

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: P517873

Luminaire Tested: HVL8-2-LD4-1HI-35-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: P517873
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-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2141.0 lumens
Efficiency: N/A
Efficacy: 99.6 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

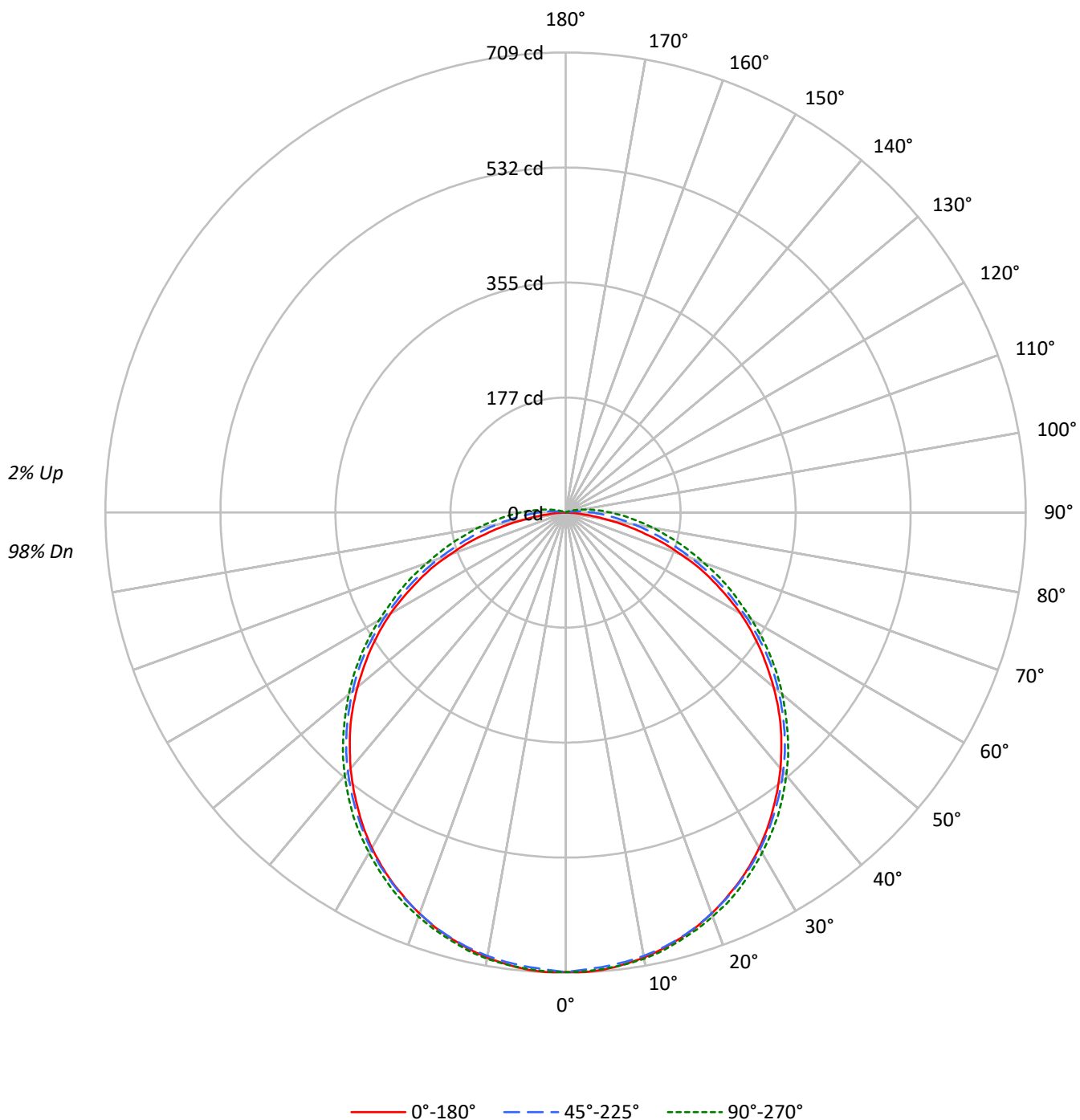
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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				0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		0
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		98
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		81
2	98	89	82	76	95	87	80	75	83	77	73		79	75	71		67
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		56
4	81	69	60	53	79	67	59	52	65	57	52		62	56	51		47
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		41
6	69	55	46	40	67	54	46	39	52	45	39		50	44	38		36
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		32
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		28
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		25
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5716	5716	5716
5°	5685	5575	5594
10°	5626	5461	5483
15°	5557	5338	5348
20°	5484	5202	5217
25°	5400	5064	5084
30°	5306	4917	4933
35°	5191	4757	4784
40°	5073	4590	4610
45°	4944	4408	4421
50°	4781	4199	4219
55°	4605	3973	3996
60°	4395	3682	3735
65°	4077	3358	3477
70°	3636	2982	3176
75°	3031	2570	2903
80°	2172	2164	2655
85°	1044	1752	2418

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4944 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.0	3.1
10°-20°	192.2	9.0
20°-30°	291.6	13.6
30°-40°	352.7	16.5
40°-50°	368.0	17.2
50°-60°	336.4	15.7
60°-70°	262.3	12.2
70°-80°	164.1	7.7
80°-90°	74.5	3.5
90°-100°	25.0	1.2
100°-110°	6.3	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°	550.9	25.7
0°-40°	903.5	42.2
0°-60°	1607.9	75.1
0°-90°	2108.8	98.5
90°-120°	32.2	1.5
90°-150°	32.2	1.5
90°-180°	32.0	1.5
0°-180°	2141.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	708	708	708	708	708	
5°	707	705	702	705	705	67
15°	680	681	679	683	683	192
25°	630	630	631	636	637	290
35°	558	560	562	568	570	349
45°	469	473	477	482	484	361
55°	366	370	377	383	385	327
65°	252	256	265	275	280	249
75°	127	135	155	173	180	136
85°	22	41	70	92	101	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	708.1	708.1	708.1	708.1	708.1
2.5°	708.9	707.9	704.8	707.9	707.8
5°	706.6	705.3	702.1	705.4	705.4
7.5°	701.9	701.4	698.6	702.4	702.4
10°	696.4	696.3	693.9	698.1	698.3
12.5°	688.7	689.4	687.2	691.3	691.8
15°	679.7	680.9	679.1	682.9	682.7
17.5°	669.9	670.6	669.2	673.6	673.4
20°	657.7	658.5	657.5	662.0	662.5
22.5°	644.2	645.3	645.2	649.9	651.2
25°	629.8	630.3	631.0	636.3	637.3
27.5°	614.0	614.8	616.0	620.8	621.8
30°	596.6	597.9	599.3	604.3	605.6
32.5°	578.2	579.6	581.2	587.8	588.4
35°	557.5	560.0	562.4	568.1	570.4
37.5°	536.8	540.0	542.2	548.2	550.0
40°	515.0	518.1	521.7	528.0	529.2
42.5°	492.1	495.8	500.0	505.6	507.6
45°	469.1	473.2	477.1	481.8	484.1
47.5°	444.2	448.4	453.0	458.4	459.9
50°	418.5	423.3	428.3	433.3	436.0
52.5°	392.1	398.0	403.6	409.0	411.5
55°	366.1	370.4	377.3	382.8	385.3
57.5°	339.0	342.7	348.9	357.9	359.2
60°	311.5	314.8	321.2	328.5	331.5
62.5°	281.1	285.6	292.3	301.6	304.3
65°	251.6	255.9	264.7	275.3	279.6
67.5°	223.0	224.5	235.9	246.9	253.9
70°	189.3	195.0	208.2	221.7	227.0
72.5°	160.3	165.9	180.5	196.3	203.0
75°	127.4	135.2	154.9	173.4	179.9
77.5°	98.5	107.2	131.5	150.2	157.7
80°	68.8	82.3	108.8	129.9	138.1
82.5°	43.2	59.9	88.3	110.3	117.5
85°	22.0	40.7	69.9	92.5	100.7
87.5°	5.8	26.4	54.4	76.0	84.3
90°	0.2	15.2	41.2	61.9	69.4
92.5°	0.2	8.5	30.7	49.2	56.9
95°	0.2	4.0	21.4	38.7	44.7
97.5°	0.2	1.7	14.7	29.2	35.2
100°	0.2	0.8	9.3	21.2	26.4
102.5°	0.3	0.5	5.8	15.2	19.4
105°	0.3	0.5	3.5	10.3	13.9
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)