

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: 240p102

Luminaire Tested: **HDF-254-S-UNV-EBT1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: 240p102
Test Lab: METALUX RESEARCH LABORATORIES
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: HDF-254-S-UNV-EBT1
Description: HD PRO 2 LAMP T5 HO LAMP W/ SPECULAR REFLECTOR
Light Source: TWO - F54T5 / 835 - 4450 LUMENS - 54 WATTS
Ballast/Driver: -

Summary

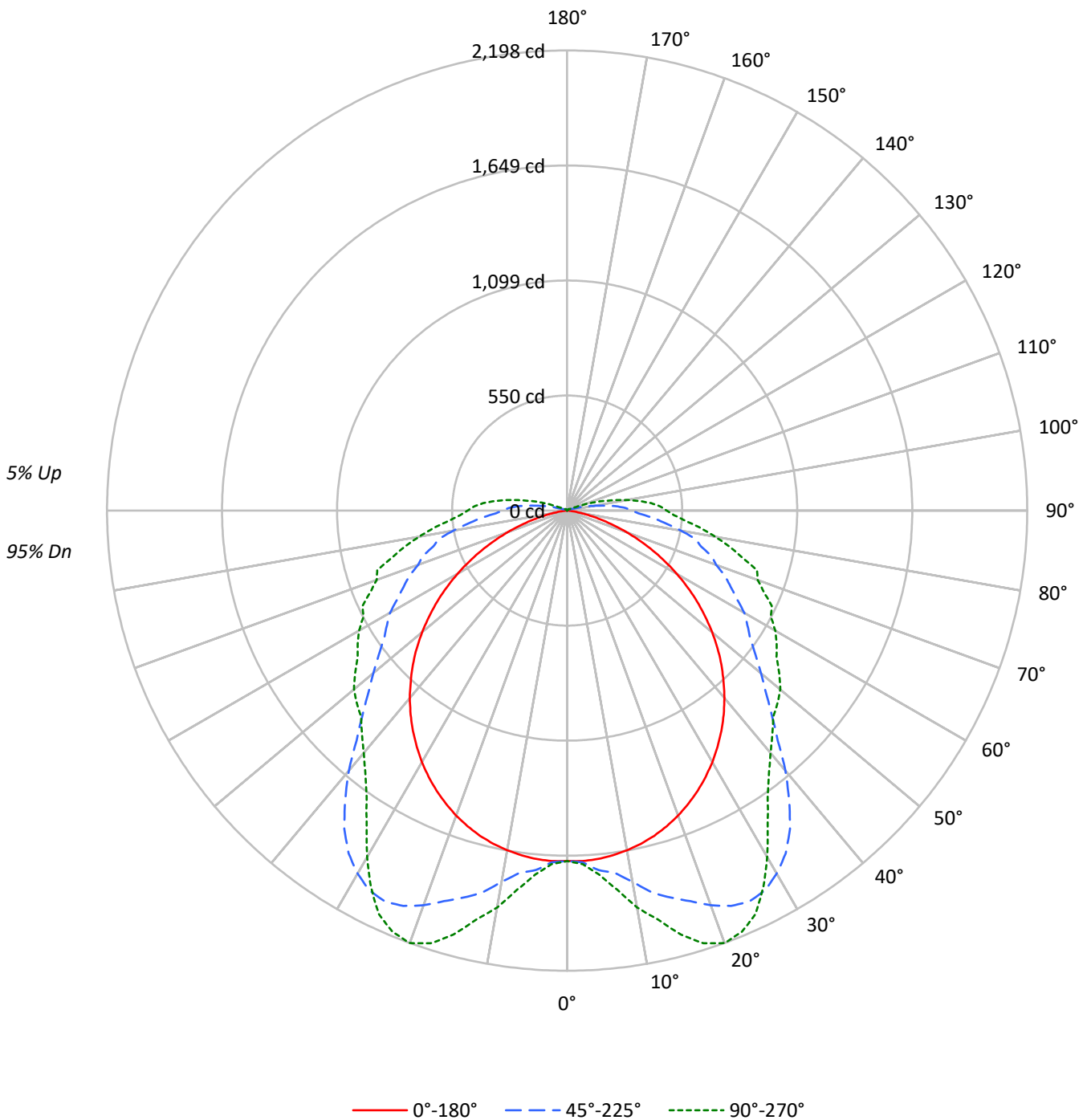
Lumens per Lamp: 4450 (2 lamps)
Luminaire Lumens: 6878.8 lumens
Efficiency: 77.3%
Efficacy: 69.5 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.48 / 1.51
Luminous Opening: Rectangular (W 0.46' x L: 4.04' x H: 0')
CIE Type: Direct

Input Watts (W): 99
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				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	0
RCR																		
0	91	91	91	91	89	89	89	89	84	84	84	79	79	79	75	75	75	73
1	82	77	73	70	79	75	72	68	71	68	65	67	65	63	64	62	60	58
2	74	67	61	56	71	65	59	55	61	57	53	58	54	51	55	52	49	47
3	67	58	51	46	65	57	50	45	54	48	44	51	46	43	48	45	41	39
4	61	51	44	38	59	50	43	38	47	42	37	45	40	36	43	39	35	33
5	56	46	38	33	54	44	38	33	42	36	32	40	35	31	39	34	30	29
6	52	41	34	29	50	40	33	28	38	32	28	36	31	27	35	30	27	25
7	48	37	30	25	46	36	30	25	35	29	24	33	28	24	32	27	24	22
8	44	34	27	22	43	33	27	22	32	26	22	30	25	21	29	25	21	19
9	42	31	24	20	40	30	24	20	29	23	20	28	23	19	27	22	19	17
10	39	28	22	18	38	28	22	18	27	21	18	26	21	17	25	20	17	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9727	9727	9727
5°	9747	10056	10173
10°	9718	10621	11358
15°	9673	11514	12609
20°	9585	12404	13592
25°	9463	13207	13643
30°	9306	13433	12822
35°	9108	13166	11839
40°	8867	12303	11461
45°	8563	11357	11439
50°	8172	10929	12014
55°	7669	10820	12370
60°	7031	11354	13341
65°	6215	11852	14822
70°	5131	12861	16446
75°	3749	14862	19420
80°	2175	18438	23993
85°	867	27468	37935



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	166.1	2.4	1.9	0°	1674	1674	1674	1674	1674	
10°-20°	534.8	7.8	6.0	5°	1671	1686	1724	1744	1744	159
20°-30°	886.2	12.9	10.0	15°	1608	1713	1914	2050	2096	453
30°-40°	1054.0	15.3	11.8	25°	1476	1748	2060	2128	2128	680
40°-50°	1062.7	15.4	11.9	35°	1284	1700	1856	1710	1669	803
50°-60°	979.4	14.2	11.0	45°	1042	1515	1382	1378	1392	803
60°-70°	818.9	11.9	9.2	55°	757	1117	1068	1193	1221	676
70°-80°	635.7	9.2	7.1	65°	452	659	862	1008	1078	447
80°-90°	398.8	5.8	4.5	75°	167	403	662	840	865	182
90°-100°	229.7	3.3	2.6	85°	13	207	412	530	569	22
100°-110°	80.8	1.2	0.9	90°	0	125	309	433	475	1
110°-120°	16.6	0.2	0.2	95°	1	57	235	359	403	1
120°-130°	8.5	0.1	0.1	105°	1	12	47	140	173	1
130°-140°	5.8	0.1	0.1	115°	3	7	15	22	28	3
140°-150°	0.6	0.0	0.0	125°	4	6	11	13	12	3
150°-160°	0.0	0.0	0.0	135°	4	6	8	10	10	3
160°-170°	0.0	0.0	0.0	145°	0	0	0	0	0	0
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0	0
0°-30°	1587.1	23.1	17.8	165°	0	0	0	0	0	0
0°-40°	2641.2	38.4	29.7	175°	0	0	0	0	0	0
0°-60°	4683.3	68.1	52.6	180°	0	0	0	0	0	0
0°-90°	6536.6	95.0	73.4							
90°-120°	327.2	4.8	3.7							
90°-150°	342.2	5.0	3.8							
90°-180°	342.0	5.0	3.8							
0°-180°	6878.8	100.0	77.3							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1674	1674	1674	1674	1674
2.5°	1676	1675	1682	1691	1690
5°	1671	1686	1724	1744	1744
7.5°	1661	1704	1745	1800	1826
10°	1647	1713	1800	1897	1925
12.5°	1630	1710	1868	1966	2000
15°	1608	1713	1914	2050	2096
17.5°	1581	1728	1956	2124	2167
20°	1550	1744	2006	2166	2198
22.5°	1515	1751	2044	2167	2178
25°	1476	1748	2060	2128	2128
27.5°	1433	1734	2046	2067	2029
30°	1387	1724	2002	1958	1911
32.5°	1337	1715	1942	1840	1782
35°	1284	1700	1856	1710	1669
37.5°	1228	1673	1741	1603	1583
40°	1169	1630	1622	1516	1511
42.5°	1106	1581	1489	1445	1450
45°	1042	1515	1382	1378	1392
47.5°	975	1429	1287	1320	1363
50°	904	1340	1209	1286	1329
52.5°	832	1239	1134	1248	1277
55°	757	1117	1068	1193	1221
57.5°	682	991	1021	1139	1186
60°	605	858	977	1102	1148
62.5°	528	753	913	1057	1097
65°	452	659	862	1008	1078
67.5°	375	579	816	984	1017
70°	302	513	757	920	968
72.5°	232	458	723	886	951
75°	167	403	662	840	865
77.5°	111	348	628	751	794
80°	65	295	551	676	717
82.5°	32	251	478	604	644
85°	13	207	412	530	569
87.5°	4	159	346	470	511
90°	0	125	309	433	475
92.5°	1	95	279	403	445
95°	1	57	235	359	403
97.5°	1	30	181	305	348
100°	1	18	129	248	290
102.5°	1	13	89	188	228
105°	1	12	47	140	173
107.5°	2	11	29	92	126
110°	2	9	20	51	77



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3	8	16	32	43
115°	3	7	15	22	28
117.5°	3	7	14	16	18
120°	3	6	13	14	14
122.5°	4	6	12	14	13
125°	4	6	11	13	12
127.5°	4	6	10	12	12
130°	4	5	9	11	11
132.5°	4	6	9	10	10
135°	4	6	8	10	10
137.5°	4	5	7	9	8
140°	5	6	7	9	8
142.5°	0	0	0	0	0
145°	0	0	0	0	0
147.5°	0	0	0	0	0
150°	0	0	0	0	0
152.5°	0	0	0	0	0
155°	0	0	0	0	0
157.5°	0	0	0	0	0
160°	0	0	0	0	0
162.5°	0	0	0	0	0
165°	0	0	0	0	0
167.5°	0	0	0	0	0
170°	0	0	0	0	0
172.5°	0	0	0	0	0
175°	0	0	0	0	0
177.5°	0	0	0	0	0
180°	0	0	0	0	0

(END OF REPORT)