

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: P313368

Luminaire Tested: **24FCZ2-70HE-UNV-L83050-HRP-CA08-W2A-U-4500K**

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: P313368
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: 24FCZ2-70HE-UNV-L83050-HRP-CA08-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 4500K 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: 5308.0 lumens
Efficiency: N/A
Efficacy: 87.7 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

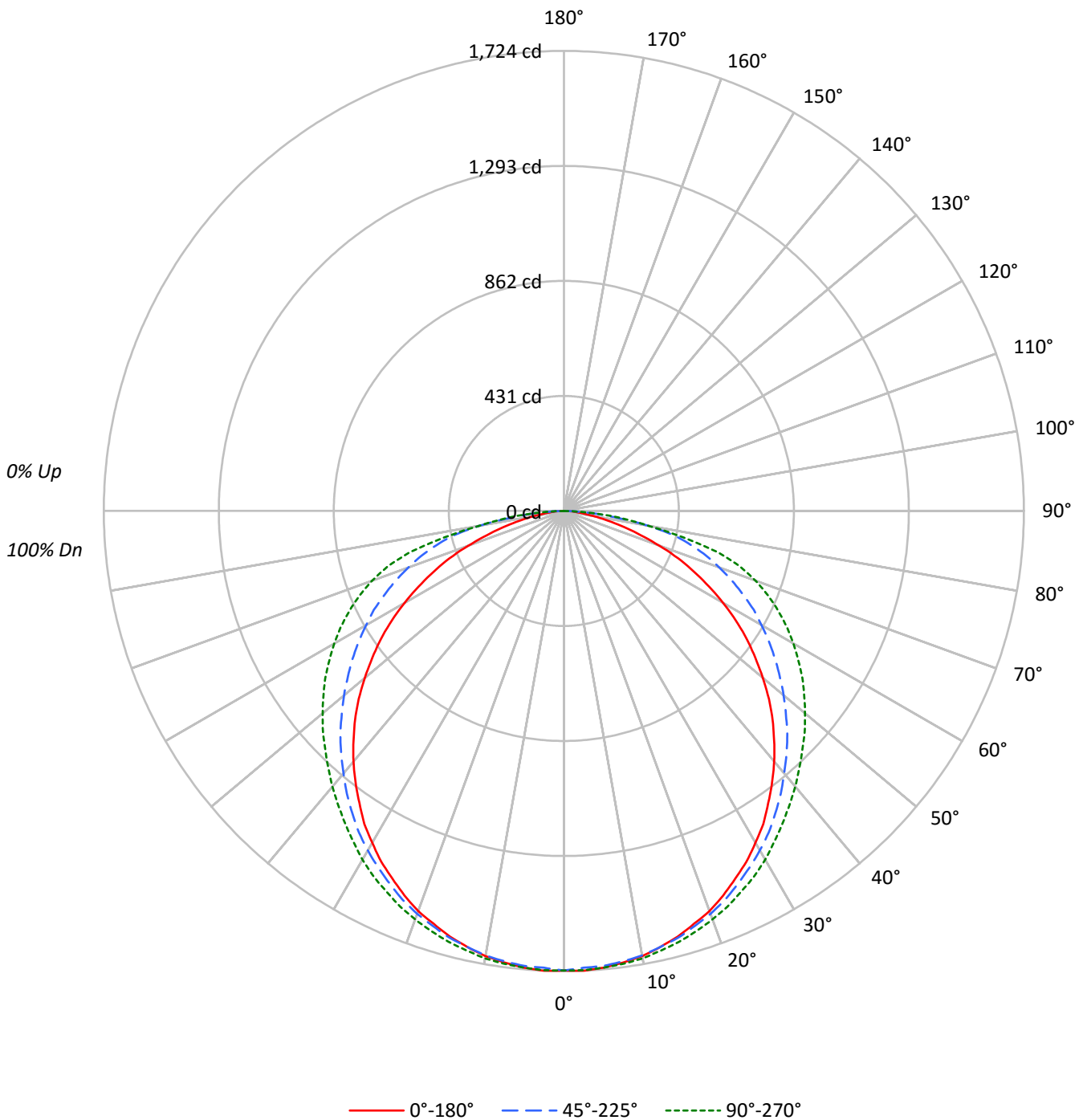
Input Watts (W): 60.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	2317	2317	2317
5°	2320	2311	2320
10°	2313	2310	2326
15°	2300	2306	2328
20°	2285	2300	2332
25°	2257	2290	2336
30°	2230	2282	2344
35°	2194	2270	2347
40°	2154	2256	2369
45°	2106	2254	2406
50°	2037	2251	2470
55°	1965	2267	2559
60°	1854	2302	2673
65°	1712	2356	2823
70°	1495	2439	3007
75°	1213	2564	3108
80°	896	2514	2514
85°	685	1853	2093



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.1	3.1
10°-20°	468.5	8.8
20°-30°	713.2	13.4
30°-40°	866.0	16.3
40°-50°	914.9	17.2
50°-60°	863.3	16.3
60°-70°	717.8	13.5
70°-80°	472.3	8.9
80°-90°	128.7	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°	1344.9	25.3
0°-40°	2210.9	41.7
0°-60°	3989.2	75.2
0°-90°	5308.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5308.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1722	1722	1722	1722	1722	
5°	1718	1718	1711	1718	1718	163
15°	1651	1653	1656	1671	1671	466
25°	1520	1529	1542	1569	1573	701
35°	1336	1351	1382	1418	1429	836
45°	1107	1129	1184	1242	1264	852
55°	838	873	967	1058	1091	746
65°	538	600	740	849	887	532
75°	233	340	493	584	598	251
85°	44	98	120	133	136	54
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1722.2	1722.2	1722.2	1722.2	1722.2
2.5°	1724.4	1722.2	1713.3	1722.2	1722.2
5°	1717.7	1717.7	1711.1	1717.7	1717.7
7.5°	1706.6	1706.6	1702.2	1711.1	1711.1
10°	1693.3	1693.3	1691.1	1702.2	1702.2
12.5°	1673.3	1675.5	1673.3	1686.6	1686.6
15°	1651.1	1653.3	1655.5	1671.1	1671.1
17.5°	1622.2	1626.6	1631.1	1648.9	1651.1
20°	1595.5	1597.7	1606.6	1626.6	1628.9
22.5°	1560.0	1566.6	1577.7	1597.7	1604.4
25°	1520.0	1528.9	1542.2	1568.9	1573.3
27.5°	1482.2	1488.9	1506.6	1535.5	1544.4
30°	1435.5	1446.6	1468.9	1497.7	1508.9
32.5°	1391.1	1402.2	1428.9	1460.0	1468.9
35°	1335.5	1351.1	1382.2	1417.7	1428.9
37.5°	1282.2	1297.7	1335.5	1375.5	1388.9
40°	1226.6	1244.4	1284.4	1331.1	1348.9
42.5°	1166.6	1191.1	1235.5	1286.6	1306.6
45°	1106.6	1128.9	1184.4	1242.2	1264.4
47.5°	1042.2	1068.9	1128.9	1197.8	1224.4
50°	973.3	1006.6	1075.5	1151.1	1180.0
52.5°	904.4	942.2	1020.0	1104.4	1135.5
55°	837.8	873.3	966.6	1057.8	1091.1
57.5°	764.4	808.9	911.1	1008.9	1042.2
60°	688.9	737.8	855.5	957.8	993.3
62.5°	613.3	668.9	802.2	904.4	942.2
65°	537.8	600.0	740.0	848.9	886.6
67.5°	464.4	533.3	682.2	791.1	828.9
70°	380.0	466.7	620.0	726.7	764.4
72.5°	302.2	402.2	560.0	660.0	693.3
75°	233.3	340.0	493.3	584.4	597.8
77.5°	171.1	277.8	424.4	455.5	457.8
80°	115.6	222.2	324.4	320.0	324.4
82.5°	75.6	166.7	204.4	228.9	231.1
85°	44.4	97.8	120.0	133.3	135.6
87.5°	22.2	33.3	42.2	44.4	48.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)