

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: P518283

Luminaire Tested: HVL8-8-LD4-3STD-30-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: P518283
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-3STD-30-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20974.9 lumens
Efficiency: N/A
Efficacy: 109.8 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

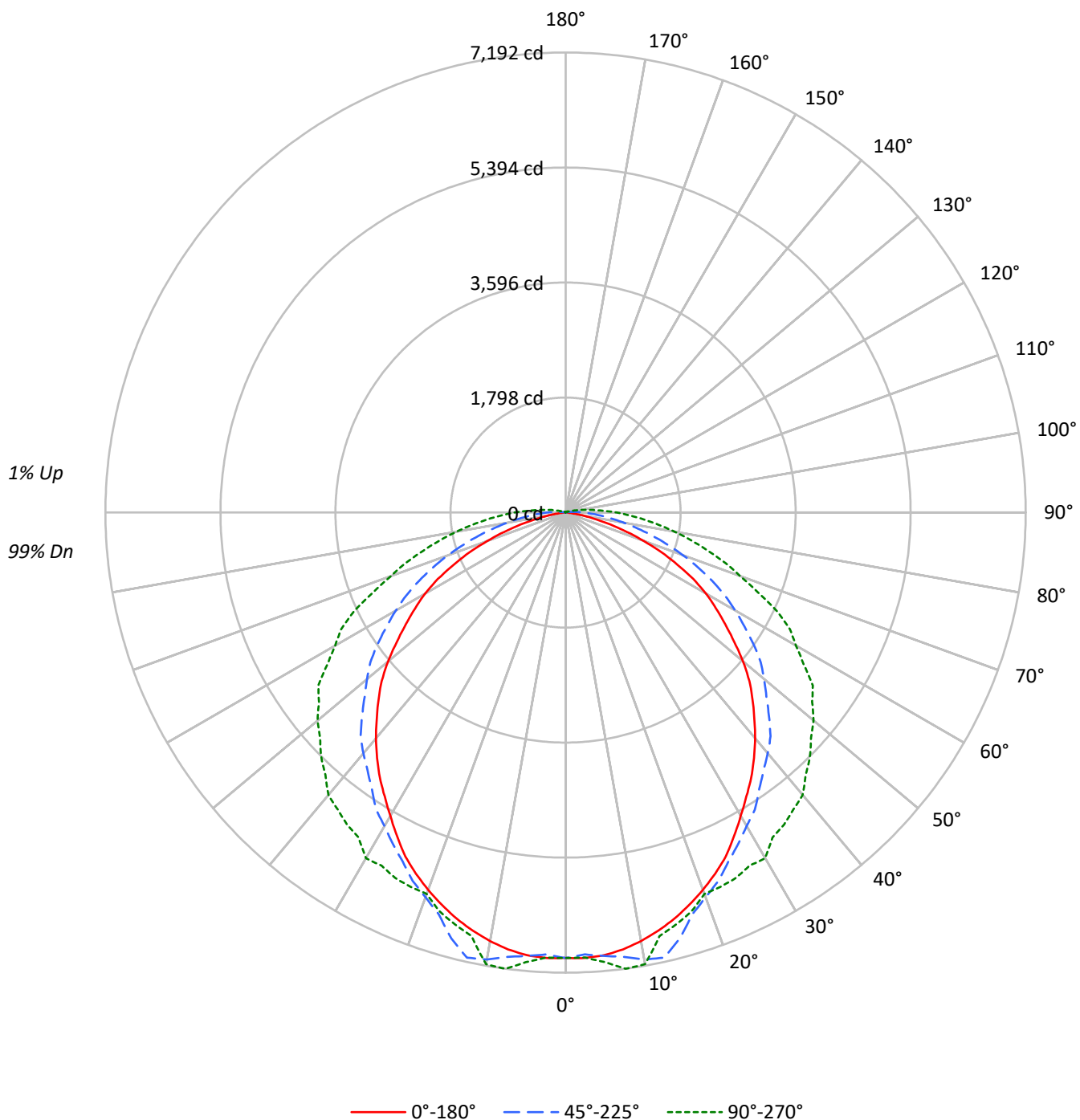
Input Watts (W): 191
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	14052	14052	14052
5°	14046	13859	13984
10°	13887	14064	14070
15°	13659	13700	13059
20°	13378	12849	12489
25°	13078	12308	12568
30°	12610	11875	12706
35°	12286	11465	12481
40°	11936	11161	12559
45°	11560	10767	12332
50°	11098	10351	12238
55°	10405	9906	12231
60°	9891	9290	11709
65°	8811	8551	11336
70°	7267	7584	10165
75°	5274	6404	9279
80°	3052	5215	8331
85°	1219	3985	7338

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 12332 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	669.2	3.2
10°-20°	1905.7	9.1
20°-30°	2835.4	13.5
30°-40°	3408.2	16.2
40°-50°	3587.3	17.1
50°-60°	3328.6	15.9
60°-70°	2631.8	12.5
70°-80°	1607.6	7.7
80°-90°	700.4	3.3
90°-100°	218.0	1.0
100°-110°	49.0	0.2
110°-120°	19.7	0.1
120°-130°	11.1	0.1
130°-140°	3.0	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°	5410.3	25.8
0°-40°	8818.4	42.0
0°-60°	15734.3	75.0
0°-90°	20674.2	98.6
90°-120°	286.7	1.4
90°-150°	300.8	1.4
90°-180°	301.0	1.4
0°-180°	20974.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6963	6963	6963	6963	6963	
5°	6946	6931	6956	7034	7053	658
15°	6574	6826	6893	6665	6669	1852
25°	5930	6309	6021	6201	6302	2722
35°	5059	5200	5278	5757	5953	3162
45°	4134	4153	4495	5207	5401	3187
55°	3045	3095	3586	4370	4717	2736
65°	1928	1988	2526	3343	3646	1909
75°	729	966	1408	2164	2300	796
85°	65	227	549	1065	1223	101
90°	1	68	288	675	796	3
95°	1	17	126	370	452	1
105°	1	10	26	72	102	2
115°	1	6	20	33	34	2
125°	1	3	8	21	30	2
135°	3	3	3	7	10	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°	6962.6	6962.6	6962.6	6962.6	6962.6
2.5°	6971.1	6952.6	6914.3	6951.2	6961.1
5°	6945.5	6931.4	6955.5	7033.5	7053.3
7.5°	6887.4	6941.3	7005.1	7146.9	7192.3
10°	6800.9	6903.0	7094.5	7215.0	7168.2
12.5°	6695.9	6868.9	7125.7	6890.2	6781.0
15°	6573.9	6826.4	6893.1	6664.7	6669.0
17.5°	6430.7	6790.9	6585.3	6579.6	6538.5
20°	6276.1	6671.8	6399.5	6388.1	6344.2
22.5°	6110.1	6514.4	6235.0	6212.3	6331.4
25°	5930.0	6308.7	6020.8	6200.9	6301.6
27.5°	5704.5	6039.2	5842.1	6097.4	6223.6
30°	5476.2	5761.2	5659.1	6015.1	6239.2
32.5°	5262.0	5470.5	5508.8	5983.9	6020.8
35°	5059.2	5199.6	5277.6	5757.0	5952.7
37.5°	4836.5	4874.8	5081.9	5662.0	5850.6
40°	4609.6	4585.4	4917.3	5505.9	5766.9
42.5°	4365.6	4357.1	4742.9	5427.9	5558.4
45°	4134.4	4152.9	4494.7	5206.7	5401.0
47.5°	3897.6	3921.7	4259.2	4964.1	5205.3
50°	3622.4	3653.6	4049.3	4748.6	5059.2
52.5°	3324.6	3384.1	3845.1	4544.3	4857.8
55°	3045.1	3094.8	3585.5	4369.9	4717.4
57.5°	2789.8	2819.6	3317.5	4150.0	4412.4
60°	2538.8	2545.9	3065.0	3906.1	4157.1
62.5°	2250.9	2263.6	2805.4	3618.1	3954.3
65°	1927.5	1988.5	2526.0	3343.0	3646.5
67.5°	1625.4	1731.8	2241.0	3090.5	3249.4
70°	1302.0	1482.1	1961.5	2794.1	2906.1
72.5°	1005.6	1216.9	1675.0	2462.2	2619.6
75°	729.0	965.9	1408.4	2164.4	2300.5
77.5°	490.7	731.9	1158.8	1835.3	2015.4
80°	293.6	534.7	936.1	1530.4	1733.2
82.5°	150.3	358.8	726.2	1283.6	1465.1
85°	65.2	226.9	548.9	1065.2	1222.6
87.5°	18.4	129.1	404.2	860.9	994.2
90°	1.4	68.1	287.9	675.1	795.7
92.5°	1.4	32.6	202.8	510.6	602.8
95°	1.4	17.0	126.2	370.2	452.4
97.5°	1.4	9.9	76.6	262.4	331.9
100°	1.4	8.5	45.4	174.5	236.9
102.5°	1.4	9.9	31.2	110.6	154.6
105°	1.4	9.9	25.5	72.3	102.1
107.5°	2.8	9.9	22.7	53.9	70.9
110°	1.4	8.5	24.1	41.1	55.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.8	7.1	22.7	34.0	41.1
115°	1.4	5.7	19.9	32.6	34.0
117.5°	2.8	4.3	15.6	32.6	34.0
120°	2.8	2.8	12.8	31.2	35.5
122.5°	2.8	2.8	9.9	28.4	34.0
125°	1.4	2.8	8.5	21.3	29.8
127.5°	2.8	2.8	7.1	17.0	22.7
130°	2.8	2.8	5.7	12.8	17.0
132.5°	2.8	2.8	4.3	9.9	12.8
135°	2.8	2.8	2.8	7.1	9.9
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)