

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: P518018

Luminaire Tested: HVL8-4-LD4-1HI-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: P518018
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1HI-35-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

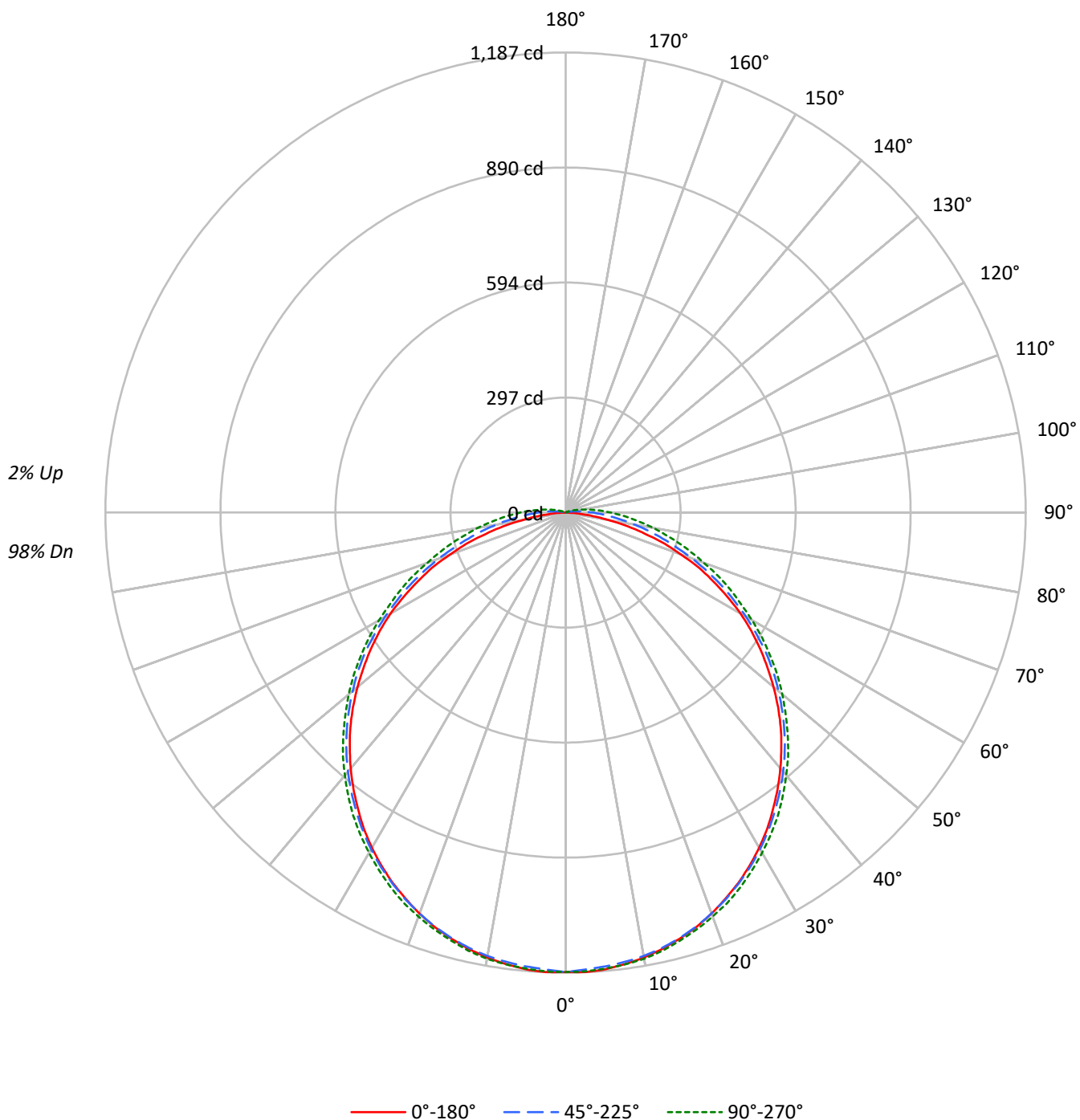
Lumens per Lamp: N/A
Luminaire Lumens: 3584.0 lumens
Efficiency: N/A
Efficacy: 83.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

Input Watts (W): 43
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°	4785	4785	4785
5°	4776	4678	4682
10°	4743	4594	4589
15°	4703	4501	4476
20°	4659	4398	4367
25°	4606	4292	4256
30°	4545	4178	4129
35°	4469	4053	4004
40°	4389	3922	3858
45°	4303	3779	3701
50°	4191	3614	3531
55°	4070	3433	3344
60°	3926	3198	3126
65°	3692	2935	2910
70°	3356	2625	2658
75°	2877	2285	2430
80°	2164	1952	2222
85°	1158	1615	2023

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4303 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	112.2	3.1
10°-20°	321.8	9.0
20°-30°	488.2	13.6
30°-40°	590.3	16.5
40°-50°	616.0	17.2
50°-60°	563.2	15.7
60°-70°	439.0	12.2
70°-80°	274.6	7.7
80°-90°	124.7	3.5
90°-100°	41.8	1.2
100°-110°	10.5	0.3
110°-120°	1.7	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°	922.1	25.7
0°-40°	1512.5	42.2
0°-60°	2691.6	75.1
0°-90°	3530.0	98.5
90°-120°	54.0	1.5
90°-150°	54.0	1.5
90°-180°	54.0	1.5
0°-180°	3584.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1185	1185	1185	1185	1185	
5°	1183	1181	1175	1181	1181	112
15°	1138	1140	1137	1143	1143	321
25°	1054	1055	1056	1065	1067	486
35°	933	938	941	951	955	584
45°	785	792	799	806	810	605
55°	613	620	632	641	645	547
65°	421	428	443	461	468	417
75°	213	226	259	290	301	227
85°	37	68	117	155	168	47
90°	0	25	69	104	116	1
95°	0	7	36	65	75	0
105°	1	1	6	17	23	1
115°	1	1	1	3	4	1
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

TEST NUMBER: P518018

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1185.4	1185.4	1185.4	1185.4	1185.4
2.5°	1186.8	1185.1	1179.8	1185.1	1184.8
5°	1182.9	1180.6	1175.3	1180.9	1180.9
7.5°	1175.0	1174.2	1169.4	1175.9	1175.9
10°	1165.8	1165.5	1161.6	1168.6	1168.9
12.5°	1153.0	1154.1	1150.4	1157.1	1158.0
15°	1137.9	1139.8	1136.7	1143.2	1142.9
17.5°	1121.4	1122.5	1120.3	1127.5	1127.2
20°	1101.0	1102.4	1100.7	1108.2	1109.1
22.5°	1078.3	1080.3	1080.0	1087.8	1090.1
25°	1054.3	1055.2	1056.3	1065.2	1066.9
27.5°	1027.8	1029.2	1031.1	1039.2	1040.9
30°	998.7	1000.9	1003.2	1011.6	1013.8
32.5°	968.0	970.2	973.0	983.9	985.0
35°	933.3	937.5	941.4	950.9	954.8
37.5°	898.7	904.0	907.6	917.7	920.7
40°	862.1	867.4	873.2	883.9	885.8
42.5°	823.8	829.9	836.9	846.4	849.8
45°	785.2	792.2	798.6	806.5	810.4
47.5°	743.6	750.6	758.4	767.3	769.8
50°	700.5	708.7	717.0	725.4	729.9
52.5°	656.4	666.2	675.7	684.6	688.8
55°	612.8	620.1	631.5	640.7	644.9
57.5°	567.5	573.7	584.0	599.1	601.3
60°	521.4	527.0	537.6	549.9	555.0
62.5°	470.6	478.1	489.3	504.9	509.4
65°	421.1	428.4	443.2	460.8	468.1
67.5°	373.3	375.8	394.8	413.3	425.0
70°	316.9	326.4	348.5	371.1	380.0
72.5°	268.3	277.8	302.1	328.6	339.8
75°	213.2	226.3	259.3	290.3	301.2
77.5°	164.9	179.4	220.2	251.5	264.1
80°	115.1	137.8	182.2	217.4	231.1
82.5°	72.4	100.3	147.8	184.7	196.7
85°	36.9	68.2	117.1	154.8	168.5
87.5°	9.8	44.2	91.1	127.1	141.1
90°	0.3	25.4	69.0	103.7	116.2
92.5°	0.3	14.3	51.4	82.4	95.3
95°	0.3	6.7	35.8	64.8	74.9
97.5°	0.3	2.8	24.6	48.9	59.0
100°	0.3	1.4	15.6	35.5	44.2
102.5°	0.6	0.8	9.8	25.4	32.4
105°	0.6	0.8	5.9	17.3	23.2
107.5°	0.6	0.8	3.4	11.7	15.9
110°	0.8	0.8	2.0	7.3	10.6

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CATALOG NUMBER: HVL8-4-LD4-1HI-35-UNV-O-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	0.8	1.1	4.8	7.0
115°	0.8	0.8	1.1	3.1	4.5
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)