

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: P313208

Luminaire Tested: **24FCZ2-45HE-UNV-L83050-HRP-CP187-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: P313208
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-CP187-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.187"
POLYCARB 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: 3159.0 lumens
Efficiency: N/A
Efficacy: 89.0 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

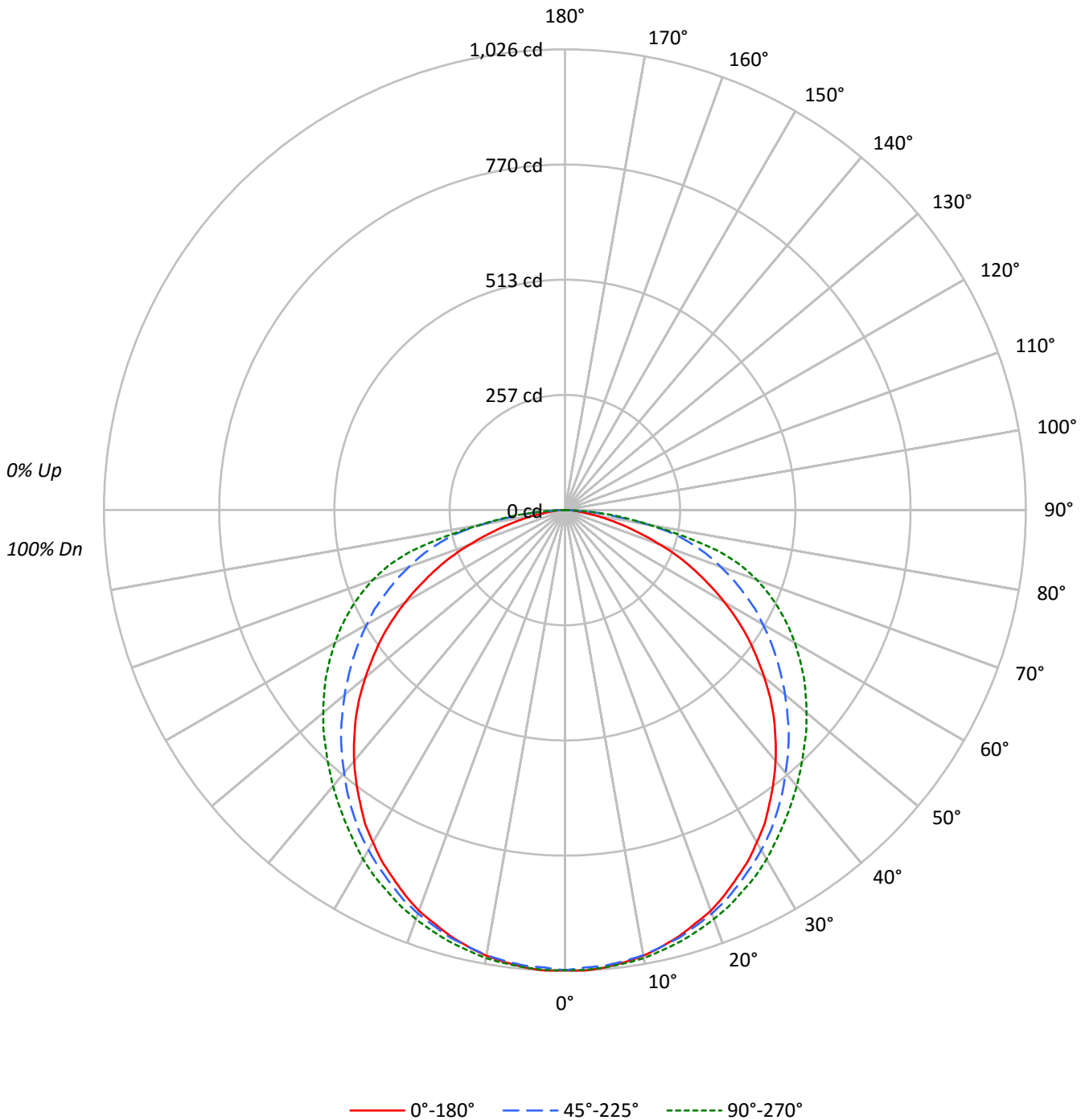
Input Watts (W): 35.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1379	1379	1379
5°	1381	1375	1381
10°	1377	1375	1384
15°	1369	1372	1385
20°	1360	1369	1388
25°	1343	1363	1390
30°	1327	1358	1395
35°	1305	1351	1397
40°	1282	1343	1410
45°	1253	1341	1432
50°	1213	1340	1470
55°	1170	1350	1523
60°	1103	1370	1591
65°	1019	1402	1680
70°	889	1452	1790
75°	722	1526	1850
80°	533	1496	1496
85°	409	1102	1246



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	97.1	3.1
10°-20°	278.8	8.8
20°-30°	424.5	13.4
30°-40°	515.4	16.3
40°-50°	544.5	17.2
50°-60°	513.8	16.3
60°-70°	427.2	13.5
70°-80°	281.1	8.9
80°-90°	76.6	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°	800.4	25.3
0°-40°	1315.8	41.7
0°-60°	2374.1	75.2
0°-90°	3159.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3159.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1025	1025	1025	1025	1025	
5°	1022	1022	1018	1022	1022	97
15°	983	984	985	994	994	277
25°	905	910	918	934	936	417
35°	795	804	823	844	850	498
45°	659	672	705	739	752	507
55°	499	520	575	630	649	444
65°	320	357	440	505	528	316
75°	139	202	294	348	356	150
85°	26	58	71	79	81	32
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1024.9	1024.9	1024.9	1024.9	1024.9
2.5°	1026.3	1024.9	1019.6	1024.9	1024.9
5°	1022.3	1022.3	1018.3	1022.3	1022.3
7.5°	1015.7	1015.7	1013.0	1018.3	1018.3
10°	1007.7	1007.7	1006.4	1013.0	1013.0
12.5°	995.8	997.2	995.8	1003.8	1003.8
15°	982.6	983.9	985.3	994.5	994.5
17.5°	965.4	968.1	970.7	981.3	982.6
20°	949.6	950.9	956.2	968.1	969.4
22.5°	928.4	932.4	939.0	950.9	954.8
25°	904.6	909.9	917.8	933.7	936.3
27.5°	882.1	886.1	896.7	913.8	919.1
30°	854.3	860.9	874.2	891.4	898.0
32.5°	827.9	834.5	850.4	868.9	874.2
35°	794.8	804.1	822.6	843.8	850.4
37.5°	763.1	772.3	794.8	818.6	826.6
40°	730.0	740.6	764.4	792.2	802.8
42.5°	694.3	708.9	735.3	765.7	777.6
45°	658.6	671.8	704.9	739.3	752.5
47.5°	620.3	636.1	671.8	712.8	728.7
50°	579.3	599.1	640.1	685.1	702.2
52.5°	538.3	560.7	607.0	657.3	675.8
55°	498.6	519.7	575.3	629.5	649.3
57.5°	454.9	481.4	542.2	600.4	620.3
60°	410.0	439.1	509.2	570.0	591.2
62.5°	365.0	398.1	477.4	538.3	560.7
65°	320.0	357.1	440.4	505.2	527.7
67.5°	276.4	317.4	406.0	470.8	493.3
70°	226.1	277.7	369.0	432.5	454.9
72.5°	179.9	239.4	333.3	392.8	412.6
75°	138.9	202.3	293.6	347.8	355.8
77.5°	101.8	165.3	252.6	271.1	272.4
80°	68.8	132.3	193.1	190.4	193.1
82.5°	45.0	99.2	121.7	136.2	137.5
85°	26.5	58.2	71.4	79.4	80.7
87.5°	13.2	19.8	25.1	26.5	29.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)