

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: P518122

Luminaire Tested: HVL8-4-LD4-3HI-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: P518122
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3HI-50-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

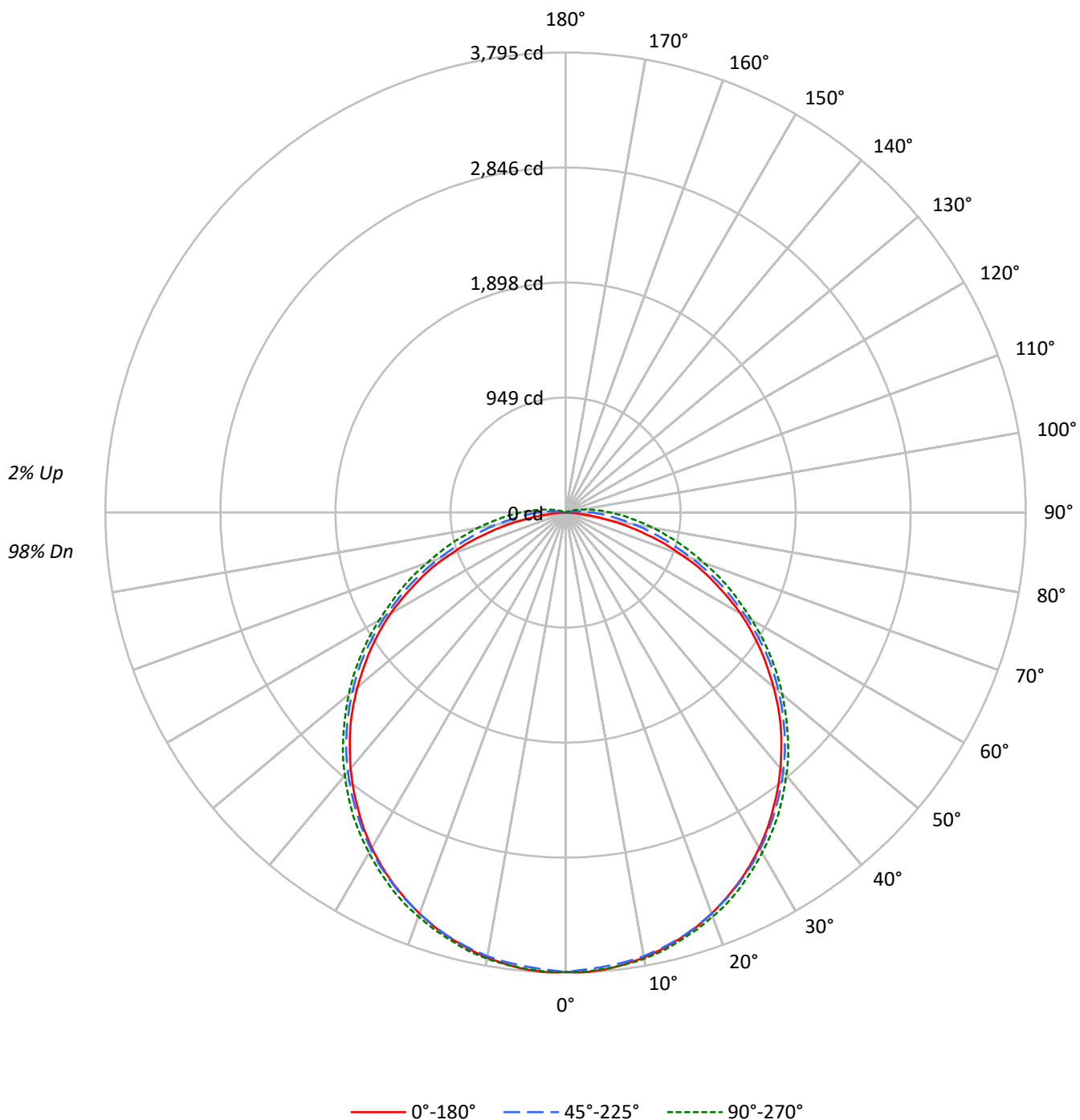
Lumens per Lamp: N/A
Luminaire Lumens: 11461.0 lumens
Efficiency: N/A
Efficacy: 91.0 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

Input Watts (W): 125.9
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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	15301	15301	15301
5°	15271	14959	14974
10°	15169	14691	14674
15°	15038	14395	14314
20°	14897	14063	13964
25°	14730	13724	13608
30°	14536	13361	13204
35°	14290	12962	12804
40°	14035	12543	12338
45°	13760	12086	11834
50°	13402	11558	11292
55°	13016	10978	10695
60°	12555	10226	9997
65°	11806	9384	9306
70°	10730	8394	8502
75°	9202	7308	7771
80°	6923	6241	7104
85°	3702	5164	6468

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 13760 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	358.7	3.1
10°-20°	1028.9	9.0
20°-30°	1561.2	13.6
30°-40°	1887.8	16.5
40°-50°	1969.8	17.2
50°-60°	1801.0	15.7
60°-70°	1403.9	12.2
70°-80°	878.2	7.7
80°-90°	398.9	3.5
90°-100°	133.7	1.2
100°-110°	33.6	0.3
110°-120°	5.3	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°	2948.9	25.7
0°-40°	4836.7	42.2
0°-60°	8607.4	75.1
0°-90°	11288.4	98.5
90°-120°	172.5	1.5
90°-150°	172.5	1.5
90°-180°	173.0	1.5
0°-180°	11461.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3791	3791	3791	3791	3791	
5°	3783	3775	3758	3776	3776	359
15°	3639	3645	3635	3656	3655	1027
25°	3372	3374	3378	3406	3412	1554
35°	2985	2998	3010	3041	3053	1868
45°	2511	2533	2554	2579	2591	1935
55°	1960	1983	2020	2049	2062	1751
65°	1347	1370	1417	1474	1497	1332
75°	682	724	829	928	963	727
85°	118	218	374	495	539	149
90°	1	81	221	332	372	5
95°	1	21	114	207	240	1
105°	2	3	19	55	74	2
115°	3	3	4	10	14	2
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°	3790.6	3790.6	3790.6	3790.6	3790.6
2.5°	3795.1	3789.7	3772.7	3789.7	3788.8
5°	3782.6	3775.4	3758.4	3776.3	3776.3
7.5°	3757.5	3754.9	3739.7	3760.2	3760.2
10°	3728.1	3727.2	3714.7	3737.0	3737.9
12.5°	3687.0	3690.5	3678.9	3700.4	3703.0
15°	3638.7	3645.0	3635.1	3655.7	3654.8
17.5°	3586.0	3589.5	3582.4	3605.6	3604.7
20°	3520.7	3525.2	3519.8	3544.0	3546.7
22.5°	3448.4	3454.6	3453.7	3478.7	3485.9
25°	3371.5	3374.2	3377.8	3406.4	3411.7
27.5°	3286.6	3291.1	3297.3	3323.3	3328.6
30°	3193.7	3200.8	3208.0	3234.8	3241.9
32.5°	3095.4	3102.5	3111.5	3146.3	3149.9
35°	2984.6	2998.0	3010.5	3040.9	3053.4
37.5°	2873.8	2890.8	2902.4	2934.5	2944.4
40°	2756.7	2773.7	2792.5	2826.4	2832.7
42.5°	2634.3	2654.0	2676.3	2706.7	2717.4
45°	2511.0	2533.3	2553.9	2578.9	2591.4
47.5°	2377.8	2400.2	2425.2	2453.8	2461.8
50°	2240.2	2266.1	2293.0	2319.8	2334.1
52.5°	2099.0	2130.3	2160.7	2189.3	2202.7
55°	1959.6	1982.9	2019.5	2049.0	2062.4
57.5°	1814.9	1834.5	1867.6	1915.9	1923.0
60°	1667.4	1685.3	1719.3	1758.6	1774.7
62.5°	1504.8	1528.9	1564.7	1614.7	1629.0
65°	1346.6	1369.9	1417.2	1473.5	1496.8
67.5°	1193.8	1201.9	1262.6	1321.6	1359.1
70°	1013.3	1043.7	1114.3	1186.7	1215.3
72.5°	857.8	888.2	966.0	1050.9	1086.6
75°	681.8	723.8	829.3	928.4	963.3
77.5°	527.2	573.7	704.1	804.2	844.4
80°	368.2	440.5	582.6	695.2	739.0
82.5°	231.4	320.8	472.7	590.7	629.1
85°	118.0	218.0	374.4	495.0	538.8
87.5°	31.3	141.2	291.3	406.6	451.3
90°	0.9	81.3	220.7	331.5	371.7
92.5°	0.9	45.6	164.4	263.6	304.7
95°	0.9	21.4	114.4	207.3	239.5
97.5°	0.9	8.9	78.6	156.4	188.5
100°	0.9	4.5	50.0	113.5	141.2
102.5°	1.8	2.7	31.3	81.3	103.7
105°	1.8	2.7	18.8	55.4	74.2
107.5°	1.8	2.7	10.7	37.5	50.9
110°	2.7	2.7	6.3	23.2	34.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.7	2.7	3.6	15.2	22.3
115°	2.7	2.7	3.6	9.8	14.3
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)