4347	3665	3571
60°	4192	3415	3338
65°	3943	3133	3107
70°	3583	2803	2839
75°	3073	2440	2595
80°	2311	2084	2372
85°	1236	1724	2160

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4595 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.8	3.1
10°-20°	343.6	9.0
20°-30°	521.3	13.6
30°-40°	630.4	16.5
40°-50°	657.7	17.2
50°-60°	601.4	15.7
60°-70°	468.8	12.2
70°-80°	293.3	7.7
80°-90°	133.2	3.5
90°-100°	44.6	1.2
100°-110°	11.2	0.3
110°-120°	1.8	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	984.7	25.7
0°-40°	1615.0	42.2
0°-60°	2874.1	75.1
0°-90°	3769.4	98.5
90°-120°	57.6	1.5
90°-150°	57.6	1.5
90°-180°	58.0	1.5
0°-180°	3827.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1266	1266	1266	1266	1266	
5°	1263	1261	1255	1261	1261	120
15°	1215	1217	1214	1221	1220	343
25°	1126	1127	1128	1137	1139	519
35°	997	1001	1005	1015	1020	624
45°	838	846	853	861	865	646
55°	654	662	674	684	689	585
65°	450	457	473	492	500	445
75°	228	242	277	310	322	243
85°	39	73	125	165	180	50
90°	0	27	74	111	124	2
95°	0	7	38	69	80	0
105°	1	1	6	18	25	1
115°	1	1	1	3	5	1
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1265.7	1265.7	1265.7	1265.7	1265.7
2.5°	1267.2	1265.4	1259.8	1265.4	1265.1
5°	1263.1	1260.7	1255.0	1261.0	1261.0
7.5°	1254.7	1253.8	1248.7	1255.6	1255.6
10°	1244.9	1244.6	1240.4	1247.8	1248.1
12.5°	1231.1	1232.3	1228.4	1235.6	1236.5
15°	1215.0	1217.1	1213.8	1220.7	1220.4
17.5°	1197.4	1198.6	1196.2	1204.0	1203.7
20°	1175.6	1177.1	1175.3	1183.4	1184.3
22.5°	1151.5	1153.5	1153.3	1161.6	1164.0
25°	1125.8	1126.7	1127.9	1137.4	1139.2
27.5°	1097.5	1098.9	1101.0	1109.7	1111.5
30°	1066.4	1068.8	1071.2	1080.1	1082.5
32.5°	1033.6	1036.0	1039.0	1050.6	1051.8
35°	996.6	1001.1	1005.3	1015.4	1019.6
37.5°	959.6	965.3	969.1	979.9	983.2
40°	920.5	926.2	932.4	943.8	945.9
42.5°	879.6	886.2	893.7	903.8	907.4
45°	838.5	845.9	852.8	861.1	865.3
47.5°	794.0	801.5	809.8	819.4	822.0
50°	748.0	756.7	765.7	774.6	779.4
52.5°	700.9	711.3	721.5	731.0	735.5
55°	654.4	662.1	674.3	684.2	688.7
57.5°	606.0	612.6	623.6	639.7	642.1
60°	556.8	562.8	574.1	587.2	592.6
62.5°	502.5	510.5	522.5	539.2	544.0
65°	449.7	457.4	473.2	492.0	499.8
67.5°	398.6	401.3	421.6	441.3	453.8
70°	338.4	348.5	372.1	396.3	405.8
72.5°	286.4	296.6	322.6	350.9	362.8
75°	227.7	241.7	276.9	310.0	321.7
77.5°	176.0	191.6	235.1	268.5	282.0
80°	122.9	147.1	194.5	232.1	246.8
82.5°	77.3	107.1	157.8	197.2	210.1
85°	39.4	72.8	125.0	165.3	179.9
87.5°	10.4	47.1	97.3	135.8	150.7
90°	0.3	27.2	73.7	110.7	124.1
92.5°	0.3	15.2	54.9	88.0	101.7
95°	0.3	7.2	38.2	69.2	80.0
97.5°	0.3	3.0	26.3	52.2	63.0
100°	0.3	1.5	16.7	37.9	47.1
102.5°	0.6	0.9	10.4	27.2	34.6
105°	0.6	0.9	6.3	18.5	24.8
107.5°	0.6	0.9	3.6	12.5	17.0
110°	0.9	0.9	2.1	7.8	11.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.9	0.9	1.2	5.1	7.5
115°	0.9	0.9	1.2	3.3	4.8
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)