

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: P518030

Luminaire Tested: HVL8-4-LD4-1LO-30-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: P518030
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1LO-30-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2133.0 lumens
Efficiency: N/A
Efficacy: 92.7 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

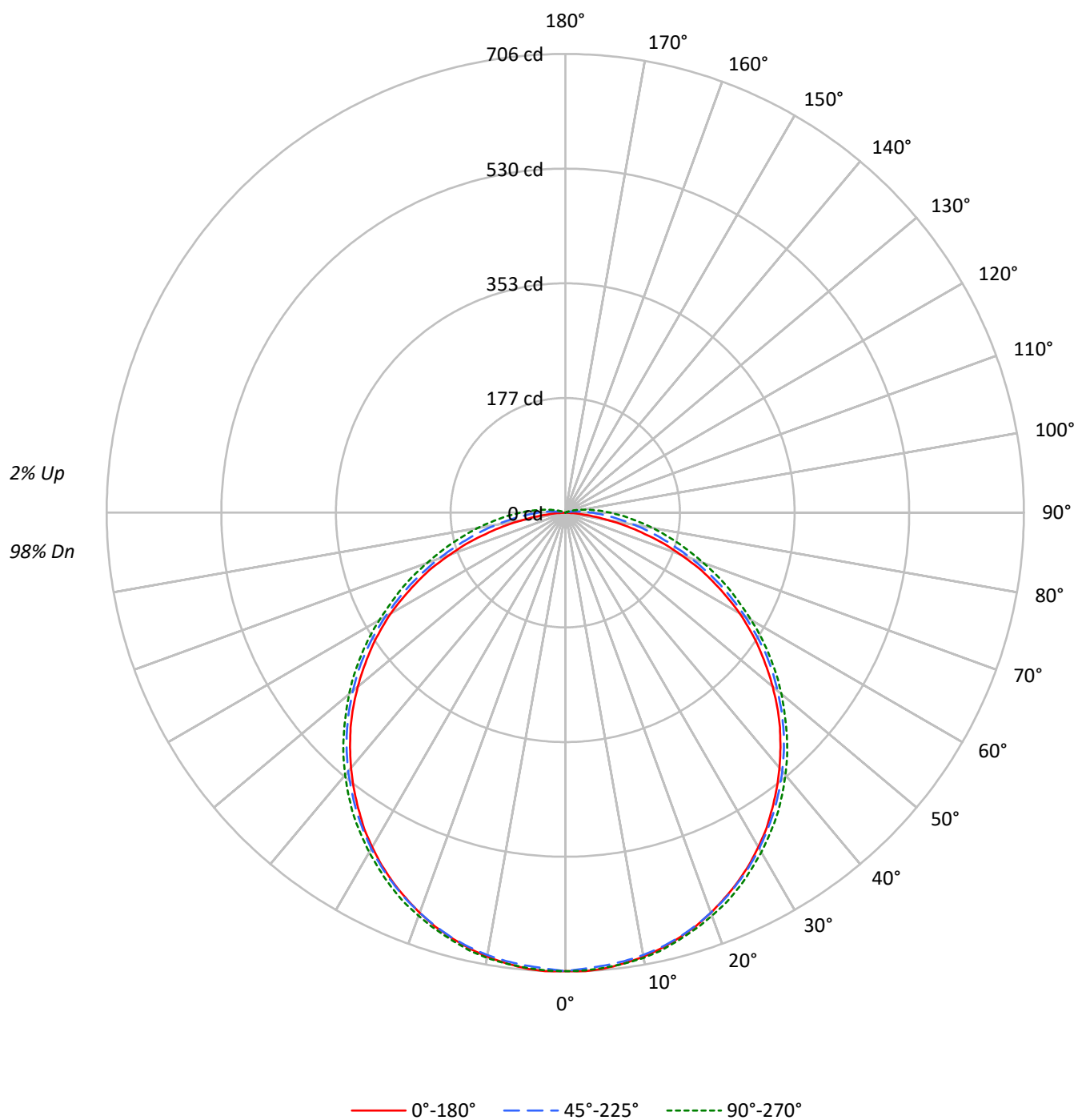
Input Watts (W): 23
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	2848	2848	2848
5°	2842	2784	2787
10°	2823	2734	2731
15°	2799	2679	2664
20°	2772	2617	2599
25°	2741	2554	2533
30°	2705	2486	2458
35°	2660	2412	2383
40°	2612	2334	2296
45°	2561	2249	2202
50°	2494	2151	2102
55°	2422	2043	1990
60°	2336	1903	1861
65°	2197	1747	1732
70°	1997	1562	1582
75°	1713	1360	1446
80°	1288	1161	1322
85°	690	961	1204

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2561 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.8	3.1
10°-20°	191.5	9.0
20°-30°	290.6	13.6
30°-40°	351.3	16.5
40°-50°	366.6	17.2
50°-60°	335.2	15.7
60°-70°	261.3	12.2
70°-80°	163.5	7.7
80°-90°	74.2	3.5
90°-100°	24.9	1.2
100°-110°	6.2	0.3
110°-120°	1.0	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°	548.8	25.7
0°-40°	900.2	42.2
0°-60°	1601.9	75.1
0°-90°	2100.9	98.5
90°-120°	32.1	1.5
90°-150°	32.1	1.5
90°-180°	32.0	1.5
0°-180°	2133.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	706	706	706	706	706	
5°	704	703	700	703	703	67
15°	677	678	676	680	680	191
25°	628	628	629	634	635	289
35°	556	558	560	566	568	348
45°	467	472	475	480	482	360
55°	365	369	376	381	384	326
65°	251	255	264	274	279	248
75°	127	135	154	173	179	135
85°	22	41	70	92	100	28
90°	0	15	41	62	69	1
95°	0	4	21	39	45	0
105°	0	0	4	10	14	0
115°	0	0	1	2	3	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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CATALOG NUMBER: HVL8-4-LD4-1LO-30-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	705.5	705.5	705.5	705.5	705.5
2.5°	706.3	705.3	702.1	705.3	705.1
5°	704.0	702.6	699.5	702.8	702.8
7.5°	699.3	698.8	696.0	699.8	699.8
10°	693.8	693.7	691.3	695.5	695.7
12.5°	686.2	686.8	684.7	688.7	689.2
15°	677.2	678.4	676.5	680.4	680.2
17.5°	667.4	668.0	666.7	671.0	670.9
20°	655.2	656.1	655.1	659.6	660.1
22.5°	641.8	642.9	642.8	647.4	648.8
25°	627.5	628.0	628.6	634.0	635.0
27.5°	611.7	612.5	613.7	618.5	619.5
30°	594.4	595.7	597.0	602.0	603.4
32.5°	576.1	577.4	579.1	585.6	586.2
35°	555.5	558.0	560.3	565.9	568.3
37.5°	534.8	538.0	540.2	546.1	548.0
40°	513.1	516.2	519.7	526.0	527.2
42.5°	490.3	493.9	498.1	503.7	505.7
45°	467.3	471.5	475.3	480.0	482.3
47.5°	442.5	446.7	451.4	456.7	458.2
50°	416.9	421.8	426.7	431.7	434.4
52.5°	390.7	396.5	402.1	407.4	409.9
55°	364.7	369.0	375.9	381.3	383.8
57.5°	337.8	341.4	347.6	356.6	357.9
60°	310.3	313.7	320.0	327.3	330.3
62.5°	280.1	284.5	291.2	300.5	303.2
65°	250.6	254.9	263.8	274.2	278.6
67.5°	222.2	223.7	235.0	246.0	253.0
70°	188.6	194.2	207.4	220.9	226.2
72.5°	159.7	165.3	179.8	195.6	202.2
75°	126.9	134.7	154.3	172.8	179.3
77.5°	98.1	106.8	131.0	149.7	157.2
80°	68.5	82.0	108.4	129.4	137.5
82.5°	43.1	59.7	88.0	109.9	117.1
85°	22.0	40.6	69.7	92.1	100.3
87.5°	5.8	26.3	54.2	75.7	84.0
90°	0.2	15.1	41.1	61.7	69.2
92.5°	0.2	8.5	30.6	49.1	56.7
95°	0.2	4.0	21.3	38.6	44.6
97.5°	0.2	1.7	14.6	29.1	35.1
100°	0.2	0.8	9.3	21.1	26.3
102.5°	0.3	0.5	5.8	15.1	19.3
105°	0.3	0.5	3.5	10.3	13.8
107.5°	0.3	0.5	2.0	7.0	9.5
110°	0.5	0.5	1.2	4.3	6.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	0.5	0.7	2.8	4.2
115°	0.5	0.5	0.7	1.8	2.7
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)