

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: P518029

Luminaire Tested: HVL8-4-LD4-1LO-30-UNV-O-EDD-90

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: P518029
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-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2461.0 lumens
Efficiency: N/A
Efficacy: 107.0 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

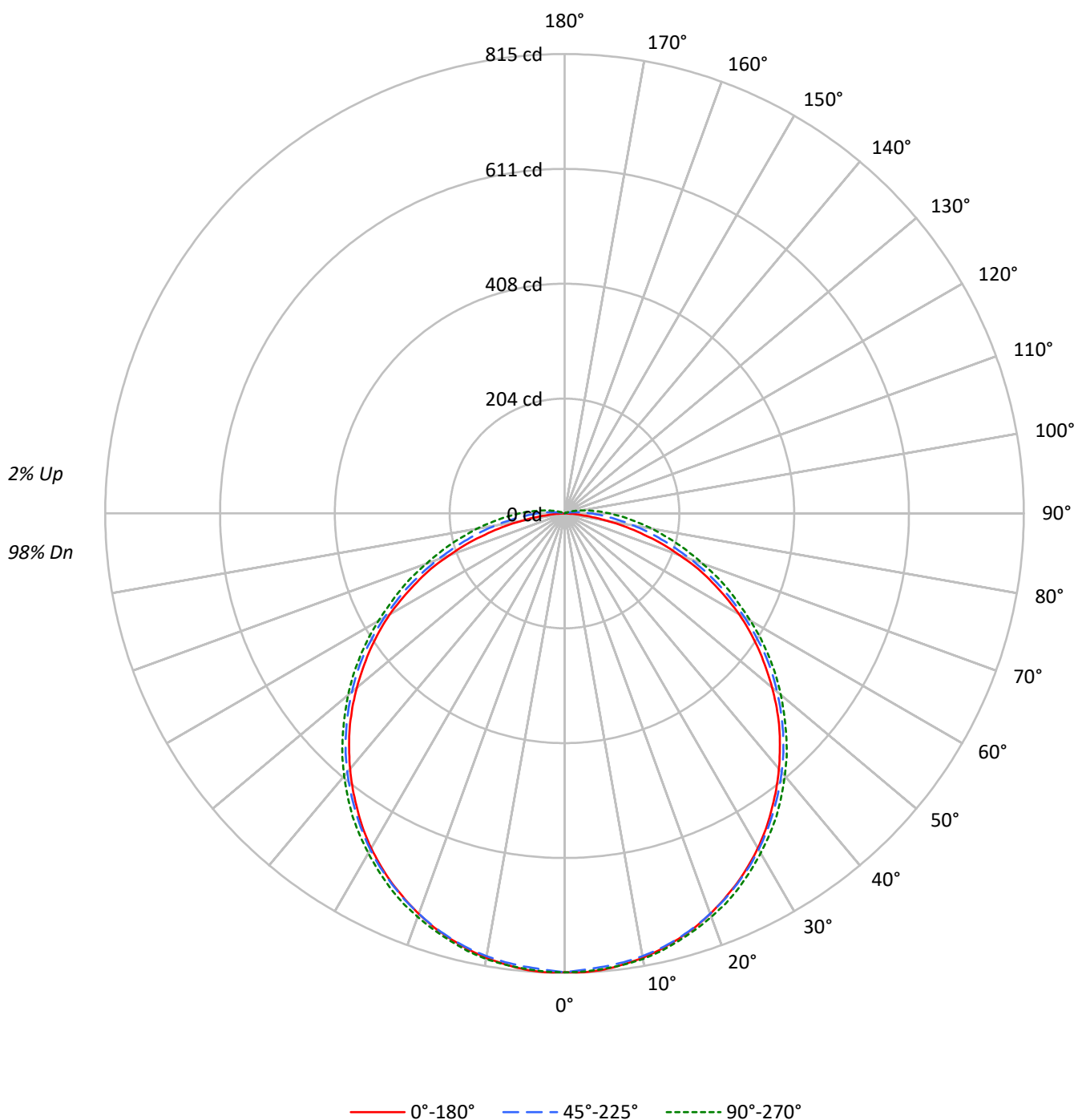
Input Watts (W): 23
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	3286	3286	3286
5°	3279	3212	3215
10°	3257	3154	3151
15°	3229	3091	3074
20°	3199	3020	2999
25°	3163	2947	2922
30°	3121	2869	2835
35°	3069	2783	2750
40°	3013	2693	2649
45°	2955	2595	2541
50°	2878	2482	2425
55°	2795	2357	2297
60°	2696	2196	2147
65°	2536	2015	1998
70°	2304	1803	1826
75°	1976	1569	1668
80°	1487	1340	1526
85°	794	1109	1389

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2955 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.0	3.1
10°-20°	220.9	9.0
20°-30°	335.2	13.6
30°-40°	405.4	16.5
40°-50°	423.0	17.2
50°-60°	386.7	15.7
60°-70°	301.5	12.2
70°-80°	188.6	7.7
80°-90°	85.7	3.5
90°-100°	28.7	1.2
100°-110°	7.2	0.3
110°-120°	1.1	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°	633.2	25.7
0°-40°	1038.6	42.2
0°-60°	1848.3	75.1
0°-90°	2424.0	98.5
90°-120°	37.1	1.5
90°-150°	37.1	1.5
90°-180°	37.0	1.5
0°-180°	2461.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	814	814	814	814	814	
5°	812	811	807	811	811	77
15°	781	783	781	785	785	221
25°	724	724	725	731	733	334
35°	641	644	646	653	656	401
45°	539	544	548	554	556	415
55°	421	426	434	440	443	376
65°	289	294	304	316	321	286
75°	146	155	178	199	207	156
85°	25	47	80	106	116	32
90°	0	18	47	71	80	1
95°	0	5	25	44	51	0
105°	0	1	4	12	16	0
115°	1	1	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-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	814.0	814.0	814.0	814.0	814.0
2.5°	814.9	813.8	810.1	813.8	813.6
5°	812.2	810.7	807.0	810.9	810.9
7.5°	806.9	806.3	803.0	807.4	807.4
10°	800.5	800.3	797.6	802.4	802.6
12.5°	791.7	792.5	790.0	794.6	795.1
15°	781.3	782.7	780.6	785.0	784.8
17.5°	770.0	770.8	769.2	774.2	774.0
20°	756.0	757.0	755.8	761.0	761.6
22.5°	740.5	741.8	741.6	747.0	748.5
25°	724.0	724.5	725.3	731.4	732.6
27.5°	705.7	706.7	708.0	713.6	714.7
30°	685.8	687.3	688.8	694.6	696.1
32.5°	664.7	666.2	668.1	675.6	676.4
35°	640.9	643.8	646.4	653.0	655.7
37.5°	617.1	620.7	623.2	630.1	632.2
40°	591.9	595.6	599.6	606.9	608.3
42.5°	565.7	569.9	574.7	581.2	583.5
45°	539.2	544.0	548.4	553.8	556.4
47.5°	510.6	515.4	520.8	526.9	528.6
50°	481.0	486.6	492.4	498.1	501.2
52.5°	450.7	457.4	464.0	470.1	473.0
55°	420.8	425.8	433.6	440.0	442.9
57.5°	389.7	393.9	401.0	411.4	412.9
60°	358.0	361.9	369.2	377.6	381.1
62.5°	323.1	328.3	336.0	346.7	349.8
65°	289.2	294.2	304.3	316.4	321.4
67.5°	256.4	258.1	271.1	283.8	291.8
70°	217.6	224.1	239.3	254.8	261.0
72.5°	184.2	190.7	207.4	225.6	233.3
75°	146.4	155.4	178.1	199.4	206.8
77.5°	113.2	123.2	151.2	172.7	181.3
80°	79.1	94.6	125.1	149.3	158.7
82.5°	49.7	68.9	101.5	126.8	135.1
85°	25.3	46.8	80.4	106.3	115.7
87.5°	6.7	30.3	62.6	87.3	96.9
90°	0.2	17.5	47.4	71.2	79.8
92.5°	0.2	9.8	35.3	56.6	65.4
95°	0.2	4.6	24.6	44.5	51.4
97.5°	0.2	1.9	16.9	33.6	40.5
100°	0.2	1.0	10.7	24.4	30.3
102.5°	0.4	0.6	6.7	17.5	22.3
105°	0.4	0.6	4.0	11.9	15.9
107.5°	0.4	0.6	2.3	8.1	10.9
110°	0.6	0.6	1.3	5.0	7.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	0.6	0.8	3.3	4.8
115°	0.6	0.6	0.8	2.1	3.1
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)