

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: P518256

Luminaire Tested: HVL8-8-LD4-3HI-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: P518256
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-3HI-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: 23705.0 lumens
Efficiency: N/A
Efficacy: 94.1 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

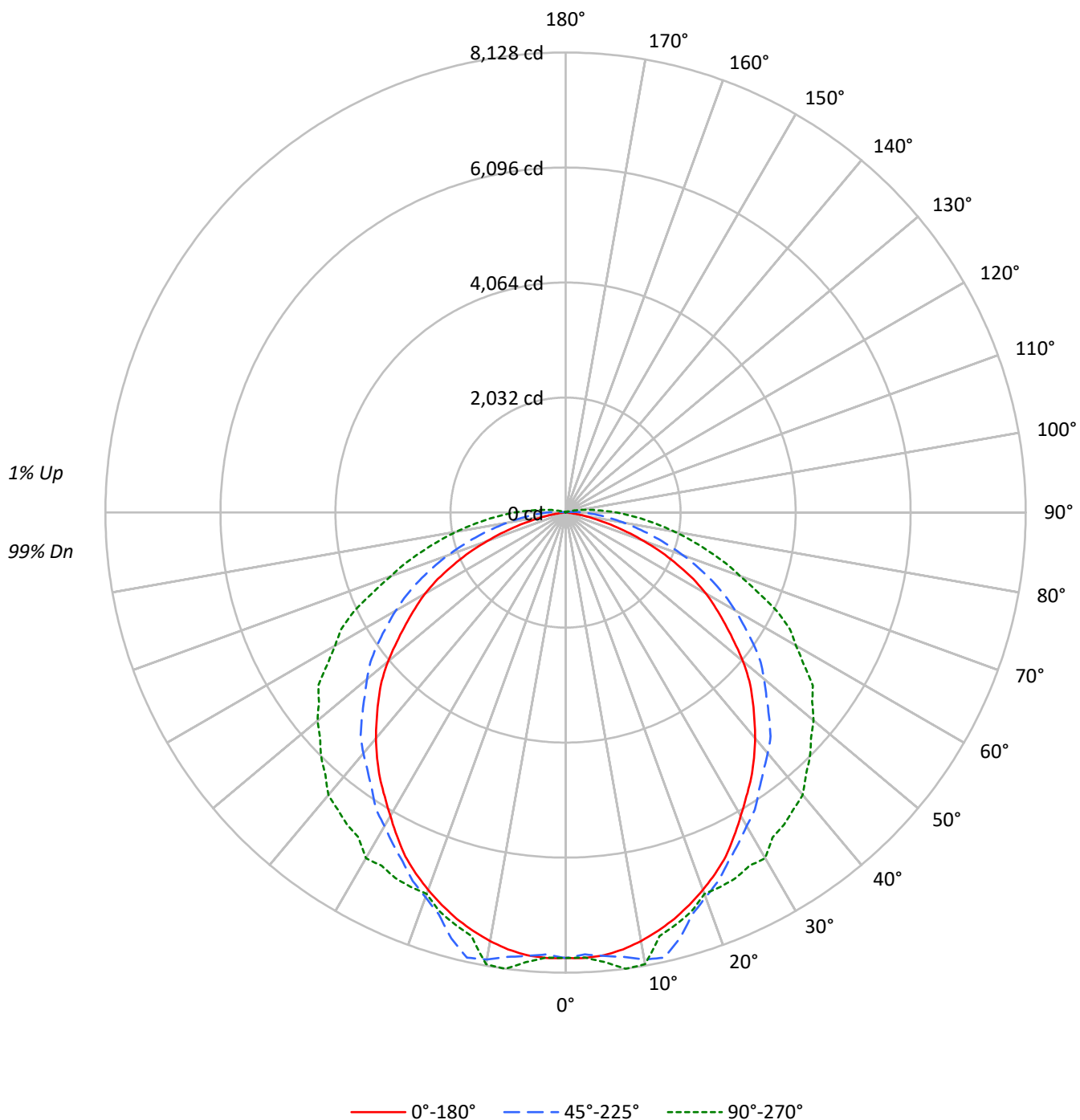
Input Watts (W): 251.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	15881	15881	15881
5°	15874	15663	15804
10°	15694	15895	15901
15°	15437	15482	14759
20°	15119	14521	14115
25°	14780	13910	14203
30°	14252	13421	14360
35°	13884	12957	14106
40°	13489	12614	14193
45°	13064	12168	13937
50°	12543	11699	13831
55°	11760	11196	13823
60°	11178	10499	13233
65°	9958	9664	12811
70°	8213	8571	11488
75°	5961	7238	10487
80°	3449	5893	9415
85°	1378	4504	8293

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 13937 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	756.3	3.2
10°-20°	2153.7	9.1
20°-30°	3204.5	13.5
30°-40°	3851.8	16.2
40°-50°	4054.2	17.1
50°-60°	3761.8	15.9
60°-70°	2974.4	12.5
70°-80°	1816.9	7.7
80°-90°	791.6	3.3
90°-100°	246.4	1.0
100°-110°	55.4	0.2
110°-120°	22.3	0.1
120°-130°	12.5	0.1
130°-140°	3.4	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°	6114.4	25.8
0°-40°	9966.2	42.0
0°-60°	17782.2	75.0
0°-90°	23365.1	98.6
90°-120°	324.0	1.4
90°-150°	339.9	1.4
90°-180°	340.0	1.4
0°-180°	23705.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7869	7869	7869	7869	7869	
5°	7850	7834	7861	7949	7971	744
15°	7430	7715	7790	7532	7537	2093
25°	6702	7130	6804	7008	7122	3077
35°	5718	5876	5964	6506	6728	3573
45°	4672	4693	5080	5884	6104	3602
55°	3442	3498	4052	4939	5331	3092
65°	2178	2247	2855	3778	4121	2157
75°	824	1092	1592	2446	2600	899
85°	74	256	620	1204	1382	114
90°	2	77	325	763	899	4
95°	2	19	143	418	511	1
105°	2	11	29	82	115	2
115°	2	6	22	37	38	3
125°	2	3	10	24	34	3
135°	3	3	3	8	11	2
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°	7868.8	7868.8	7868.8	7868.8	7868.8
2.5°	7878.4	7857.6	7814.3	7855.9	7867.2
5°	7849.5	7833.5	7860.8	7948.9	7971.4
7.5°	7783.8	7844.7	7916.9	8077.2	8128.4
10°	7686.0	7801.4	8017.8	8154.1	8101.2
12.5°	7567.4	7763.0	8053.1	7787.0	7663.6
15°	7429.6	7714.9	7790.2	7532.2	7537.0
17.5°	7267.7	7674.8	7442.4	7436.0	7389.5
20°	7093.0	7540.2	7232.4	7219.6	7169.9
22.5°	6905.4	7362.2	7046.5	7020.8	7155.5
25°	6701.8	7129.8	6804.4	7008.0	7121.8
27.5°	6447.0	6825.3	6602.5	6891.0	7033.6
30°	6188.9	6511.1	6395.7	6798.0	7051.3
32.5°	5946.9	6182.5	6225.8	6762.8	6804.4
35°	5717.6	5876.3	5964.5	6506.3	6727.5
37.5°	5466.0	5509.3	5743.3	6398.9	6612.1
40°	5209.5	5182.3	5557.3	6222.6	6517.5
42.5°	4933.8	4924.2	5360.2	6134.4	6281.9
45°	4672.5	4693.4	5079.7	5884.3	6103.9
47.5°	4404.8	4432.1	4813.6	5610.2	5882.7
50°	4093.9	4129.1	4576.4	5366.6	5717.6
52.5°	3757.3	3824.6	4345.5	5135.8	5490.0
55°	3441.5	3497.6	4052.2	4938.6	5331.3
57.5°	3153.0	3186.6	3749.2	4690.2	4986.7
60°	2869.2	2877.3	3463.9	4414.5	4698.2
62.5°	2543.8	2558.3	3170.6	4089.1	4469.0
65°	2178.4	2247.3	2854.8	3778.1	4121.1
67.5°	1837.0	1957.2	2532.6	3492.8	3672.3
70°	1471.5	1675.1	2216.8	3157.8	3284.4
72.5°	1136.5	1375.3	1893.1	2782.7	2960.6
75°	823.9	1091.6	1591.7	2446.1	2599.9
77.5°	554.6	827.1	1309.6	2074.2	2277.8
80°	331.8	604.3	1057.9	1729.6	1958.8
82.5°	169.9	405.5	820.7	1450.6	1655.8
85°	73.7	256.5	620.3	1203.8	1381.7
87.5°	20.8	145.9	456.8	973.0	1123.7
90°	1.6	76.9	325.4	763.0	899.2
92.5°	1.6	36.9	229.2	577.1	681.2
95°	1.6	19.2	142.7	418.4	511.3
97.5°	1.6	11.2	86.6	296.5	375.1
100°	1.6	9.6	51.3	197.2	267.7
102.5°	1.6	11.2	35.3	125.0	174.7
105°	1.6	11.2	28.9	81.7	115.4
107.5°	3.2	11.2	25.6	60.9	80.1
110°	1.6	9.6	27.2	46.5	62.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.2	8.0	25.6	38.5	46.5
115°	1.6	6.4	22.4	36.9	38.5
117.5°	3.2	4.8	17.6	36.9	38.5
120°	3.2	3.2	14.4	35.3	40.1
122.5°	3.2	3.2	11.2	32.1	38.5
125°	1.6	3.2	9.6	24.0	33.7
127.5°	3.2	3.2	8.0	19.2	25.6
130°	3.2	3.2	6.4	14.4	19.2
132.5°	3.2	3.2	4.8	11.2	14.4
135°	3.2	3.2	3.2	8.0	11.2
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)