

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: METALUX

Report Number: P474453

Luminaire Tested: **24CZ2-145VHE-HRP-UNV-L835-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474453  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-145VHE-HRP-UNV-L835-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ HRP  
INSERT  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11753.2 lumens  
Efficiency: N/A  
Efficacy: 111.6 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

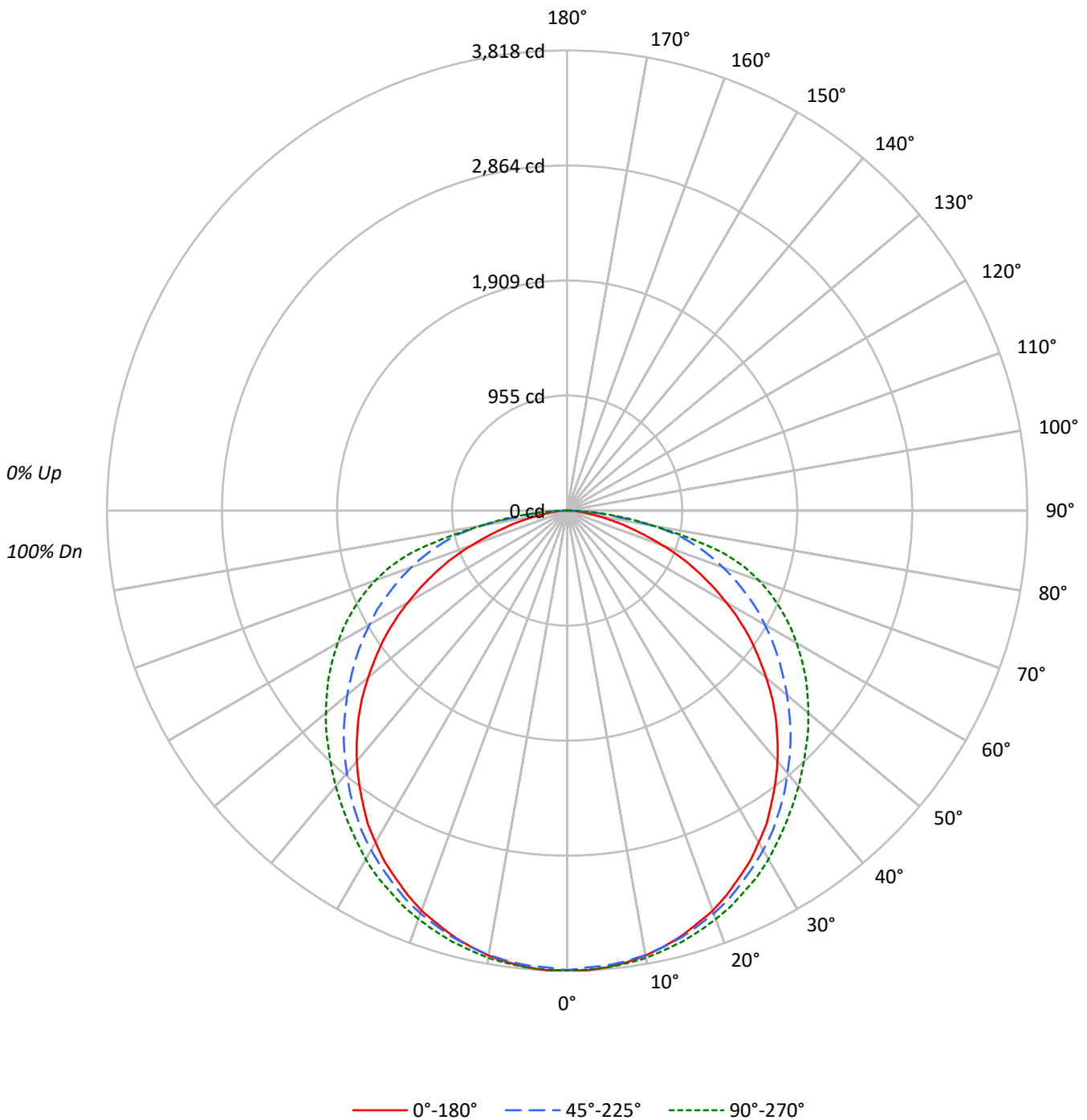
Input Watts (W): 105.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	5131	5131	5131
5°	5137	5117	5137
10°	5122	5116	5149
15°	5092	5106	5154
20°	5059	5093	5164
25°	4996	5070	5172
30°	4938	5053	5191
35°	4857	5027	5197
40°	4770	4996	5246
45°	4662	4990	5327
50°	4512	4985	5469
55°	4351	5020	5667
60°	4104	5098	5918
65°	3791	5217	6251
70°	3310	5400	6659
75°	2686	5678	6881
80°	1984	5568	5568
85°	1521	4100	4631



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	361.2	3.1
10°-20°	1037.3	8.8
20°-30°	1579.2	13.4
30°-40°	1917.5	16.3
40°-50°	2025.9	17.2
50°-60°	1911.7	16.3
60°-70°	1589.5	13.5
70°-80°	1045.7	8.9
80°-90°	285.0	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°	2977.8	25.3
0°-40°	4895.4	41.7
0°-60°	8832.9	75.2
0°-90°	11753.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11753.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3813	3813	3813	3813	3813	
5°	3804	3804	3789	3804	3804	361
15°	3656	3661	3666	3700	3700	1031
25°	3365	3385	3415	3474	3484	1552
35°	2957	2992	3060	3139	3164	1851
45°	2450	2500	2622	2750	2800	1887
55°	1855	1934	2140	2342	2416	1652
65°	1191	1329	1639	1880	1964	1177
75°	517	753	1092	1294	1324	557
85°	98	217	266	295	300	120
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3813.3	3813.3	3813.3	3813.3	3813.3
2.5°	3818.3	3813.3	3793.6	3813.3	3813.3
5°	3803.7	3803.7	3788.6	3803.7	3803.7
7.5°	3779.0	3779.0	3768.9	3788.6	3788.6
10°	3749.2	3749.2	3744.6	3768.9	3768.9
12.5°	3705.2	3709.8	3705.2	3734.5	3734.5
15°	3655.7	3660.8	3665.8	3700.2	3700.2
17.5°	3592.1	3601.7	3611.8	3650.7	3655.7
20°	3533.0	3537.6	3557.3	3601.7	3606.7
22.5°	3454.2	3468.9	3493.6	3537.6	3552.7
25°	3365.4	3385.1	3414.8	3473.9	3483.5
27.5°	3282.0	3296.7	3336.1	3400.2	3419.9
30°	3178.5	3203.3	3252.2	3316.4	3341.1
32.5°	3080.0	3104.8	3163.9	3232.5	3252.2
35°	2957.3	2991.7	3060.3	3139.1	3163.9
37.5°	2839.1	2873.5	2957.3	3045.7	3075.5
40°	2715.9	2755.3	2844.2	2947.2	2986.6
42.5°	2583.1	2637.1	2735.6	2848.7	2893.2
45°	2450.3	2499.8	2622.5	2750.3	2799.8
47.5°	2307.9	2367.0	2499.8	2652.3	2711.4
50°	2155.4	2229.1	2381.6	2548.8	2612.9
52.5°	2002.9	2086.2	2258.4	2445.2	2514.4
55°	1854.9	1933.7	2140.2	2342.2	2415.9
57.5°	1692.8	1791.3	2017.5	2233.6	2307.9
60°	1525.1	1633.7	1894.3	2120.5	2199.3
62.5°	1358.0	1481.2	1776.1	2002.9	2086.2
65°	1190.8	1328.7	1638.7	1879.6	1963.5
67.5°	1028.2	1180.7	1510.5	1751.9	1835.2
70°	841.3	1033.2	1372.6	1608.9	1692.8
72.5°	669.1	890.8	1239.8	1461.5	1535.2
75°	516.6	753.0	1092.3	1293.8	1323.6
77.5°	378.8	615.1	939.8	1008.5	1013.5
80°	256.0	491.9	718.6	708.5	718.6
82.5°	167.2	369.2	452.5	507.0	511.6
85°	98.5	216.6	265.6	295.4	300.0
87.5°	49.0	73.7	93.4	98.5	108.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)