

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: P309638

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-HRP-CA08-W2A-U-4000K**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

Test Information

Test Method: LM-79-08
Report Number: P309638
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-20)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-60HE-UNV-L82765-HRP-CA08-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 4000K TUNABLE CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment:

<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
AS-5443-2	Good	REFLECTOR
AS-5443-3	Good	DRIVER
AS-5443-4	Good	UPPER MODULE
AS-5443-5	Good	LENS
AS-5443-6	Good	DRIVER 2
AS-5443-7	Good	TRIM RING

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4176.0 lumens
Efficiency: N/A
Efficacy: 86.6 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

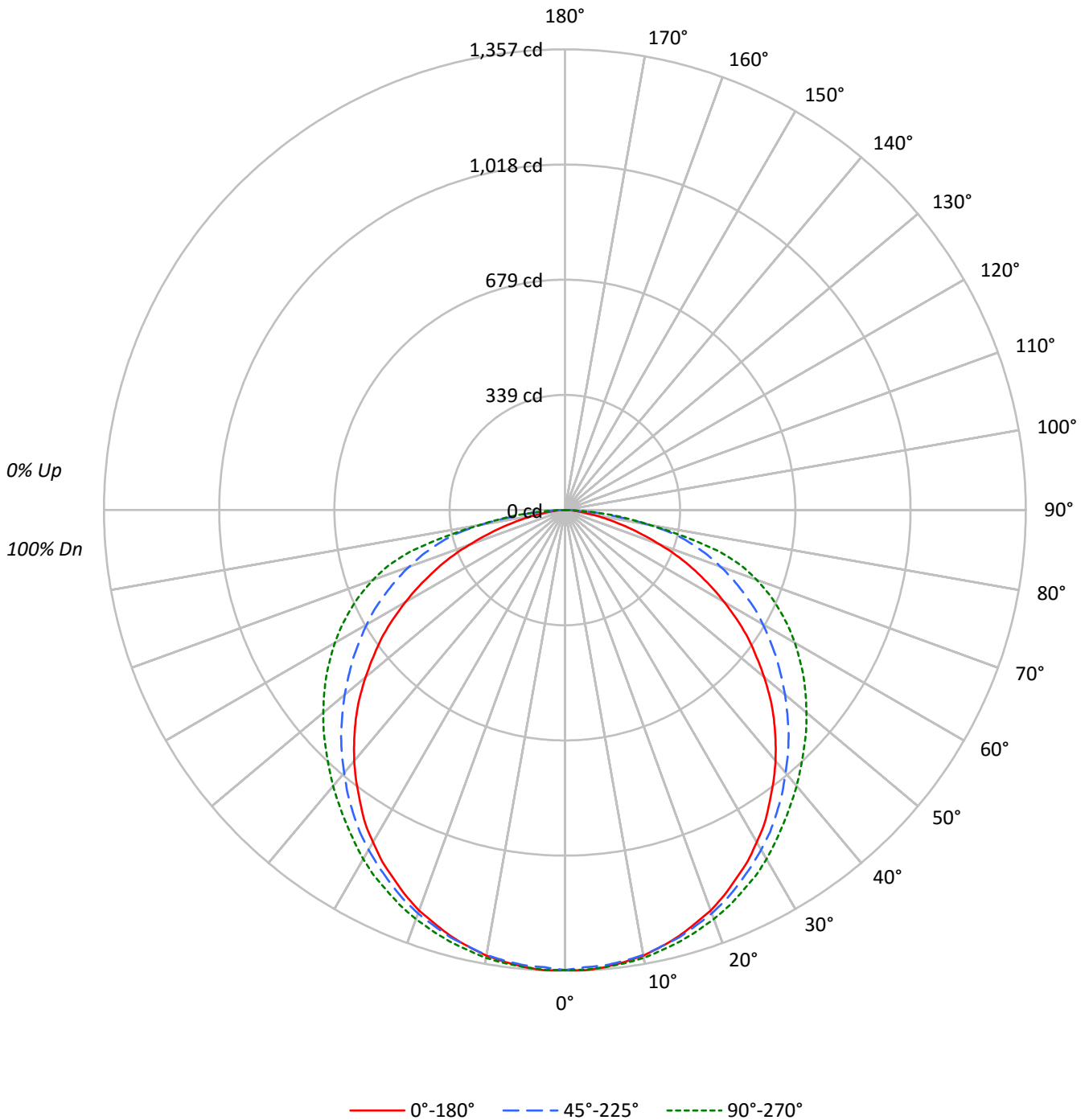
Input Watts (W): 48.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	98	94	105	101	96	93	96	93	90	92	90	87	89	86	84	82
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	68	63	58	56
4	81	68	59	52	79	67	59	52	65	57	51	62	56	50	60	54	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	63	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	36	30	57	44	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	24	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1823	1823	1823
5°	1825	1818	1825
10°	1820	1818	1830
15°	1809	1814	1831
20°	1797	1810	1835
25°	1775	1801	1838
30°	1755	1795	1844
35°	1726	1786	1846
40°	1695	1775	1864
45°	1657	1773	1893
50°	1603	1771	1943
55°	1546	1784	2014
60°	1459	1811	2103
65°	1347	1854	2221
70°	1176	1919	2366
75°	954	2018	2445
80°	704	1977	1977
85°	540	1457	1646



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.4	3.1
10°-20°	368.6	8.8
20°-30°	561.1	13.4
30°-40°	681.3	16.3
40°-50°	719.8	17.2
50°-60°	679.2	16.3
60°-70°	564.7	13.5
70°-80°	371.5	8.9
80°-90°	101.3	2.4
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1058.0	25.3
0°-40°	1739.4	41.7
0°-60°	3138.4	75.2
0°-90°	4176.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4176.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1355	1355	1355	1355	1355	
5°	1351	1351	1346	1351	1351	128
15°	1299	1301	1302	1315	1315	366
25°	1196	1203	1213	1234	1238	552
35°	1051	1063	1087	1115	1124	658
45°	871	888	932	977	995	670
55°	659	687	760	832	858	587
65°	423	472	582	668	698	418
75°	184	268	388	460	470	198
85°	35	77	94	105	107	43
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1354.9	1354.9	1354.9	1354.9	1354.9
2.5°	1356.7	1354.9	1347.9	1354.9	1354.9
5°	1351.4	1351.4	1346.2	1351.4	1351.4
7.5°	1342.7	1342.7	1339.2	1346.2	1346.2
10°	1332.2	1332.2	1330.4	1339.2	1339.2
12.5°	1316.4	1318.2	1316.4	1326.9	1326.9
15°	1299.0	1300.7	1302.5	1314.7	1314.7
17.5°	1276.2	1279.7	1283.2	1297.2	1299.0
20°	1255.3	1257.0	1264.0	1279.7	1281.5
22.5°	1227.3	1232.5	1241.3	1257.0	1262.2
25°	1195.8	1202.8	1213.3	1234.3	1237.8
27.5°	1166.1	1171.3	1185.3	1208.1	1215.0
30°	1129.4	1138.1	1155.6	1178.3	1187.1
32.5°	1094.4	1103.2	1124.1	1148.6	1155.6
35°	1050.7	1062.9	1087.4	1115.4	1124.1
37.5°	1008.7	1021.0	1050.7	1082.2	1092.7
40°	965.0	979.0	1010.5	1047.2	1061.2
42.5°	917.8	937.1	972.0	1012.2	1028.0
45°	870.6	888.1	931.8	977.3	994.8
47.5°	819.9	840.9	888.1	942.3	963.3
50°	765.7	792.0	846.2	905.6	928.3
52.5°	711.5	741.3	802.5	868.9	893.4
55°	659.1	687.1	760.5	832.2	858.4
57.5°	601.4	636.4	716.8	793.7	819.9
60°	542.0	580.4	673.1	753.5	781.5
62.5°	482.5	526.2	631.1	711.5	741.3
65°	423.1	472.0	582.2	667.8	697.6
67.5°	365.4	419.6	536.7	622.4	652.1
70°	299.0	367.1	487.8	571.7	601.4
72.5°	237.8	316.4	440.6	519.2	545.5
75°	183.6	267.5	388.1	459.8	470.3
77.5°	134.6	218.5	333.9	358.4	360.1
80°	90.9	174.8	255.2	251.8	255.2
82.5°	59.4	131.1	160.8	180.1	181.8
85°	35.0	76.9	94.4	104.9	106.6
87.5°	17.5	26.2	33.2	35.0	38.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)