

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: FAIL-SAFE

Report Number: 2659.2

Luminaire Tested: **HVH-50S**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: 2659.2
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: HVH-50S
Description: FAIL-SAFE WALL MOUNT LUMINAIRE
Light Source: LU 50/M 4000 LUMENS
Ballast/Driver: -

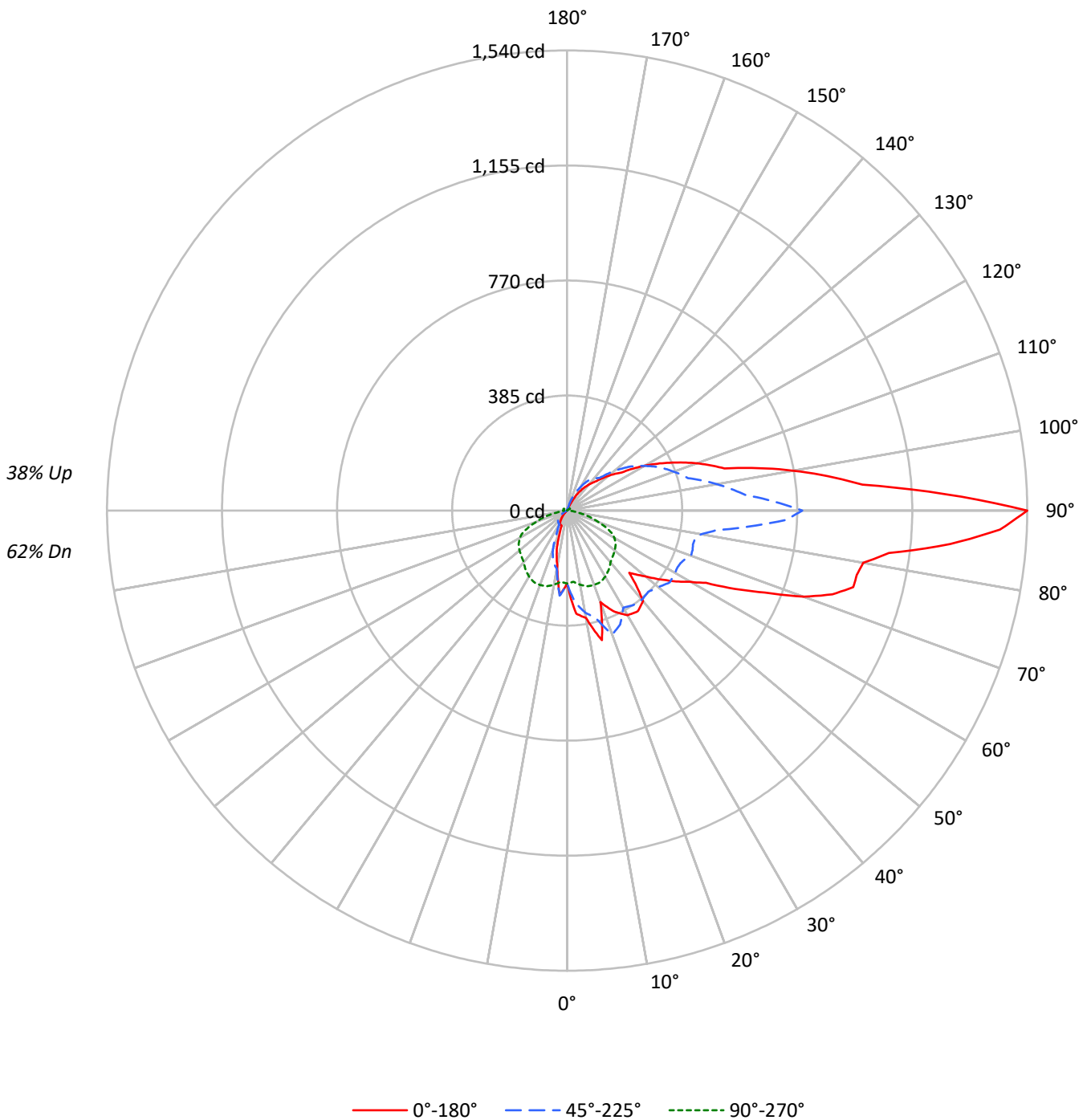
Summary

Lumens per Lamp: 4000 (1 lamp)
Luminaire Lumens: 2523.5 lumens
Efficiency: 63.1%
Efficacy: 50.5 lumens/watt
Spacing Criteria (0/90/45): 1.41 / 1.49 / 1.63
Luminous Opening: Rectangular (W 0.8' x L: 0.5' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 50
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: 25 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20										
RC	80									70									50									30									10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0														
RCR																																						
0	70	70	70	70	65	65	65	65	57	57	57	49	49	49	42	42	42	39																				
1	60	55	51	48	55	51	48	44	44	41	39	37	35	33	31	29	28	25																				
2	53	46	41	36	49	43	38	34	37	33	30	31	28	25	26	23	21	18																				
3	48	40	34	29	44	37	32	27	32	27	24	27	23	20	22	19	17	14																				
4	43	35	29	24	40	32	27	22	28	23	20	23	20	17	19	16	14	12																				
5	40	31	25	20	37	29	23	19	25	20	16	21	17	14	17	14	12	10																				
6	36	28	22	17	34	26	20	16	22	17	14	19	15	12	15	12	10	8																				
7	34	25	19	15	31	23	18	14	20	15	12	17	13	11	14	11	9	7																				
8	31	22	17	13	29	21	16	12	18	14	11	15	12	9	13	10	8	6																				
9	29	20	15	12	27	19	14	11	17	12	10	14	11	8	12	9	7	6																				
10	27	19	14	10	25	18	13	10	15	11	9	13	10	7	11	8	6	5																				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6566	6566	6566
5°	9346	6456	7645
10°	9974	6886	5164
15°	12509	7299	3733
20°	9336	7589	1546
25°	11075	7839	1574
30°	12553	7924	1460
35°	13535	7950	1150
40°	13876	7939	773
45°	11189	8220	495
50°	14318	8708	251
55°	19095	9289	94
60°	25672	9849	0
65°	39478	9742	0
70°	66326	8655	0
75°	103036	7382	0
80°	155897	4959	0
85°	397368	4631	0



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	26.3	1.0	0.7	0°	244	244	244	244	244	
10°-20°	77.7	3.1	1.9	5°	346	308	239	286	283	32
20°-30°	115.7	4.6	2.9	15°	449	372	262	179	134	112
30°-40°	150.2	6.0	3.8	25°	373	420	264	80	53	172
40°-50°	163.7	6.5	4.1	35°	412	386	242	51	35	255
50°-60°	184.8	7.3	4.6	45°	294	384	216	42	13	256
60°-70°	227.2	9.0	5.7	55°	407	419	198	24	2	367
70°-80°	271.8	10.8	6.8	65°	620	418	153	7	0	628
80°-90°	339.8	13.5	8.5	75°	991	436	71	0	0	1016
90°-100°	340.8	13.5	8.5	85°	1287	611	15	0	0	981
100°-110°	246.0	9.7	6.1	90°	1540	787	11	0	0	794
110°-120°	169.1	6.7	4.2	95°	992	599	12	0	0	831
120°-130°	108.0	4.3	2.7	105°	545	419	13	0	0	651
130°-140°	62.4	2.5	1.6	115°	379	342	13	0	0	378
140°-150°	31.7	1.3	0.8	125°	222	256	10	0	0	216
150°-160°	12.1	0.5	0.3	135°	140	155	2	0	0	114
160°-170°	2.3	0.1	0.1	145°	87	123	0	0	0	52
170°-180°	0.1	0.0	0.0	155°	19	63	0	0	0	14
0°-30°	219.7	8.7	5.5	165°	0	7	0	0	0	1
0°-40°	369.8	14.7	9.2	175°	0	0	0	0	0	0
0°-60°	718.4	28.5	18.0	180°	0	0	0	0	0	
0°-90°	1557.2	61.7	38.9							
90°-120°	756.0	30.0	18.9							
90°-150°	958.1	38.0	24.0							
90°-180°	973.0	38.6	24.3							
0°-180°	2523.5	100.0	63.1							



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	244	244	244	244	244	244	244	244	244	244	244
5°	346	331	331	327	319	308	290	271	251	245	239
10°	365	355	352	353	349	346	344	332	300	260	252
15°	449	435	427	409	389	372	365	357	337	276	262
20°	326	325	328	376	450	441	409	377	349	288	265
25°	373	361	362	355	350	420	459	400	361	297	264
30°	404	395	394	393	384	375	430	421	372	303	255
35°	412	405	408	416	411	386	370	442	372	299	242
40°	395	401	419	423	415	389	359	408	358	292	226
45°	294	297	326	407	412	384	343	338	344	282	216
50°	342	334	343	355	420	398	343	312	339	271	208
55°	407	400	398	388	392	419	352	309	335	265	198
60°	477	470	460	437	409	417	354	300	328	257	183
62.5°	524	529	505	487	434	415	349	291	318	249	172
65°	620	602	560	552	459	418	343	281	302	235	153
67.5°	716	708	661	633	506	426	334	269	283	213	133
70°	843	821	762	719	542	441	330	255	254	188	110
72.5°	931	926	854	775	582	440	321	240	227	165	92
75°	991	977	905	775	576	436	310	223	204	142	71
77.5°	993	998	915	747	588	438	302	207	182	114	51
80°	1006	1011	923	754	626	455	302	196	160	91	32
82.5°	1086	1072	975	819	720	503	310	189	148	70	22
85°	1287	1241	1117	952	848	611	357	197	137	58	15
87.5°	1450	1430	1264	1100	1001	730	416	204	133	47	13
90°	1540	1543	1357	1175	1075	787	436	199	132	47	11
95°	992	1304	1133	963	877	599	308	166	131	47	12
105°	545	994	900	767	605	419	239	152	134	48	13
115°	379	578	550	541	444	342	222	162	127	49	13
125°	222	381	375	367	336	256	189	151	101	41	10
135°	140	231	234	226	186	155	130	117	78	33	2
145°	87	139	138	134	128	123	108	79	50	18	0
155°	19	88	85	85	77	63	44	27	12	0	0
165°	0	16	14	13	11	7	3	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	12	0	0



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	244	244	244	244	244	244	244	244	244	244
5°	239	246	265	279	286	282	276	260	251	283
10°	252	280	288	246	198	192	188	182	179	189
15°	262	295	229	197	179	157	139	124	122	134
20°	265	280	204	175	140	97	61	48	48	54
25°	264	233	192	146	80	50	49	47	48	53
30°	255	199	168	103	52	51	48	42	40	47
35°	242	184	145	58	51	47	40	31	28	35
40°	226	171	119	49	47	39	28	18	15	22
45°	216	157	93	45	42	29	16	8	5	13
50°	208	142	71	42	33	18	7	2	2	6
55°	198	129	53	37	24	10	2	0	1	2
60°	190	114	42	29	15	4	0	0	0	0
62.5°	183	105	36	26	10	2	1	0	0	0
65°	172	96	31	22	7	0	0	0	0	0
67.5°	153	84	27	17	4	20	0	0	0	0
70°	133	71	22	13	2	0	0	0	0	0
72.5°	110	48	19	8	0	0	0	0	0	0
75°	92	33	14	5	0	0	0	0	0	0
77.5°	71	25	11	1	0	0	0	0	0	0
80°	51	19	8	0	0	0	0	0	0	0
82.5°	32	13	5	0	0	0	0	0	0	0
85°	22	10	4	0	0	0	0	0	0	0
87.5°	15	8	3	0	0	0	0	0	0	0
90°	13	6	2	0	0	0	0	0	0	0
95°	11	4	2	0	0	0	0	0	0	0
105°	12	3	2	0	0	0	0	0	0	0
115°	13	3	2	0	0	0	0	0	0	0
125°	13	3	0	0	0	0	0	0	0	0
135°	10	0	0	0	0	0	0	0	0	0
145°	2	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0

(END OF REPORT)