

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: P309448

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-HRP-CP250-W2A-U-3500K**

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: P309448  
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-L82765-HRP-CP250-W2A-U-3500K  
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.250"  
POLYCARB SHEET  
Light Source: (336) 3500K 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: 2819.0 lumens  
Efficiency: N/A  
Efficacy: 82.9 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

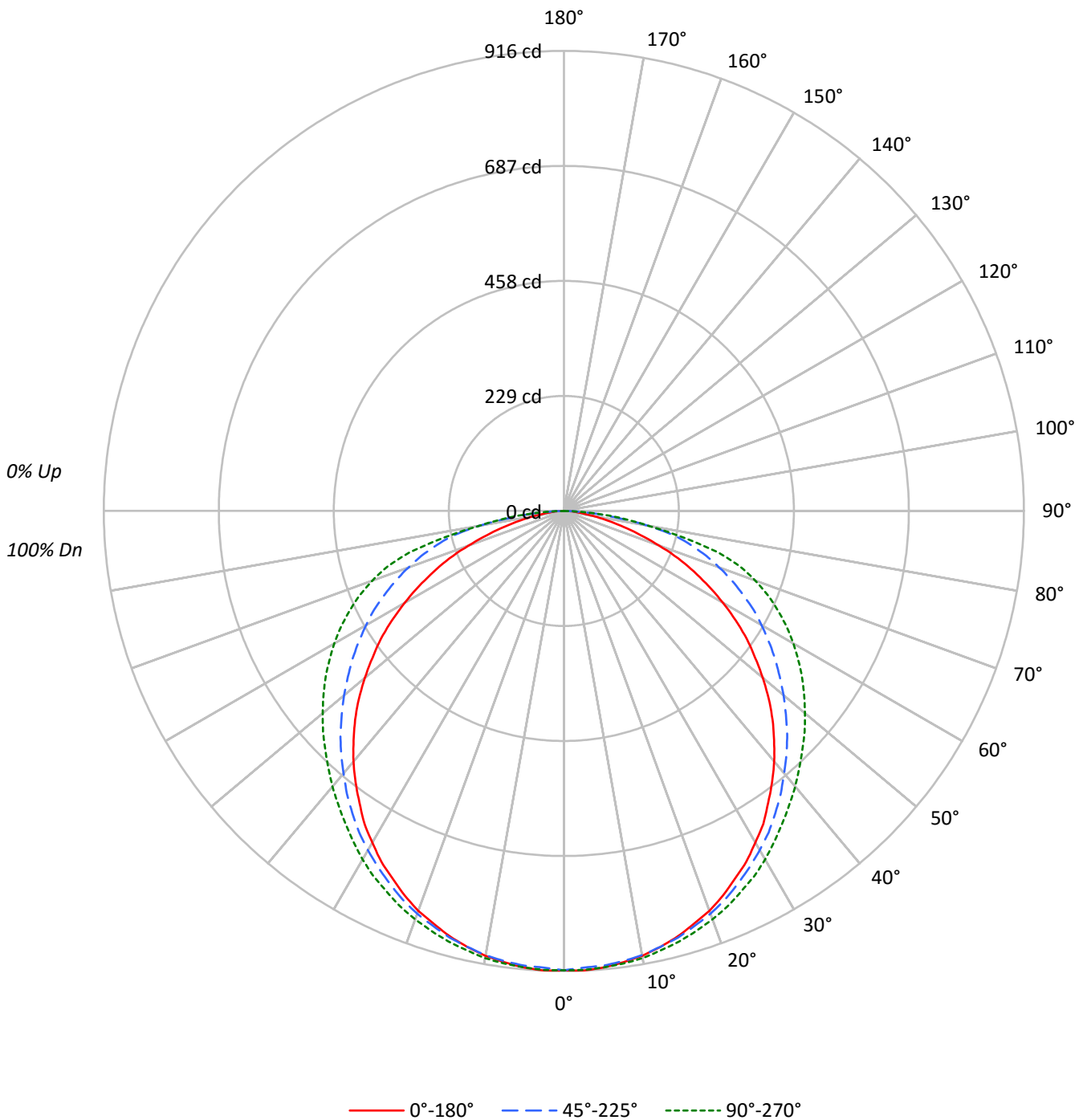
Input Watts (W): 34  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	1231	1231	1231
5°	1232	1227	1232
10°	1229	1227	1235
15°	1221	1225	1236
20°	1213	1222	1239
25°	1198	1216	1241
30°	1184	1212	1245
35°	1165	1206	1246
40°	1144	1198	1258
45°	1118	1197	1278
50°	1082	1196	1312
55°	1044	1204	1359
60°	985	1223	1419
65°	909	1251	1499
70°	794	1295	1597
75°	644	1362	1651
80°	476	1335	1335
85°	364	983	1112



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	86.6	3.1
10°-20°	248.8	8.8
20°-30°	378.8	13.4
30°-40°	459.9	16.3
40°-50°	485.9	17.2
50°-60°	458.5	16.3
60°-70°	381.2	13.5
70°-80°	250.8	8.9
80°-90°	68.4	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°	714.2	25.3
0°-40°	1174.2	41.7
0°-60°	2118.6	75.2
0°-90°	2819.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2819.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	915	915	915	915	915	
5°	912	912	909	912	912	87
15°	877	878	879	888	888	247
25°	807	812	819	833	836	372
35°	709	718	734	753	759	444
45°	588	600	629	660	672	453
55°	445	464	513	562	580	396
65°	286	319	393	451	471	282
75°	124	181	262	310	318	134
85°	24	52	64	71	72	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	914.6	914.6	914.6	914.6	914.6
2.5°	915.8	914.6	909.9	914.6	914.6
5°	912.3	912.3	908.7	912.3	912.3
7.5°	906.4	906.4	904.0	908.7	908.7
10°	899.3	899.3	898.1	904.0	904.0
12.5°	888.7	889.8	888.7	895.7	895.7
15°	876.9	878.0	879.2	887.5	887.5
17.5°	861.5	863.9	866.2	875.7	876.9
20°	847.4	848.5	853.3	863.9	865.1
22.5°	828.5	832.0	837.9	848.5	852.1
25°	807.2	812.0	819.0	833.2	835.6
27.5°	787.2	790.7	800.2	815.5	820.2
30°	762.4	768.3	780.1	795.4	801.3
32.5°	738.8	744.7	758.8	775.4	780.1
35°	709.3	717.5	734.1	752.9	758.8
37.5°	681.0	689.2	709.3	730.5	737.6
40°	651.5	660.9	682.1	706.9	716.4
42.5°	619.6	632.6	656.2	683.3	693.9
45°	587.7	599.5	629.0	659.7	671.5
47.5°	553.5	567.7	599.5	636.1	650.3
50°	516.9	534.6	571.2	611.3	626.7
52.5°	480.3	500.4	541.7	586.5	603.1
55°	444.9	463.8	513.4	561.8	579.5
57.5°	406.0	429.6	483.9	535.8	553.5
60°	365.9	391.8	454.4	508.7	527.5
62.5°	325.7	355.2	426.0	480.3	500.4
65°	285.6	318.6	393.0	450.8	470.9
67.5°	246.7	283.2	362.3	420.1	440.2
70°	201.8	247.8	329.3	385.9	406.0
72.5°	160.5	213.6	297.4	350.5	368.2
75°	123.9	180.6	262.0	310.4	317.5
77.5°	90.9	147.5	225.4	241.9	243.1
80°	61.4	118.0	172.3	169.9	172.3
82.5°	40.1	88.5	108.6	121.6	122.7
85°	23.6	51.9	63.7	70.8	72.0
87.5°	11.8	17.7	22.4	23.6	26.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)