

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: P313212

Luminaire Tested: **24FCZ2-45HE-UNV-L83050-HRP-CP250-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: P313212
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-CP250-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.250"
POLYCARB 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: 3104.0 lumens
Efficiency: N/A
Efficacy: 89.7 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

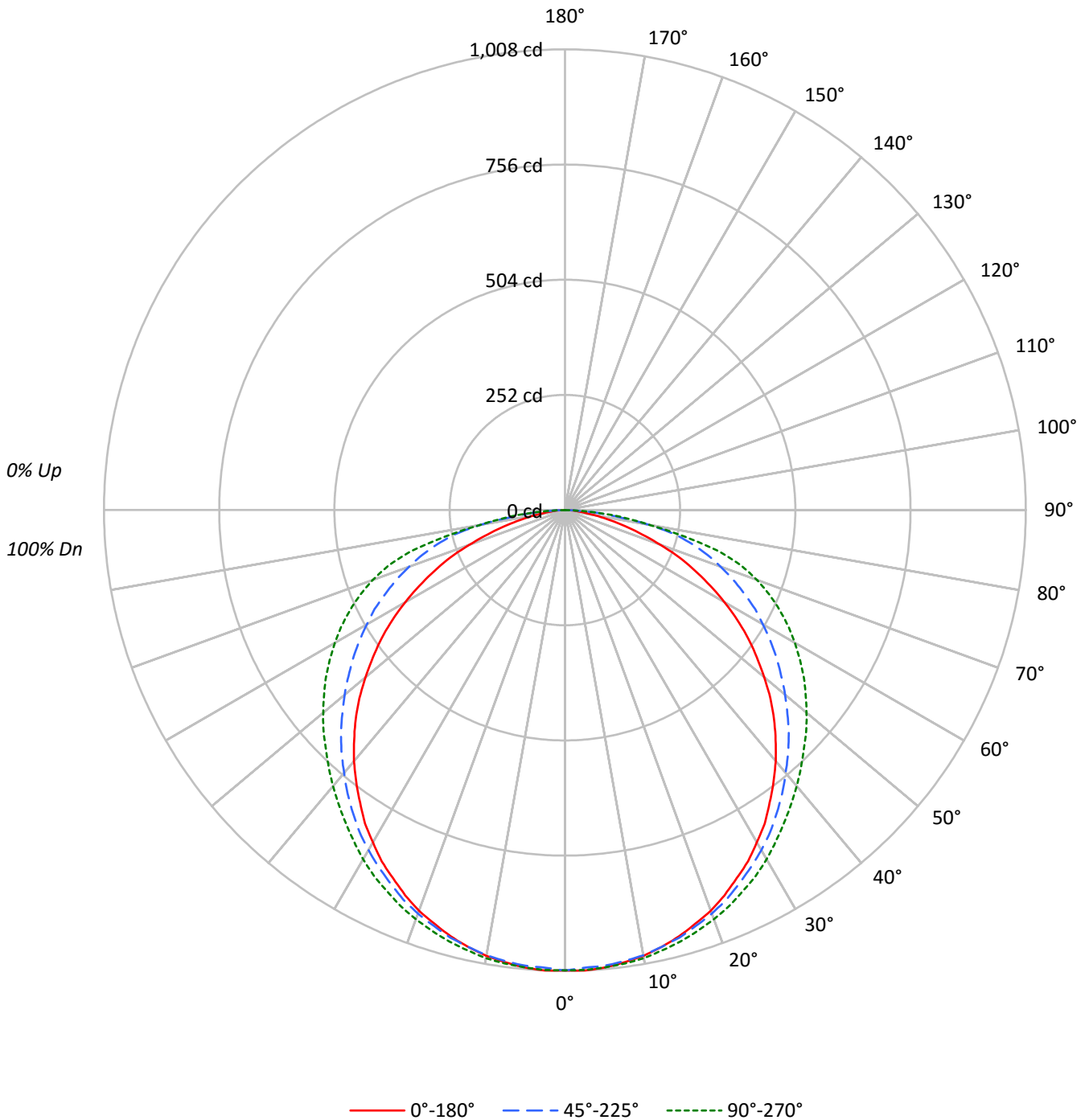
Input Watts (W): 34.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1355	1355	1355
5°	1357	1351	1357
10°	1353	1351	1360
15°	1345	1349	1361
20°	1336	1345	1364
25°	1319	1339	1366
30°	1304	1335	1371
35°	1283	1328	1373
40°	1260	1319	1385
45°	1231	1318	1407
50°	1191	1316	1444
55°	1149	1326	1497
60°	1084	1346	1563
65°	1001	1378	1651
70°	874	1426	1758
75°	709	1500	1817
80°	524	1470	1470
85°	401	1084	1224



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.4	3.1
10°-20°	274.0	8.8
20°-30°	417.1	13.4
30°-40°	506.4	16.3
40°-50°	535.0	17.2
50°-60°	504.9	16.3
60°-70°	419.8	13.5
70°-80°	276.2	8.9
80°-90°	75.3	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°	786.4	25.3
0°-40°	1292.9	41.7
0°-60°	2332.8	75.2
0°-90°	3104.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3104.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1007	1007	1007	1007	1007	
5°	1004	1004	1001	1004	1004	95
15°	966	967	968	977	977	272
25°	889	894	902	917	920	410
35°	781	790	808	829	836	489
45°	647	660	693	726	739	498
55°	490	511	565	619	638	436
65°	314	351	433	496	518	311
75°	136	199	288	342	350	147
85°	26	57	70	78	79	32
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1007.1	1007.1	1007.1	1007.1	1007.1
2.5°	1008.4	1007.1	1001.9	1007.1	1007.1
5°	1004.5	1004.5	1000.6	1004.5	1004.5
7.5°	998.0	998.0	995.4	1000.6	1000.6
10°	990.2	990.2	988.9	995.4	995.4
12.5°	978.5	979.8	978.5	986.3	986.3
15°	965.5	966.8	968.1	977.2	977.2
17.5°	948.6	951.2	953.8	964.2	965.5
20°	933.0	934.3	939.5	951.2	952.5
22.5°	912.2	916.1	922.6	934.3	938.2
25°	888.8	894.0	901.8	917.4	920.0
27.5°	866.8	870.7	881.0	897.9	903.1
30°	839.5	846.0	859.0	875.8	882.3
32.5°	813.5	820.0	835.6	853.8	859.0
35°	781.0	790.1	808.3	829.1	835.6
37.5°	749.8	758.9	781.0	804.4	812.2
40°	717.3	727.7	751.1	778.4	788.8
42.5°	682.2	696.5	722.5	752.4	764.1
45°	647.1	660.1	692.6	726.4	739.4
47.5°	609.5	625.0	660.1	700.4	716.0
50°	569.2	588.7	628.9	673.1	690.0
52.5°	528.9	551.0	596.5	645.8	664.0
55°	489.9	510.7	565.3	618.6	638.0
57.5°	447.0	473.0	532.8	590.0	609.5
60°	402.8	431.4	500.3	560.1	580.9
62.5°	358.7	391.1	469.1	528.9	551.0
65°	314.5	350.9	432.7	496.4	518.5
67.5°	271.6	311.9	398.9	462.6	484.7
70°	222.2	272.9	362.6	424.9	447.0
72.5°	176.7	235.2	327.5	385.9	405.4
75°	136.4	198.8	288.5	341.8	349.6
77.5°	100.1	162.4	248.2	266.4	267.7
80°	67.6	129.9	189.7	187.1	189.7
82.5°	44.2	97.5	119.6	133.8	135.1
85°	26.0	57.2	70.2	78.0	79.3
87.5°	13.0	19.5	24.7	26.0	28.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)