

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: 766616

Luminaire Tested: **MHGC-175xxxx**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: 766616
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MHGC-175xxxx
Description: FAIL-SAFE CLEAR 12 x 12
Light Source: #021 - 175W MH CL HOR MED 14000 LUMENS
Ballast/Driver: -

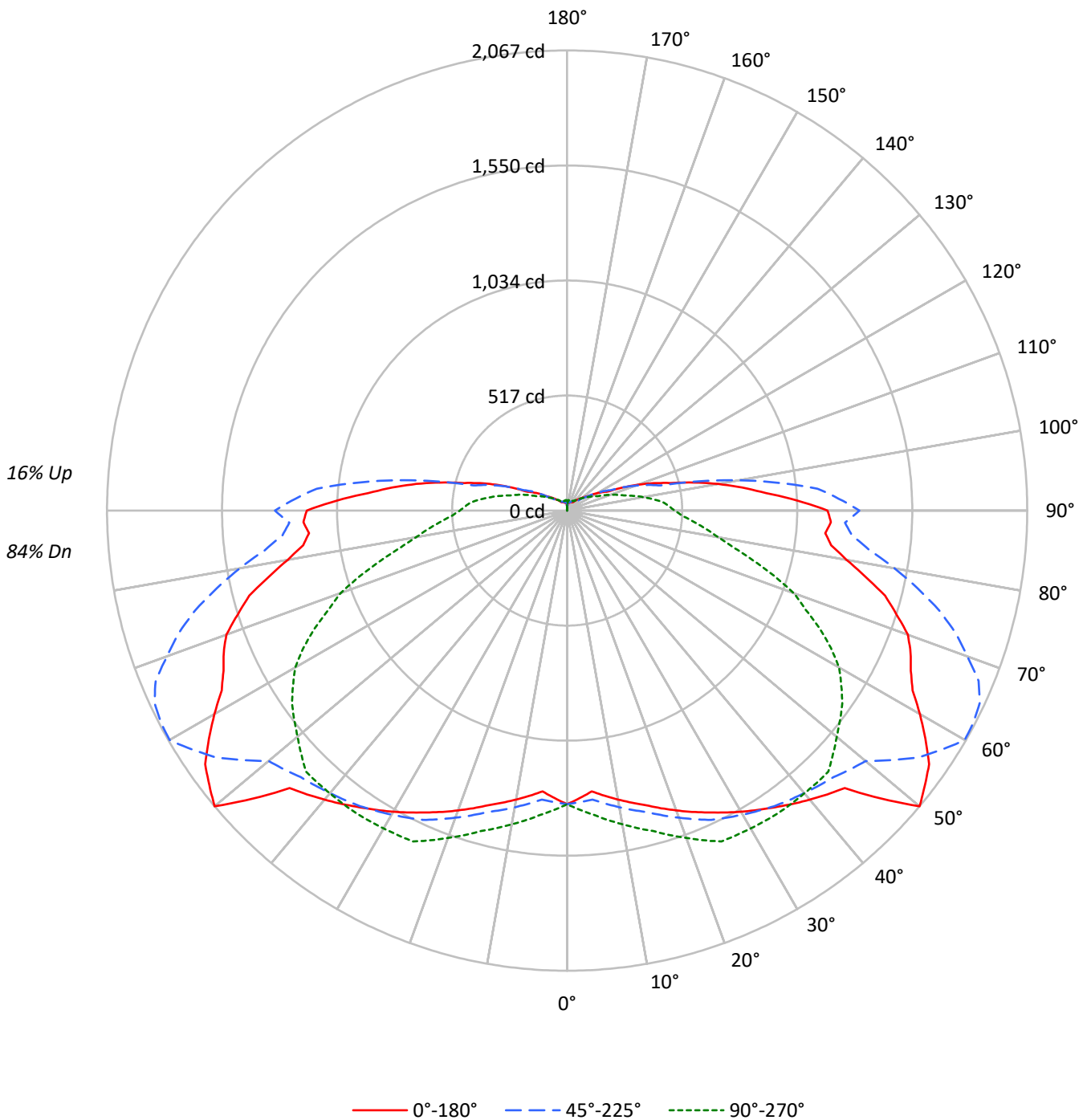
Summary

Lumens per Lamp: 14000 (1 lamp)
Luminaire Lumens: 11849.4 lumens
Efficiency: 84.6%
Efficacy: 67.7 lumens/watt
Spacing Criteria (0/90/45): 1.91 / 1.84 / 2.12
Luminous Opening: Point Source (0' x 0' x 0')
CIE Type: Semi-Direct

Input Watts (W): 175
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	97	97	97	97	94	94	94	94	86	86	86		80	80	80		74	74	74	71
1	84	78	73	68	80	75	70	66	69	65	61		63	60	57		58	55	53	50
2	75	65	58	51	71	62	55	50	57	51	46		52	47	43		47	44	40	37
3	67	56	47	40	63	53	45	39	48	42	36		44	39	34		40	36	32	29
4	60	48	39	32	57	46	38	31	42	35	29		38	32	28		35	30	26	23
5	55	42	33	27	52	40	32	26	37	30	24		34	28	23		31	25	21	19
6	50	37	29	23	47	36	28	22	33	26	21		30	24	19		27	22	18	16
7	46	33	25	19	44	32	24	19	29	23	18		27	21	17		25	19	16	13
8	43	30	22	17	41	29	21	16	27	20	15		24	19	14		22	17	14	12
9	40	27	20	15	38	26	19	14	24	18	14		22	17	13		21	16	12	10
10	37	25	18	13	35	24	17	13	22	16	12		21	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°	127.3	1.1	0.9	0°	1319	1319	1319	1319	1319	
10°-20°	404.7	3.4	2.9	5°	1266	1303	1372	1303	1266	123
20°-30°	716.0	6.0	5.1	15°	1370	1403	1490	1403	1370	391
30°-40°	1025.7	8.7	7.3	25°	1496	1533	1640	1533	1496	695
40°-50°	1337.3	11.3	9.6	35°	1627	1621	1657	1621	1627	1024
50°-60°	1659.2	14.0	11.9	45°	1763	1693	1659	1693	1763	1415
60°-70°	1781.3	15.0	12.7	55°	1985	1931	1509	1931	1985	1763
70°-80°	1602.6	13.5	11.4	65°	1703	2045	1251	2045	1703	1699
80°-90°	1273.4	10.7	9.1	75°	1478	1730	865	1730	1478	1546
90°-100°	997.6	8.4	7.1	85°	1164	1284	569	1284	1164	978
100°-110°	489.4	4.1	3.5	90°	1170	1313	482	1313	1170	625
110°-120°	213.1	1.8	1.5	95°	897	1129	432	1129	897	695
120°-130°	101.7	0.9	0.7	105°	478	436	263	436	478	526
130°-140°	52.8	0.4	0.4	115°	201	218	152	218	201	224
140°-150°	31.5	0.3	0.2	125°	111	109	101	109	111	106
150°-160°	20.9	0.2	0.1	135°	71	56	71	56	71	57
160°-170°	11.3	0.1	0.1	145°	47	47	52	47	47	31
170°-180°	3.6	0.0	0.0	155°	41	45	49	45	41	19
0°-30°	1248.0	10.5	8.9	165°	36	38	44	38	36	11
0°-40°	2273.8	19.2	16.2	175°	41	40	48	40	41	3
0°-60°	5270.2	44.5	37.6	180°	0	0	0	0	0	
0°-90°	9927.5	83.8	70.9							
90°-120°	1700.1	14.3	12.1							
90°-150°	1886.1	15.9	13.5							
90°-180°	1922.0	16.2	13.7							
0°-180°	11849.4	100.0	84.6							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1319	1319	1319	1319	1319	1319	1319	1319	1319
2.5°	1293	1309	1311	1322	1346	1322	1311	1309	1293
5°	1266	1299	1303	1325	1372	1325	1303	1299	1266
7.5°	1292	1326	1328	1353	1402	1353	1328	1326	1292
10°	1318	1352	1353	1381	1431	1381	1353	1352	1318
12.5°	1344	1378	1378	1409	1461	1409	1378	1378	1344
15°	1370	1405	1403	1436	1490	1436	1403	1405	1370
17.5°	1402	1437	1436	1468	1528	1468	1436	1437	1402
20°	1433	1470	1468	1499	1565	1499	1468	1470	1433
22.5°	1465	1503	1501	1531	1603	1531	1501	1503	1465
25°	1496	1536	1533	1562	1640	1562	1533	1536	1496
27.5°	1529	1563	1555	1577	1644	1577	1555	1563	1529
30°	1562	1590	1577	1592	1649	1592	1577	1590	1562
32.5°	1594	1617	1599	1607	1653	1607	1599	1617	1594
35°	1627	1645	1621	1622	1657	1622	1621	1645	1627
37.5°	1661	1666	1639	1639	1658	1639	1639	1666	1661
40°	1695	1688	1657	1656	1658	1656	1657	1688	1695
42.5°	1729	1710	1675	1672	1659	1672	1675	1710	1729
45°	1763	1731	1693	1689	1659	1689	1693	1731	1763
47.5°	1915	1875	1722	1683	1620	1683	1722	1875	1915
50°	2067	2019	1750	1676	1581	1676	1750	2019	2067
52.5°	2026	2075	1841	1654	1545	1654	1841	2075	2026
55°	1985	2131	1931	1632	1509	1632	1931	2131	1985
57.5°	1908	2134	1997	1622	1460	1622	1997	2134	1908
60°	1830	2137	2062	1612	1411	1612	2062	2137	1830
62.5°	1749	2109	2058	1611	1335	1611	2058	2109	1749
65°	1703	2068	2045	1633	1251	1633	2045	2068	1703
67.5°	1670	2007	2001	1638	1158	1638	2001	2007	1670
70°	1629	1943	1913	1604	1083	1604	1913	1943	1629
72.5°	1551	1855	1829	1555	973	1555	1829	1855	1551
75°	1478	1748	1730	1452	865	1452	1730	1748	1478
77.5°	1372	1633	1612	1334	766	1334	1612	1633	1372
80°	1274	1519	1494	1214	688	1214	1494	1519	1274
82.5°	1196	1423	1371	1110	628	1110	1371	1423	1196
85°	1164	1368	1284	1029	569	1029	1284	1368	1164
87.5°	1186	1370	1249	983	516	983	1249	1370	1186
90°	1170	1406	1313	969	482	969	1313	1406	1170
92.5°	1034	1220	1221	921	457	921	1221	1220	1034
95°	897	1034	1129	872	432	872	1129	1034	897
97.5°	792	895	956	761	390	761	956	895	792
100°	688	756	783	650	348	650	783	756	688
102.5°	583	617	609	539	305	539	609	617	583
105°	478	478	436	428	263	428	436	478	478
107.5°	409	411	382	366	235	366	382	411	409
110°	340	343	327	304	208	304	327	343	340



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	270	276	273	242	180	242	273	276	270
115°	201	209	218	179	152	179	218	209	201
117.5°	179	184	191	160	139	160	191	184	179
120°	156	160	164	140	127	140	164	160	156
122.5°	134	136	136	120	114	120	136	136	134
125°	111	112	109	101	101	101	109	112	111
127.5°	101	100	96	92	94	92	96	100	101
130°	91	89	83	83	86	83	83	89	91
132.5°	81	77	69	74	79	74	69	77	81
135°	71	66	56	65	71	65	56	66	71
137.5°	65	61	54	61	66	61	54	61	65
140°	59	57	52	57	62	57	52	57	59
142.5°	53	52	49	53	57	53	49	52	53
145°	47	47	47	49	52	49	47	47	47
147.5°	46	46	47	49	51	49	47	46	46
150°	44	46	46	48	51	48	46	46	44
152.5°	43	45	46	48	50	48	46	45	43
155°	41	44	45	47	49	47	45	44	41
157.5°	40	42	43	45	48	45	43	42	40
160°	39	40	42	44	47	44	42	40	39
162.5°	37	38	40	42	45	42	40	38	37
165°	36	36	38	40	44	40	38	36	36
167.5°	37	37	39	41	45	41	39	37	37
170°	39	38	39	42	46	42	39	38	39
172.5°	40	39	40	43	47	43	40	39	40
175°	41	40	40	44	48	44	40	40	41
177.5°	21	20	20	22	24	22	20	20	21
180°	0	0	0	0	0	0	0	0	0

(END OF REPORT)