

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: 766618

Luminaire Tested: **HPHC-150xxxx**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: 766618  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: HPHC-150xxxx  
Description: FAIL-SAFE CLEAR 12 x 12  
Light Source: #007 - 150W HPS CL HOR MED 16000 LUMENS  
Ballast/Driver: -

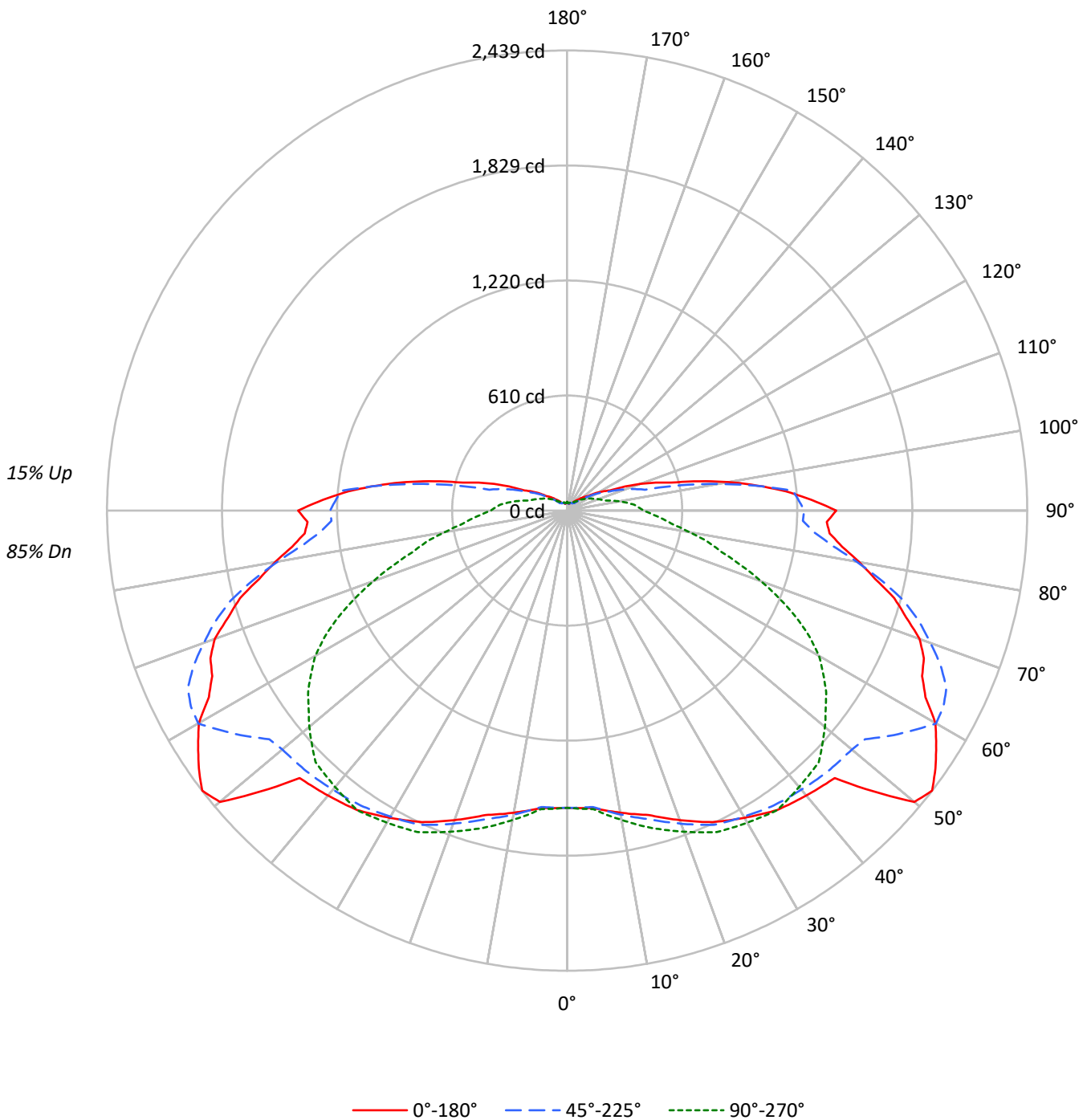
**Summary**

Lumens per Lamp: 16000 (1 lamp)  
Luminaire Lumens: 13139.9 lumens  
Efficiency: 82.1%  
Efficacy: 87.6 lumens/watt  
Spacing Criteria (0/90/45): 1.85 / 1.79 / 2  
Luminous Opening: Point Source (0' x 0' x 0')  
CIE Type: Semi-Direct

Input Watts (W): 150  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): 2.0  
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	95	95	95	95	91	91	91	91	84	84	84	78	78	78	72	72	72	69
1	82	77	71	67	78	73	69	65	67	64	60	62	59	56	57	54	52	49
2	73	64	57	51	69	61	55	49	56	51	46	51	47	43	47	43	40	37
3	65	55	46	40	62	52	45	39	48	41	36	44	38	34	40	35	32	29
4	59	47	39	32	56	45	37	31	41	35	29	38	32	28	35	30	26	23
5	54	41	33	27	51	40	32	26	36	30	24	33	28	23	30	26	22	19
6	49	37	28	23	47	35	27	22	32	26	21	30	24	19	27	22	18	16
7	45	33	25	19	43	32	24	19	29	23	18	27	21	17	25	20	16	14
8	42	30	22	17	40	29	21	16	26	20	15	24	19	15	22	17	14	12
9	39	27	20	15	37	26	19	14	24	18	14	22	17	13	21	16	12	10
10	36	25	18	13	35	24	17	13	22	16	12	20	15	11	19	14	11	9

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	Luminaire represents a point source (luminous area is zero).		
5°	No luminance values can be calculated.		
10°			
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	153.0	1.2	1.0	0°	1575	1575	1575	1575	1575	
10°-20°	484.0	3.7	3.0	5°	1582	1577	1588	1577	1582	153
20°-30°	850.3	6.5	5.3	15°	1670	1694	1742	1694	1670	477
30°-40°	1203.9	9.2	7.5	25°	1822	1838	1880	1838	1822	843
40°-50°	1526.0	11.6	9.5	35°	1938	1908	1939	1908	1938	1215
50°-60°	1871.1	14.2	11.7	45°	2005	1954	1886	1954	2005	1628
60°-70°	1968.7	15.0	12.3	55°	2383	2083	1676	2083	2383	2122
70°-80°	1729.7	13.2	10.8	65°	2076	2218	1340	2218	2076	2079
80°-90°	1330.4	10.1	8.3	75°	1795	1847	847	1847	1795	1884
90°-100°	1051.1	8.0	6.6	85°	1396	1313	510	1313	1396	1182
100°-110°	507.1	3.9	3.2	90°	1426	1256	404	1256	1426	757
110°-120°	229.3	1.7	1.4	95°	1164	1201	356	1201	1164	889
120°-130°	111.8	0.9	0.7	105°	571	427	205	427	571	642
130°-140°	55.5	0.4	0.3	115°	253	232	148	232	253	277
140°-150°	31.9	0.2	0.2	125°	134	121	106	121	134	129
150°-160°	20.9	0.2	0.1	135°	81	56	69	56	81	65
160°-170°	11.4	0.1	0.1	145°	50	47	51	47	50	34
170°-180°	3.9	0.0	0.0	155°	44	45	48	45	44	20
0°-30°	1487.3	11.3	9.3	165°	37	38	42	38	37	11
0°-40°	2691.2	20.5	16.8	175°	43	39	40	39	43	4
0°-60°	6088.2	46.3	38.1	180°	46	46	46	46	46	
0°-90°	11117.1	84.6	69.5							
90°-120°	1787.5	13.6	11.2							
90°-150°	1986.7	15.1	12.4							
90°-180°	2023.0	15.4	12.6							
0°-180°	13139.9	100.0	82.1							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1575	1575	1575	1575	1575	1575	1575	1575	1575
2.5°	1579	1576	1576	1578	1582	1578	1576	1576	1579
5°	1582	1577	1577	1581	1588	1581	1577	1577	1582
7.5°	1604	1602	1606	1614	1627	1614	1606	1602	1604
10°	1626	1627	1636	1646	1665	1646	1636	1627	1626
12.5°	1648	1653	1665	1679	1704	1679	1665	1653	1648
15°	1670	1678	1694	1712	1742	1712	1694	1678	1670
17.5°	1708	1716	1730	1745	1777	1745	1730	1716	1708
20°	1746	1755	1766	1779	1811	1779	1766	1755	1746
22.5°	1784	1793	1802	1812	1846	1812	1802	1793	1784
25°	1822	1831	1838	1846	1880	1846	1838	1831	1822
27.5°	1851	1852	1856	1866	1895	1866	1856	1852	1851
30°	1880	1873	1873	1887	1910	1887	1873	1873	1880
32.5°	1909	1893	1891	1907	1924	1907	1891	1893	1909
35°	1938	1914	1908	1927	1939	1927	1908	1914	1938
37.5°	1955	1922	1920	1933	1926	1933	1920	1922	1955
40°	1972	1929	1931	1939	1913	1939	1931	1929	1972
42.5°	1988	1936	1943	1945	1899	1945	1943	1936	1988
45°	2005	1944	1954	1951	1886	1951	1954	1944	2005
47.5°	2204	2082	1962	1920	1835	1920	1962	2082	2204
50°	2402	2221	1970	1889	1784	1889	1970	2221	2402
52.5°	2439	2416	1990	1847	1727	1847	1990	2416	2439
55°	2383	2471	2083	1808	1676	1808	2083	2471	2383
57.5°	2319	2472	2170	1767	1609	1767	2170	2472	2319
60°	2254	2473	2257	1726	1542	1726	2257	2473	2254
62.5°	2141	2434	2249	1695	1448	1695	2249	2434	2141
65°	2076	2359	2218	1679	1340	1679	2218	2359	2076
67.5°	2046	2259	2142	1700	1219	1700	2142	2259	2046
70°	1988	2159	2049	1669	1094	1669	2049	2159	1988
72.5°	1884	2049	1956	1578	968	1578	1956	2049	1884
75°	1795	1930	1847	1477	847	1477	1847	1930	1795
77.5°	1672	1796	1705	1373	763	1373	1705	1796	1672
80°	1571	1700	1556	1234	659	1234	1556	1700	1571
82.5°	1470	1587	1415	1104	566	1104	1415	1587	1470
85°	1396	1499	1313	999	510	999	1313	1499	1396
87.5°	1377	1464	1250	925	451	925	1250	1464	1377
90°	1426	1483	1256	891	404	891	1256	1483	1426
92.5°	1295	1351	1229	853	380	853	1229	1351	1295
95°	1164	1219	1201	816	356	816	1201	1219	1164
97.5°	1016	1039	1008	718	318	718	1008	1039	1016
100°	868	860	814	620	281	620	814	860	868
102.5°	719	681	621	521	243	521	621	681	719
105°	571	502	427	423	205	423	427	502	571
107.5°	492	436	378	364	191	364	378	436	492
110°	412	371	330	304	177	304	330	371	412



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	333	305	281	245	162	245	281	305	333
115°	253	239	232	186	148	186	232	239	253
117.5°	223	211	204	166	138	166	204	211	223
120°	194	182	177	146	127	146	177	182	194
122.5°	164	154	149	126	117	126	149	154	164
125°	134	126	121	106	106	106	121	126	134
127.5°	121	112	105	96	97	96	105	112	121
130°	108	99	89	86	88	86	89	99	108
132.5°	94	85	72	76	78	76	72	85	94
135°	81	71	56	66	69	66	56	71	81
137.5°	73	65	54	61	65	61	54	65	73
140°	66	60	52	57	60	57	52	60	66
142.5°	58	54	49	53	56	53	49	54	58
145°	50	48	47	48	51	48	47	48	50
147.5°	49	47	47	48	50	48	47	47	49
150°	47	46	46	48	50	48	46	46	47
152.5°	46	45	46	47	49	47	46	45	46
155°	44	44	45	47	48	47	45	44	44
157.5°	42	42	43	45	47	45	43	42	42
160°	41	41	42	44	45	44	42	41	41
162.5°	39	39	40	42	44	42	40	39	39
165°	37	37	38	41	42	41	38	37	37
167.5°	39	38	38	41	42	41	38	38	39
170°	40	39	39	41	41	41	39	39	40
172.5°	42	39	39	41	41	41	39	39	42
175°	43	40	39	41	40	41	39	40	43
177.5°	45	43	43	43	43	43	43	43	45
180°	46	46	46	46	46	46	46	46	46

(END OF REPORT)