

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: P518240

Luminaire Tested: HVL8-8-LD4-2STD-35-UNV-C-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: P518240
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-2STD-35-UNV-C-EDD
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11681.0 lumens
Efficiency: N/A
Efficacy: 89.4 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

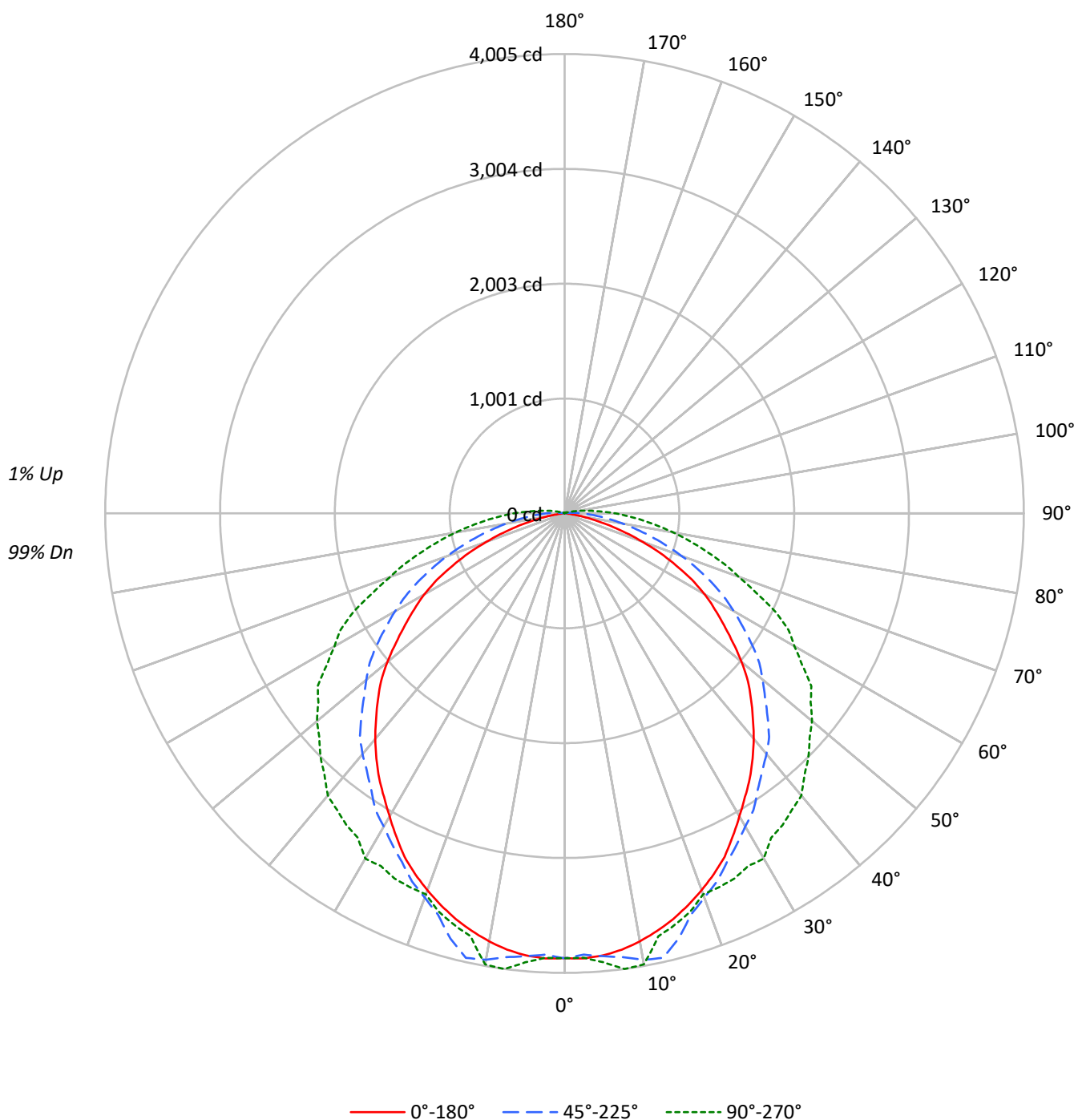
Input Watts (W): 130.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	7826	7826	7826
5°	7822	7718	7788
10°	7733	7832	7836
15°	7607	7629	7273
20°	7450	7156	6955
25°	7283	6854	6999
30°	7023	6613	7076
35°	6842	6385	6951
40°	6647	6216	6994
45°	6438	5996	6868
50°	6180	5765	6815
55°	5795	5517	6811
60°	5508	5173	6521
65°	4907	4762	6313
70°	4047	4223	5661
75°	2937	3566	5168
80°	1699	2904	4639
85°	679	2220	4087

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 6868 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	372.7	3.2
10°-20°	1061.3	9.1
20°-30°	1579.0	13.5
30°-40°	1898.0	16.2
40°-50°	1997.8	17.1
50°-60°	1853.7	15.9
60°-70°	1465.7	12.5
70°-80°	895.3	7.7
80°-90°	390.1	3.3
90°-100°	121.4	1.0
100°-110°	27.3	0.2
110°-120°	11.0	0.1
120°-130°	6.2	0.1
130°-140°	1.7	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°	3013.0	25.8
0°-40°	4911.0	42.0
0°-60°	8762.5	75.0
0°-90°	11513.5	98.6
90°-120°	159.7	1.4
90°-150°	167.5	1.4
90°-180°	168.0	1.4
0°-180°	11681.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3878	3878	3878	3878	3878	
5°	3868	3860	3874	3917	3928	367
15°	3661	3802	3839	3712	3714	1031
25°	3302	3513	3353	3453	3509	1516
35°	2818	2896	2939	3206	3315	1761
45°	2302	2313	2503	2900	3008	1775
55°	1696	1724	1997	2434	2627	1524
65°	1073	1107	1407	1862	2031	1063
75°	406	538	784	1205	1281	443
85°	36	126	306	593	681	56
90°	1	38	160	376	443	2
95°	1	10	70	206	252	1
105°	1	6	14	40	57	1
115°	1	3	11	18	19	1
125°	1	2	5	12	17	1
135°	2	2	2	4	6	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°	3877.5	3877.5	3877.5	3877.5	3877.5
2.5°	3882.2	3871.9	3850.6	3871.1	3876.7
5°	3868.0	3860.1	3873.5	3916.9	3928.0
7.5°	3835.6	3865.6	3901.2	3980.1	4005.4
10°	3787.4	3844.3	3950.9	4018.1	3992.0
12.5°	3729.0	3825.3	3968.3	3837.2	3776.4
15°	3661.0	3801.6	3838.8	3711.6	3714.0
17.5°	3581.3	3781.9	3667.4	3664.2	3641.3
20°	3495.2	3715.5	3563.9	3557.6	3533.1
22.5°	3402.7	3627.9	3472.3	3459.6	3526.0
25°	3302.4	3513.3	3353.0	3453.3	3509.4
27.5°	3176.8	3363.3	3253.5	3395.6	3465.9
30°	3049.7	3208.4	3151.6	3349.8	3474.6
32.5°	2930.4	3046.5	3067.8	3332.4	3353.0
35°	2817.5	2895.7	2939.1	3206.1	3315.1
37.5°	2693.4	2714.8	2830.1	3153.1	3258.2
40°	2567.1	2553.6	2738.5	3066.3	3211.6
42.5°	2431.2	2426.5	2641.3	3022.8	3095.5
45°	2302.5	2312.7	2503.1	2899.6	3007.8
47.5°	2170.6	2184.0	2372.0	2764.5	2898.8
50°	2017.3	2034.7	2255.1	2644.5	2817.5
52.5°	1851.4	1884.6	2141.3	2530.7	2705.3
55°	1695.8	1723.5	1996.8	2433.6	2627.1
57.5°	1553.7	1570.3	1847.5	2311.2	2457.3
60°	1413.9	1417.8	1706.9	2175.3	2315.1
62.5°	1253.5	1260.6	1562.4	2015.0	2202.1
65°	1073.4	1107.4	1406.8	1861.7	2030.7
67.5°	905.2	964.4	1248.0	1721.1	1809.6
70°	725.1	825.4	1092.4	1556.0	1618.4
72.5°	560.0	677.7	932.8	1371.2	1458.9
75°	406.0	537.9	784.3	1205.3	1281.2
77.5°	273.3	407.6	645.3	1022.1	1122.4
80°	163.5	297.8	521.3	852.3	965.2
82.5°	83.7	199.8	404.4	714.8	815.9
85°	36.3	126.4	305.7	593.2	680.9
87.5°	10.3	71.9	225.1	479.4	553.7
90°	0.8	37.9	160.3	376.0	443.1
92.5°	0.8	18.2	113.0	284.4	335.7
95°	0.8	9.5	70.3	206.2	252.0
97.5°	0.8	5.5	42.7	146.1	184.8
100°	0.8	4.7	25.3	97.2	131.9
102.5°	0.8	5.5	17.4	61.6	86.1
105°	0.8	5.5	14.2	40.3	56.9
107.5°	1.6	5.5	12.6	30.0	39.5
110°	0.8	4.7	13.4	22.9	30.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.6	3.9	12.6	19.0	22.9
115°	0.8	3.2	11.1	18.2	19.0
117.5°	1.6	2.4	8.7	18.2	19.0
120°	1.6	1.6	7.1	17.4	19.7
122.5°	1.6	1.6	5.5	15.8	19.0
125°	0.8	1.6	4.7	11.8	16.6
127.5°	1.6	1.6	3.9	9.5	12.6
130°	1.6	1.6	3.2	7.1	9.5
132.5°	1.6	1.6	2.4	5.5	7.1
135°	1.6	1.6	1.6	3.9	5.5
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)