

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: P518207

Luminaire Tested: HVL8-8-LD4-2HI-35-UNV-C-EDD-90

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: P518207
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-2HI-35-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17964.0 lumens
Efficiency: N/A
Efficacy: 104.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 8' x H: 0.17')
CIE Type: Direct

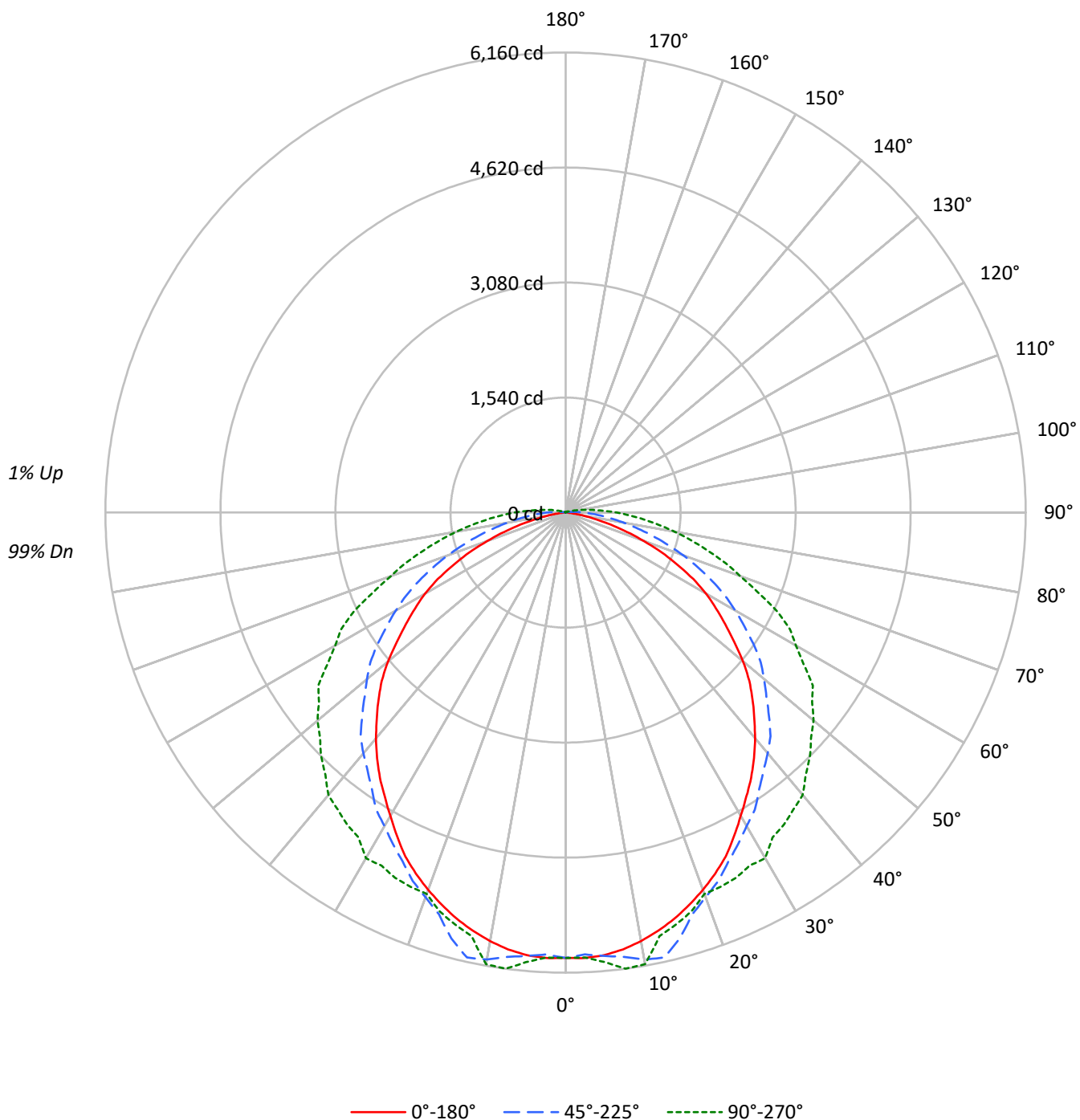
Input Watts (W): 172.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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					10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12035	12035	12035
5°	12029	11870	11976
10°	11893	12045	12050
15°	11699	11733	11185
20°	11458	11004	10696
25°	11201	10541	10763
30°	10800	10170	10882
35°	10522	9819	10689
40°	10222	9559	10756
45°	9900	9221	10562
50°	9505	8865	10481
55°	8912	8484	10475
60°	8471	7956	10028
65°	7546	7323	9708
70°	6224	6495	8706
75°	4518	5485	7948
80°	2613	4466	7135
85°	1045	3413	6285

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10562 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	573.1	3.2
10°-20°	1632.1	9.1
20°-30°	2428.4	13.5
30°-40°	2918.9	16.2
40°-50°	3072.3	17.1
50°-60°	2850.8	15.9
60°-70°	2254.0	12.5
70°-80°	1376.8	7.7
80°-90°	599.9	3.3
90°-100°	186.7	1.0
100°-110°	42.0	0.2
110°-120°	16.9	0.1
120°-130°	9.5	0.1
130°-140°	2.5	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°	4633.6	25.8
0°-40°	7552.5	42.0
0°-60°	13475.6	75.0
0°-90°	17706.4	98.6
90°-120°	245.6	1.4
90°-150°	257.6	1.4
90°-180°	258.0	1.4
0°-180°	17964.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5963	5963	5963	5963	5963	
5°	5948	5936	5957	6024	6041	564
15°	5630	5846	5904	5708	5712	1586
25°	5079	5403	5156	5311	5397	2332
35°	4333	4453	4520	4931	5098	2708
45°	3541	3557	3850	4459	4626	2730
55°	2608	2650	3071	3743	4040	2343
65°	1651	1703	2163	2863	3123	1635
75°	624	827	1206	1854	1970	681
85°	56	194	470	912	1047	86
90°	1	58	247	578	682	3
95°	1	15	108	317	388	1
105°	1	8	22	62	88	2
115°	1	5	17	28	29	2
125°	1	2	7	18	26	2
135°	2	2	2	6	8	1
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°	5963.1	5963.1	5963.1	5963.1	5963.1
2.5°	5970.4	5954.6	5921.8	5953.4	5961.9
5°	5948.5	5936.3	5957.0	6023.8	6040.8
7.5°	5898.7	5944.9	5999.5	6121.0	6159.9
10°	5824.6	5912.1	6076.0	6179.3	6139.2
12.5°	5734.7	5882.9	6102.8	5901.1	5807.6
15°	5630.2	5846.5	5903.5	5708.0	5711.6
17.5°	5507.6	5816.1	5640.0	5635.1	5599.9
20°	5375.1	5714.1	5480.8	5471.1	5433.5
22.5°	5233.0	5579.2	5339.9	5320.5	5422.5
25°	5078.8	5403.1	5156.5	5310.8	5397.0
27.5°	4885.6	5172.3	5003.4	5222.1	5330.2
30°	4690.0	4934.2	4846.7	5151.6	5343.6
32.5°	4506.6	4685.2	4718.0	5124.9	5156.5
35°	4332.9	4453.2	4520.0	4930.6	5098.2
37.5°	4142.2	4175.0	4352.3	4849.2	5010.7
40°	3947.8	3927.2	4211.4	4715.6	4939.1
42.5°	3738.9	3731.6	4062.0	4648.7	4760.5
45°	3540.9	3556.7	3849.5	4459.2	4625.7
47.5°	3338.1	3358.7	3647.8	4251.5	4458.0
50°	3102.4	3129.1	3468.0	4066.9	4332.9
52.5°	2847.3	2898.3	3293.1	3892.0	4160.4
55°	2608.0	2650.5	3070.8	3742.6	4040.2
57.5°	2389.4	2414.9	2841.2	3554.3	3779.0
60°	2174.4	2180.4	2625.0	3345.3	3560.4
62.5°	1927.8	1938.7	2402.7	3098.8	3386.6
65°	1650.8	1703.0	2163.4	2863.1	3123.1
67.5°	1392.1	1483.2	1919.3	2646.9	2782.9
70°	1115.1	1269.4	1680.0	2393.0	2489.0
72.5°	861.2	1042.2	1434.6	2108.8	2243.6
75°	624.4	827.2	1206.2	1853.7	1970.3
77.5°	420.3	626.8	992.4	1571.9	1726.1
80°	251.4	458.0	801.7	1310.7	1484.4
82.5°	128.8	307.3	621.9	1099.3	1254.8
85°	55.9	194.4	470.1	912.3	1047.1
87.5°	15.8	110.5	346.2	737.3	851.5
90°	1.2	58.3	246.6	578.2	681.5
92.5°	1.2	27.9	173.7	437.3	516.3
95°	1.2	14.6	108.1	317.0	387.5
97.5°	1.2	8.5	65.6	224.7	284.2
100°	1.2	7.3	38.9	149.4	202.9
102.5°	1.2	8.5	26.7	94.7	132.4
105°	1.2	8.5	21.9	62.0	87.5
107.5°	2.4	8.5	19.4	46.2	60.7
110°	1.2	7.3	20.7	35.2	47.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.4	6.1	19.4	29.2	35.2
115°	1.2	4.9	17.0	27.9	29.2
117.5°	2.4	3.6	13.4	27.9	29.2
120°	2.4	2.4	10.9	26.7	30.4
122.5°	2.4	2.4	8.5	24.3	29.2
125°	1.2	2.4	7.3	18.2	25.5
127.5°	2.4	2.4	6.1	14.6	19.4
130°	2.4	2.4	4.9	10.9	14.6
132.5°	2.4	2.4	3.6	8.5	10.9
135°	2.4	2.4	2.4	6.1	8.5
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)