

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: P518045

Luminaire Tested: HVL8-4-LD4-1STD-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: P518045
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1STD-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: 3171.0 lumens
Efficiency: N/A
Efficacy: 97.3 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

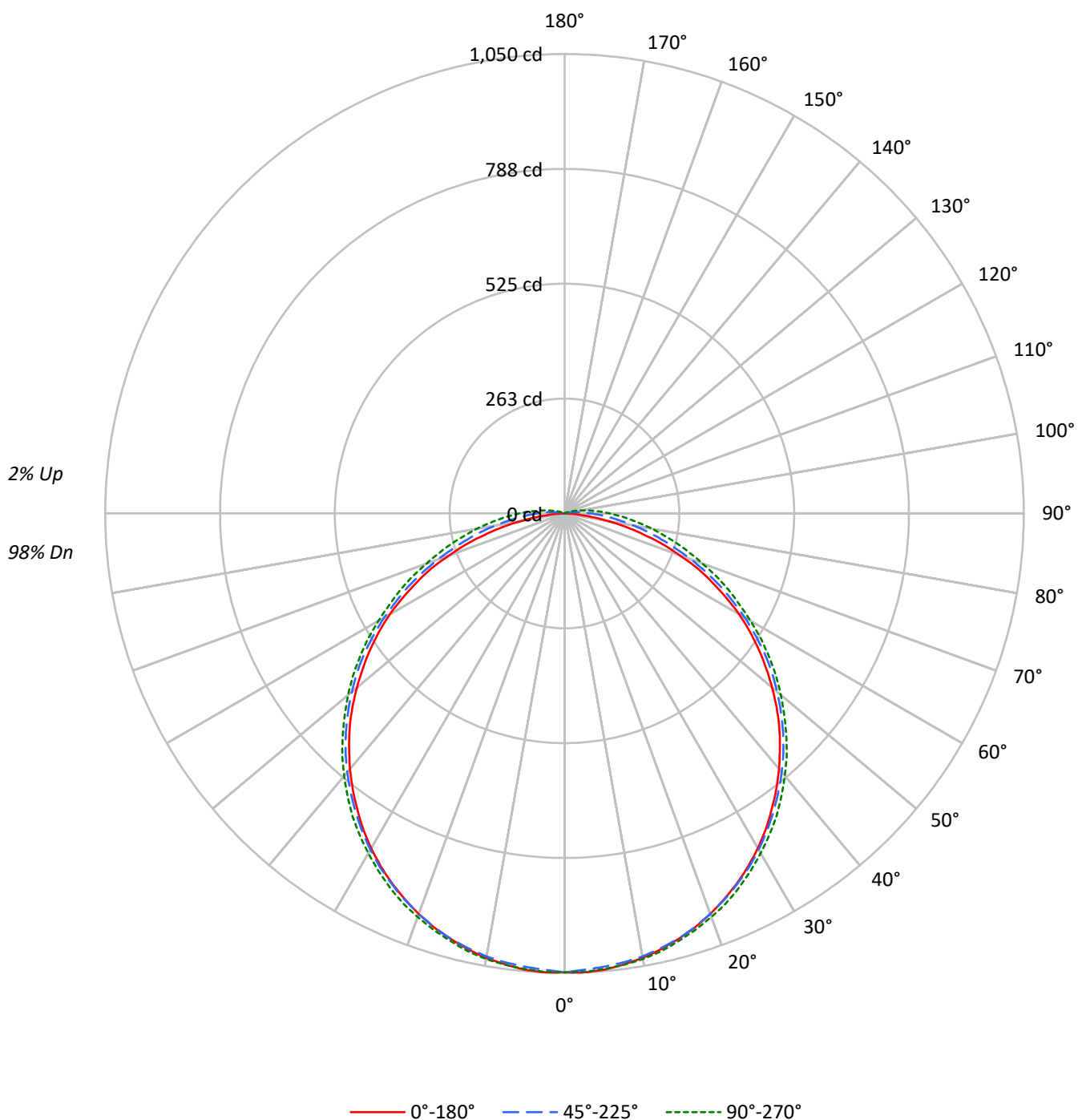
Input Watts (W): 32.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		87
2	98	89	82	76	95	87	80	75	83	77	73		79	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	52		62	56	51		60
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		54
6	69	55	46	40	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4233	4233	4233
5°	4225	4139	4143
10°	4197	4065	4060
15°	4160	3983	3960
20°	4122	3891	3864
25°	4075	3797	3765
30°	4022	3697	3653
35°	3954	3586	3543
40°	3883	3470	3413
45°	3807	3344	3274
50°	3708	3198	3124
55°	3601	3038	2959
60°	3473	2829	2766
65°	3267	2596	2575
70°	2969	2322	2352
75°	2545	2021	2150
80°	1916	1727	1966
85°	1023	1429	1790

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3807 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	99.2	3.1
10°-20°	284.7	9.0
20°-30°	432.0	13.6
30°-40°	522.3	16.5
40°-50°	545.0	17.2
50°-60°	498.3	15.7
60°-70°	388.4	12.2
70°-80°	243.0	7.7
80°-90°	110.4	3.5
90°-100°	37.0	1.2
100°-110°	9.3	0.3
110°-120°	1.5	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°	815.9	25.7
0°-40°	1338.2	42.2
0°-60°	2381.5	75.1
0°-90°	3123.3	98.5
90°-120°	47.7	1.5
90°-150°	47.7	1.5
90°-180°	48.0	1.5
0°-180°	3171.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1049	1049	1049	1049	1049	
5°	1047	1045	1040	1045	1045	99
15°	1007	1008	1006	1011	1011	284
25°	933	934	935	942	944	430
35°	826	830	833	841	845	517
45°	695	701	707	714	717	535
55°	542	549	559	567	571	484
65°	373	379	392	408	414	369
75°	189	200	229	257	266	201
85°	33	60	104	137	149	41
90°	0	22	61	92	103	1
95°	0	6	32	57	66	0
105°	0	1	5	15	20	1
115°	1	1	1	3	4	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°	1048.8	1048.8	1048.8	1048.8	1048.8
2.5°	1050.0	1048.5	1043.8	1048.5	1048.3
5°	1046.6	1044.6	1039.9	1044.8	1044.8
7.5°	1039.6	1038.9	1034.7	1040.4	1040.4
10°	1031.5	1031.2	1027.8	1033.9	1034.2
12.5°	1020.1	1021.1	1017.9	1023.8	1024.5
15°	1006.7	1008.5	1005.8	1011.4	1011.2
17.5°	992.2	993.1	991.2	997.6	997.4
20°	974.1	975.3	973.9	980.5	981.3
22.5°	954.1	955.8	955.6	962.5	964.5
25°	932.8	933.6	934.6	942.5	943.9
27.5°	909.3	910.6	912.3	919.5	921.0
30°	883.6	885.6	887.6	895.0	897.0
32.5°	856.4	858.4	860.9	870.5	871.5
35°	825.8	829.5	832.9	841.3	844.8
37.5°	795.1	799.8	803.0	811.9	814.6
40°	762.7	767.4	772.6	782.0	783.7
42.5°	728.9	734.3	740.5	748.9	751.8
45°	694.7	700.9	706.6	713.5	717.0
47.5°	657.9	664.1	671.0	678.9	681.1
50°	619.8	627.0	634.4	641.8	645.8
52.5°	580.8	589.4	597.8	605.7	609.4
55°	542.2	548.6	558.8	566.9	570.6
57.5°	502.1	507.6	516.7	530.1	532.1
60°	461.3	466.3	475.7	486.6	491.0
62.5°	416.3	423.0	432.9	446.8	450.7
65°	372.6	379.0	392.1	407.7	414.1
67.5°	330.3	332.5	349.3	365.7	376.0
70°	280.4	288.8	308.3	328.3	336.2
72.5°	237.3	245.8	267.3	290.7	300.6
75°	188.6	200.3	229.4	256.9	266.5
77.5°	145.9	158.7	194.8	222.5	233.6
80°	101.9	121.9	161.2	192.3	204.5
82.5°	64.0	88.8	130.8	163.4	174.1
85°	32.6	60.3	103.6	137.0	149.1
87.5°	8.7	39.1	80.6	112.5	124.9
90°	0.2	22.5	61.1	91.7	102.9
92.5°	0.2	12.6	45.5	72.9	84.3
95°	0.2	5.9	31.6	57.4	66.3
97.5°	0.2	2.5	21.8	43.3	52.2
100°	0.2	1.2	13.8	31.4	39.1
102.5°	0.5	0.7	8.7	22.5	28.7
105°	0.5	0.7	5.2	15.3	20.5
107.5°	0.5	0.7	3.0	10.4	14.1
110°	0.7	0.7	1.7	6.4	9.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	0.7	1.0	4.2	6.2
115°	0.7	0.7	1.0	2.7	4.0
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)