

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: P517906

Luminaire Tested: HVL8-2-LD4-1STD-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: P517906
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1STD-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: 1392.0 lumens
Efficiency: N/A
Efficacy: 85.4 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

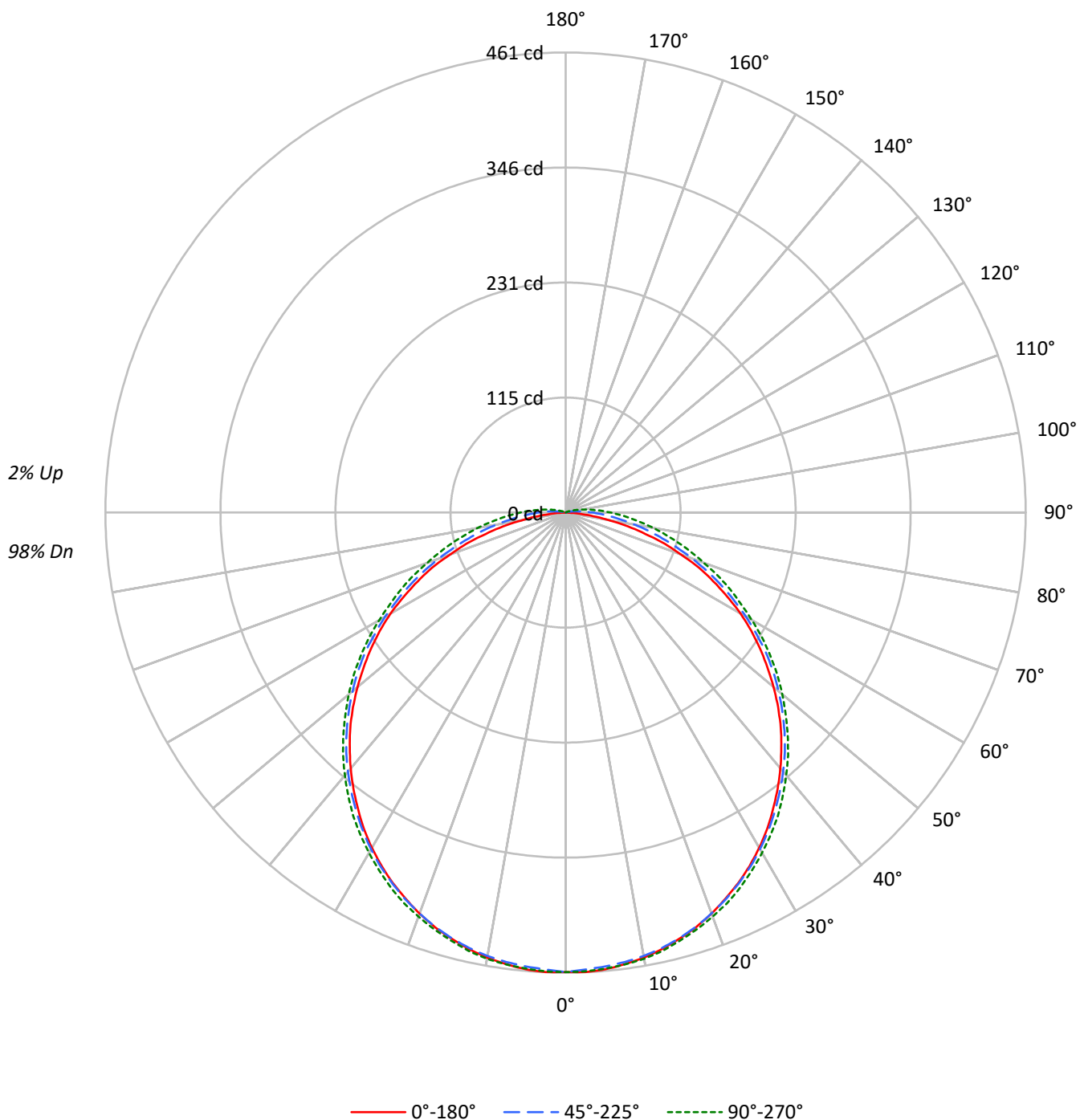
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	3717	3717	3717
5°	3696	3625	3638
10°	3658	3551	3564
15°	3613	3471	3477
20°	3565	3382	3392
25°	3511	3292	3306
30°	3450	3197	3208
35°	3376	3093	3111
40°	3298	2984	2997
45°	3214	2866	2874
50°	3109	2731	2743
55°	2993	2583	2598
60°	2857	2394	2428
65°	2651	2184	2261
70°	2364	1938	2065
75°	1970	1671	1888
80°	1411	1408	1726
85°	678	1141	1570

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3214 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.6	3.1
10°-20°	125.0	9.0
20°-30°	189.6	13.6
30°-40°	229.3	16.5
40°-50°	239.2	17.2
50°-60°	218.7	15.7
60°-70°	170.5	12.3
70°-80°	106.7	7.7
80°-90°	48.4	3.5
90°-100°	16.2	1.2
100°-110°	4.1	0.3
110°-120°	0.6	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°	358.2	25.7
0°-40°	587.4	42.2
0°-60°	1045.4	75.1
0°-90°	1371.0	98.5
90°-120°	20.9	1.5
90°-150°	20.9	1.5
90°-180°	21.0	1.5
0°-180°	1392.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	460	460	460	460	460	
5°	459	458	456	459	459	44
15°	442	443	442	444	444	125
25°	410	410	410	414	414	189
35°	362	364	366	369	371	227
45°	305	308	310	313	315	235
55°	238	241	245	249	250	213
65°	164	166	172	179	182	162
75°	83	88	101	113	117	88
85°	14	26	46	60	65	18
90°	0	10	27	40	45	1
95°	0	3	14	25	29	0
105°	0	0	2	7	9	0
115°	0	0	0	1	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°	460.4	460.4	460.4	460.4	460.4
2.5°	460.9	460.3	458.2	460.3	460.2
5°	459.4	458.5	456.5	458.7	458.7
7.5°	456.4	456.0	454.2	456.7	456.7
10°	452.8	452.7	451.2	453.9	454.0
12.5°	447.8	448.2	446.8	449.4	449.8
15°	441.9	442.7	441.5	444.0	443.9
17.5°	435.5	436.0	435.1	437.9	437.8
20°	427.6	428.2	427.5	430.4	430.8
22.5°	418.8	419.6	419.5	422.5	423.4
25°	409.5	409.8	410.2	413.7	414.4
27.5°	399.2	399.7	400.5	403.6	404.3
30°	387.9	388.8	389.6	392.9	393.8
32.5°	376.0	376.8	377.9	382.1	382.6
35°	362.5	364.1	365.6	369.3	370.9
37.5°	349.0	351.1	352.5	356.4	357.6
40°	334.8	336.9	339.2	343.3	344.0
42.5°	320.0	322.3	325.1	328.7	330.0
45°	305.0	307.7	310.2	313.2	314.7
47.5°	288.8	291.5	294.6	298.0	299.0
50°	272.1	275.2	278.5	281.7	283.5
52.5°	254.9	258.7	262.4	265.9	267.5
55°	238.0	240.8	245.3	248.9	250.5
57.5°	220.4	222.8	226.8	232.7	233.6
60°	202.5	204.7	208.8	213.6	215.5
62.5°	182.8	185.7	190.0	196.1	197.9
65°	163.6	166.4	172.1	179.0	181.8
67.5°	145.0	146.0	153.4	160.5	165.1
70°	123.1	126.8	135.3	144.1	147.6
72.5°	104.2	107.9	117.3	127.6	132.0
75°	82.8	87.9	100.7	112.8	117.0
77.5°	64.0	69.7	85.5	97.7	102.6
80°	44.7	53.5	70.8	84.4	89.8
82.5°	28.1	39.0	57.4	71.7	76.4
85°	14.3	26.5	45.5	60.1	65.4
87.5°	3.8	17.1	35.4	49.4	54.8
90°	0.1	9.9	26.8	40.3	45.1
92.5°	0.1	5.5	20.0	32.0	37.0
95°	0.1	2.6	13.9	25.2	29.1
97.5°	0.1	1.1	9.6	19.0	22.9
100°	0.1	0.5	6.1	13.8	17.1
102.5°	0.2	0.3	3.8	9.9	12.6
105°	0.2	0.3	2.3	6.7	9.0
107.5°	0.2	0.3	1.3	4.6	6.2
110°	0.3	0.3	0.8	2.8	4.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.3	0.4	1.8	2.7
115°	0.3	0.3	0.4	1.2	1.7
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)