

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: P313193

Luminaire Tested: **24FCZ2-45HE-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: P313193
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: 24FCZ2-45HE-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: 3376.0 lumens
Efficiency: N/A
Efficacy: 95.1 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

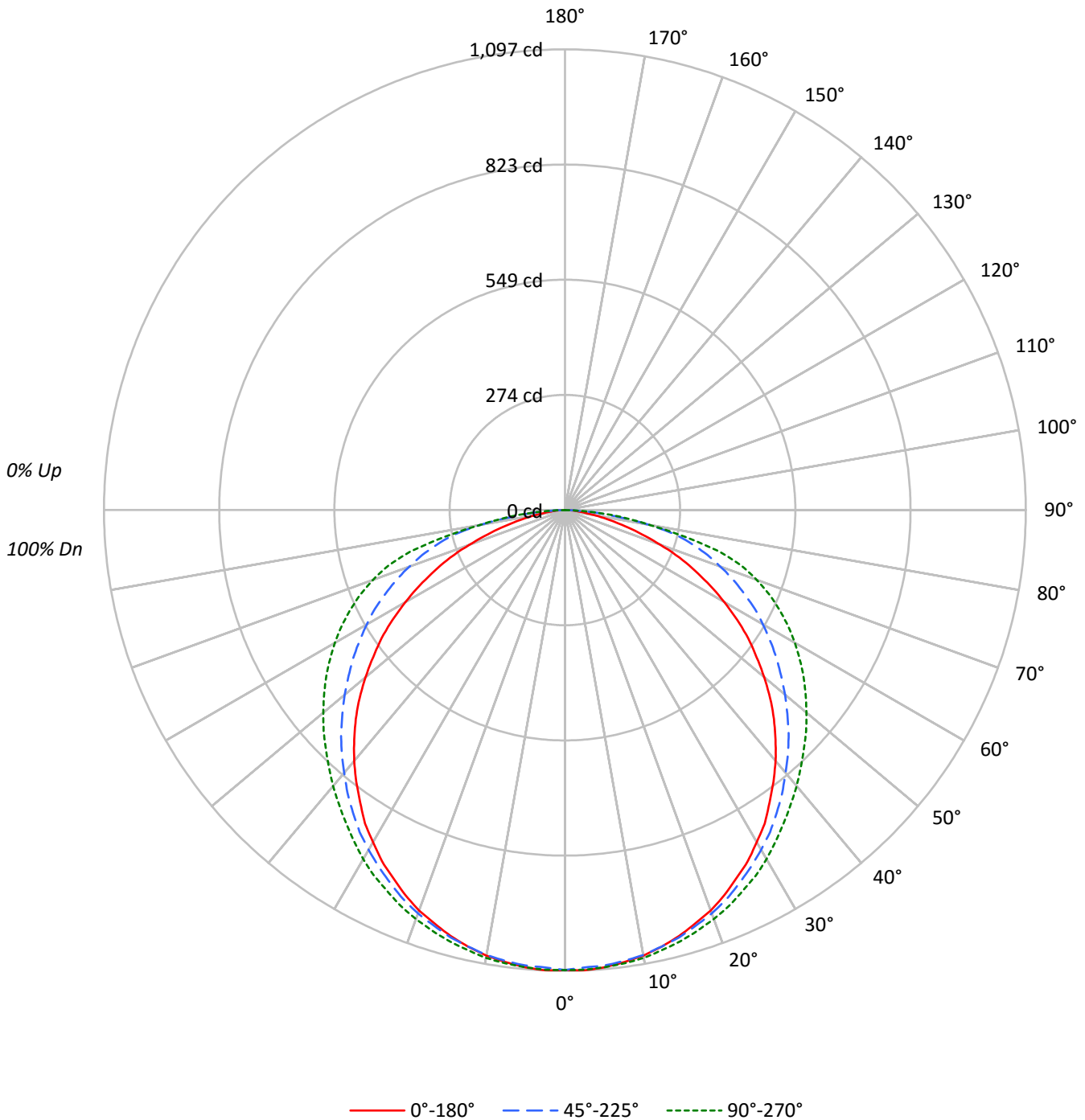
Input Watts (W): 35.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1474	1474	1474
5°	1476	1470	1476
10°	1471	1470	1479
15°	1463	1467	1480
20°	1453	1463	1483
25°	1435	1456	1486
30°	1418	1451	1491
35°	1395	1444	1493
40°	1370	1435	1507
45°	1339	1433	1530
50°	1296	1432	1571
55°	1250	1442	1628
60°	1179	1464	1700
65°	1089	1498	1795
70°	951	1551	1913
75°	771	1631	1976
80°	570	1598	1598
85°	437	1178	1331



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.8	3.1
10°-20°	298.0	8.8
20°-30°	453.6	13.4
30°-40°	550.8	16.3
40°-50°	581.9	17.2
50°-60°	549.1	16.3
60°-70°	456.6	13.5
70°-80°	300.4	8.9
80°-90°	81.9	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°	855.4	25.3
0°-40°	1406.2	41.7
0°-60°	2537.2	75.2
0°-90°	3376.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3376.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1095	1095	1095	1095	1095	
5°	1092	1092	1088	1092	1092	104
15°	1050	1052	1053	1063	1063	296
25°	967	972	981	998	1001	446
35°	849	859	879	902	909	532
45°	704	718	753	790	804	542
55°	533	555	615	673	694	475
65°	342	382	471	540	564	338
75°	148	216	314	372	380	160
85°	28	62	76	85	86	35
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1095.3	1095.3	1095.3	1095.3	1095.3
2.5°	1096.8	1095.3	1089.7	1095.3	1095.3
5°	1092.5	1092.5	1088.3	1092.5	1092.5
7.5°	1085.5	1085.5	1082.6	1088.3	1088.3
10°	1077.0	1077.0	1075.6	1082.6	1082.6
12.5°	1064.3	1065.7	1064.3	1072.7	1072.7
15°	1050.1	1051.5	1052.9	1062.8	1062.8
17.5°	1031.7	1034.6	1037.4	1048.7	1050.1
20°	1014.8	1016.2	1021.9	1034.6	1036.0
22.5°	992.2	996.4	1003.5	1016.2	1020.4
25°	966.7	972.4	980.9	997.8	1000.7
27.5°	942.7	946.9	958.3	976.6	982.3
30°	913.0	920.1	934.2	952.6	959.7
32.5°	884.8	891.8	908.8	928.6	934.2
35°	849.4	859.3	879.1	901.7	908.8
37.5°	815.5	825.4	849.4	874.9	883.3
40°	780.2	791.5	816.9	846.6	857.9
42.5°	742.0	757.6	785.8	818.3	831.0
45°	703.8	718.0	753.3	790.1	804.2
47.5°	662.9	679.8	718.0	761.8	778.8
50°	619.0	640.2	684.1	732.1	750.5
52.5°	575.2	599.3	648.7	702.4	722.2
55°	532.8	555.4	614.8	672.8	694.0
57.5°	486.2	514.5	579.5	641.7	662.9
60°	438.1	469.2	544.1	609.2	631.8
62.5°	390.1	425.4	510.2	575.2	599.3
65°	342.0	381.6	470.6	539.9	563.9
67.5°	295.4	339.2	433.9	503.2	527.2
70°	241.7	296.8	394.3	462.2	486.2
72.5°	192.2	255.8	356.2	419.8	441.0
75°	148.4	216.2	313.8	371.7	380.2
77.5°	108.8	176.7	269.9	289.7	291.1
80°	73.5	141.3	206.3	203.5	206.3
82.5°	48.1	106.0	130.0	145.6	147.0
85°	28.3	62.2	76.3	84.8	86.2
87.5°	14.1	21.2	26.9	28.3	31.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)