

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: P517874

Luminaire Tested: HVL8-2-LD4-1HI-35-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: P517874
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1HI-35-UNV-O-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1792.0 lumens
Efficiency: N/A
Efficacy: 83.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

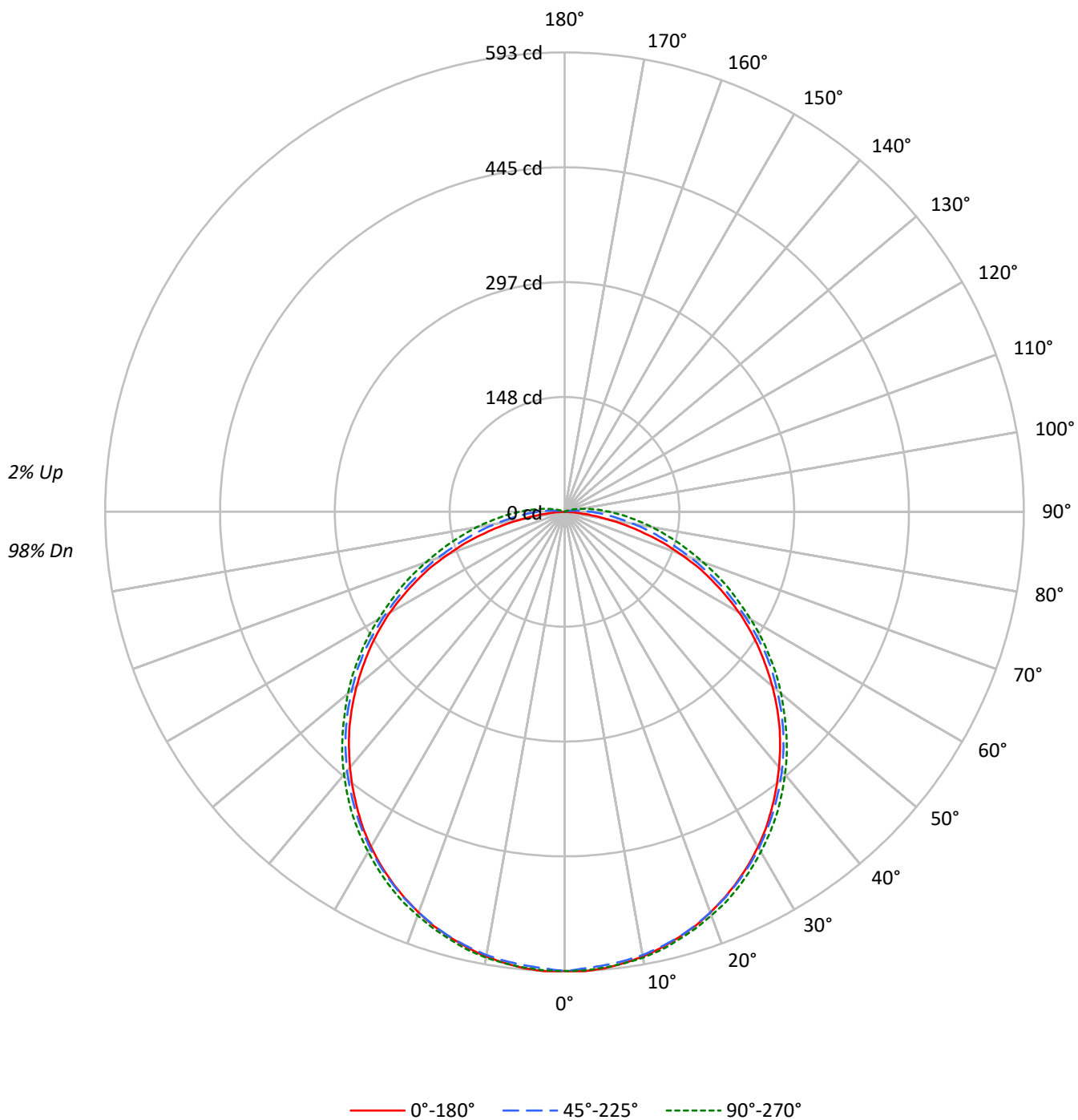
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4785	4785	4785
5°	4758	4666	4682
10°	4709	4571	4588
15°	4651	4468	4476
20°	4590	4355	4366
25°	4520	4238	4255
30°	4442	4116	4129
35°	4346	3982	4004
40°	4245	3841	3858
45°	4137	3689	3701
50°	4002	3515	3531
55°	3854	3325	3345
60°	3678	3082	3126
65°	3413	2812	2910
70°	3042	2495	2658
75°	2536	2152	2430
80°	1818	1812	2221
85°	873	1467	2024

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4137 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.1	3.1
10°-20°	160.9	9.0
20°-30°	244.1	13.6
30°-40°	295.2	16.5
40°-50°	308.0	17.2
50°-60°	281.6	15.7
60°-70°	219.5	12.2
70°-80°	137.3	7.7
80°-90°	62.4	3.5
90°-100°	20.9	1.2
100°-110°	5.2	0.3
110°-120°	0.8	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°	461.1	25.7
0°-40°	756.2	42.2
0°-60°	1345.8	75.1
0°-90°	1765.0	98.5
90°-120°	27.0	1.5
90°-150°	27.0	1.5
90°-180°	27.0	1.5
0°-180°	1792.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	593	593	593	593	593	
5°	591	590	588	590	590	56
15°	569	570	568	572	571	161
25°	527	528	528	533	533	243
35°	467	469	471	476	477	292
45°	393	396	399	403	405	303
55°	306	310	316	320	322	274
65°	211	214	222	230	234	208
75°	107	113	130	145	151	114
85°	18	34	58	77	84	23
90°	0	13	34	52	58	1
95°	0	3	18	32	37	0
105°	0	0	3	9	12	0
115°	0	0	1	2	2	0
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°	592.7	592.7	592.7	592.7	592.7
2.5°	593.4	592.5	589.9	592.5	592.4
5°	591.4	590.3	587.7	590.4	590.4
7.5°	587.5	587.1	584.7	587.9	587.9
10°	582.9	582.8	580.8	584.3	584.4
12.5°	576.5	577.0	575.2	578.6	579.0
15°	568.9	569.9	568.4	571.6	571.4
17.5°	560.7	561.2	560.1	563.8	563.6
20°	550.5	551.2	550.4	554.1	554.5
22.5°	539.2	540.2	540.0	543.9	545.0
25°	527.2	527.6	528.1	532.6	533.4
27.5°	513.9	514.6	515.6	519.6	520.5
30°	499.4	500.5	501.6	505.8	506.9
32.5°	484.0	485.1	486.5	491.9	492.5
35°	466.7	468.8	470.7	475.5	477.4
37.5°	449.3	452.0	453.8	458.8	460.4
40°	431.0	433.7	436.6	441.9	442.9
42.5°	411.9	415.0	418.5	423.2	424.9
45°	392.6	396.1	399.3	403.2	405.2
47.5°	371.8	375.3	379.2	383.7	384.9
50°	350.3	354.3	358.5	362.7	364.9
52.5°	328.2	333.1	337.8	342.3	344.4
55°	306.4	310.0	315.8	320.4	322.5
57.5°	283.8	286.8	292.0	299.6	300.7
60°	260.7	263.5	268.8	275.0	277.5
62.5°	235.3	239.1	244.6	252.5	254.7
65°	210.6	214.2	221.6	230.4	234.0
67.5°	186.7	187.9	197.4	206.6	212.5
70°	158.4	163.2	174.2	185.5	190.0
72.5°	134.1	138.9	151.0	164.3	169.9
75°	106.6	113.2	129.7	145.2	150.6
77.5°	82.4	89.7	110.1	125.7	132.0
80°	57.6	68.9	91.1	108.7	115.5
82.5°	36.2	50.2	73.9	92.4	98.4
85°	18.4	34.1	58.5	77.4	84.3
87.5°	4.9	22.1	45.5	63.6	70.6
90°	0.1	12.7	34.5	51.8	58.1
92.5°	0.1	7.1	25.7	41.2	47.6
95°	0.1	3.4	17.9	32.4	37.4
97.5°	0.1	1.4	12.3	24.5	29.5
100°	0.1	0.7	7.8	17.7	22.1
102.5°	0.3	0.4	4.9	12.7	16.2
105°	0.3	0.4	2.9	8.7	11.6
107.5°	0.3	0.4	1.7	5.9	8.0
110°	0.4	0.4	1.0	3.6	5.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.4	0.6	2.4	3.5
115°	0.4	0.4	0.6	1.5	2.2
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)