

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: 17903

Luminaire Tested: **MB-SH-3T5**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: 17903
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: MB-SH-3T5
Description: DIRECT/INDIRECT SUSPENDED LUMINAIRE - MINIGATOR WHITE INTERIOR WITH
SPECULAR REFLECTORS AND 38 CELL HI PERFORMANCE LOUVER BLADE
Light Source: THREE PHILIPS 54 WATT T5 LAMPS

F54T5.841HO. LUMEN RATING = 4500 LMS.

Ballast/Driver: -

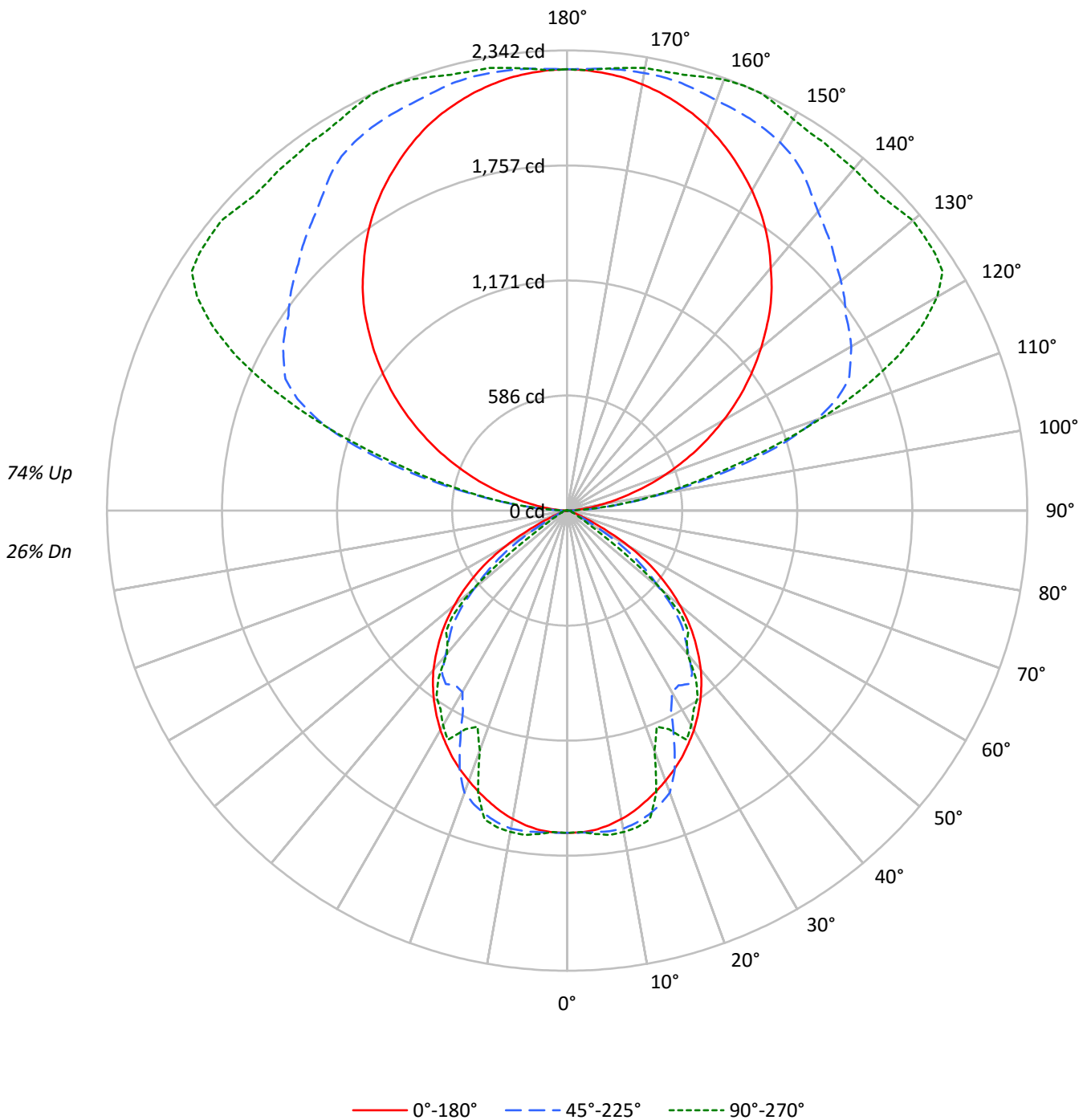
Summary

Lumens per Lamp: 4500 (3 lamps)
Luminaire Lumens: 11638.6 lumens
Efficiency: 86.2%
Efficacy: 64.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.15 / 1.22
Luminous Opening: Rectangular (W 0.22' x L: 3.59' x H: 0')
CIE Type: Semi-Indirect

Input Watts (W): 180
Input Voltage (V): NR
Input Current (A_{in}): 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	87	87	87	87	78	78	78	78	60	60	60	44	44	44	29	29	29	22
1	80	77	74	71	72	69	66	64	54	52	51	40	39	38	27	26	26	20
2	74	68	63	59	66	61	57	53	48	45	43	36	34	33	24	24	23	18
3	67	60	54	50	60	54	49	45	42	39	37	32	30	28	22	21	20	16
4	62	53	47	42	55	48	43	39	38	34	31	29	26	24	20	19	18	14
5	57	48	41	36	51	43	37	33	34	30	27	26	23	21	18	17	16	12
6	52	43	36	32	47	39	33	29	31	27	24	23	21	19	17	15	14	11
7	48	39	32	28	43	35	29	26	28	24	21	21	19	17	15	14	12	10
8	45	35	29	25	40	32	26	23	25	22	19	20	17	15	14	12	11	9
9	42	32	26	22	37	29	24	20	23	19	17	18	15	13	13	11	10	8
10	39	29	23	19	35	27	21	18	21	18	15	17	14	12	12	10	9	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	22354	22354	22354
5°	22321	22477	22601
10°	22059	22757	22986
15°	21647	22612	22948
20°	21224	22161	18844
25°	20806	19346	18469
30°	20305	16779	19866
35°	19652	17929	19273
40°	18839	17118	16916
45°	17599	15895	16793
50°	15874	13003	13457
55°	13522	10034	5429
60°	9824	5511	2434
65°	4840	2354	1609
70°	2100	1590	1243
75°	1374	1374	1301
80°	1044	1452	1256
85°	891	1486	1704



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	156.9	1.3	1.2
10°-20°	443.7	3.8	3.3
20°-30°	605.5	5.2	4.5
30°-40°	700.3	6.0	5.2
40°-50°	631.1	5.4	4.7
50°-60°	363.9	3.1	2.7
60°-70°	95.8	0.8	0.7
70°-80°	27.7	0.2	0.2
80°-90°	9.5	0.1	0.1
90°-100°	198.2	1.7	1.5
100°-110°	844.8	7.3	6.3
110°-120°	1395.6	12.0	10.3
120°-130°	1548.9	13.3	11.5
130°-140°	1467.9	12.6	10.9
140°-150°	1289.1	11.1	9.5
150°-160°	1009.5	8.7	7.5
160°-170°	634.8	5.5	4.7
170°-180°	215.4	1.9	1.6
0°-30°	1206.1	10.4	8.9
0°-40°	1906.4	16.4	14.1
0°-60°	2901.4	24.9	21.5
0°-90°	3034.4	26.1	22.5
90°-120°	2438.7	21.0	18.1
90°-150°	6744.5	57.9	50.0
90°-180°	8604.0	73.9	63.7
0°-180°	11638.6	100.0	86.2

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1640	1640	1640	1640	1640	
5°	1632	1641	1643	1656	1652	154
15°	1534	1572	1603	1623	1626	433
25°	1384	1427	1286	1165	1228	637
35°	1181	1172	1078	1118	1158	738
45°	913	784	825	800	871	701
55°	569	483	422	286	228	503
65°	150	107	73	53	50	169
75°	26	27	26	24	25	30
85°	6	6	10	12	11	6
90°	0	0	0	0	0	2
95°	58	159	168	172	155	73
105°	341	760	948	921	870	364
115°	724	1040	1583	1797	1854	715
125°	1109	1339	1732	2137	2285	990
135°	1462	1671	1904	2159	2261	1125
145°	1757	1902	2095	2237	2284	1098
155°	1989	2080	2201	2312	2342	916
165°	2151	2201	2252	2292	2296	607
175°	2234	2252	2258	2268	2258	212
180°	2246	2246	2246	2246	2246	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1640.2	1640.2	1640.2	1640.2	1640.2
2.5°	1639.2	1643.0	1640.6	1642.0	1637.8
5°	1631.6	1640.6	1643.0	1655.8	1652.0
7.5°	1615.4	1635.4	1645.8	1663.4	1664.8
10°	1594.0	1616.8	1644.4	1660.6	1661.0
12.5°	1567.4	1601.6	1627.8	1648.2	1650.6
15°	1534.2	1572.2	1602.6	1623.0	1626.4
17.5°	1500.4	1548.4	1569.8	1534.6	1506.6
20°	1463.4	1511.8	1528.0	1368.4	1299.3
22.5°	1425.4	1472.4	1430.6	1215.4	1190.2
25°	1383.6	1426.8	1286.5	1164.6	1228.2
27.5°	1337.0	1375.0	1147.0	1220.6	1315.6
30°	1290.3	1323.2	1066.2	1240.9	1262.4
32.5°	1237.1	1251.0	1055.1	1180.1	1199.1
35°	1181.2	1172.2	1077.6	1118.3	1158.4
37.5°	1121.8	1065.1	1045.8	1051.0	1075.1
40°	1058.9	975.3	962.2	968.7	950.8
42.5°	986.4	873.7	891.4	868.9	901.7
45°	913.1	783.9	824.7	800.5	871.3
47.5°	834.7	709.3	729.4	738.3	789.1
50°	748.7	646.1	613.3	616.7	634.7
52.5°	661.3	575.3	516.9	466.5	431.3
55°	569.1	482.7	422.3	286.5	228.5
57.5°	470.3	394.3	314.5	171.5	128.7
60°	360.4	270.3	202.2	103.4	89.3
62.5°	248.9	180.5	117.3	71.7	64.1
65°	150.1	106.9	73.0	52.7	49.9
67.5°	84.4	66.5	52.7	41.3	40.2
70°	52.7	42.3	39.9	33.7	31.2
72.5°	34.7	35.0	33.7	28.5	26.1
75°	26.1	27.4	26.1	23.6	24.7
77.5°	19.8	19.8	21.2	18.5	19.5
80°	13.3	14.7	18.5	16.0	16.0
82.5°	10.9	10.9	13.6	13.3	13.3
85°	5.7	6.0	9.5	11.9	10.9
87.5°	0.5	0.5	6.0	9.5	9.5
90°	0.5	0.5	0.5	0.5	0.5
92.5°	13.6	48.9	49.9	62.7	42.6
95°	57.8	158.7	168.0	171.5	155.3
97.5°	113.5	319.7	321.1	322.4	308.3
100°	178.1	525.9	495.8	545.9	474.1
102.5°	255.1	589.1	710.7	643.7	655.1
105°	341.1	759.8	948.4	920.7	870.0
107.5°	433.7	839.9	1168.7	1157.3	1120.7
110°	528.3	899.0	1349.4	1388.8	1382.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	623.3	968.7	1486.2	1621.6	1633.0
115°	724.5	1039.9	1582.6	1797.4	1854.4
117.5°	820.6	1111.8	1625.4	1939.4	2035.4
120°	919.3	1194.0	1669.6	2044.4	2174.6
122.5°	1014.3	1301.7	1702.4	2121.4	2265.8
125°	1109.3	1339.4	1731.8	2136.6	2284.8
127.5°	1199.1	1440.9	1778.8	2149.1	2291.1
130°	1289.0	1529.4	1819.2	2140.4	2296.2
132.5°	1375.0	1606.4	1856.8	2144.2	2277.2
135°	1462.4	1671.0	1903.8	2159.4	2260.7
137.5°	1540.8	1724.2	1944.6	2173.3	2261.7
140°	1613.0	1783.6	1986.4	2182.2	2271.0
142.5°	1687.6	1834.0	2037.9	2207.5	2273.1
145°	1757.4	1902.4	2094.8	2236.8	2283.5
147.5°	1821.6	1925.2	2138.0	2245.8	2286.2
150°	1881.0	1987.4	2165.7	2267.2	2301.1
152.5°	1935.6	2035.8	2186.0	2297.3	2322.5
155°	1988.8	2079.6	2201.2	2312.5	2341.5
157.5°	2036.8	2116.3	2211.6	2316.3	2341.8
160°	2082.1	2149.1	2221.6	2306.3	2333.9
162.5°	2119.0	2178.4	2236.8	2296.2	2313.9
165°	2150.8	2201.2	2252.0	2292.1	2295.9
167.5°	2179.8	2226.5	2259.6	2290.0	2288.6
170°	2202.6	2234.1	2261.0	2288.3	2287.3
172.5°	2222.7	2245.5	2261.0	2278.6	2272.1
175°	2234.1	2251.7	2258.2	2268.3	2258.2
177.5°	2243.0	2255.5	2249.6	2255.8	2243.0
180°	2245.9	2245.9	2245.9	2245.9	2245.9

(END OF REPORT)