

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: P474501

Luminaire Tested: **24CZ2-135VHE-HRP-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474501  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-135VHE-HRP-UNV-L840-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ HRP  
INSERT  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11210.4 lumens  
Efficiency: N/A  
Efficacy: 115.8 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

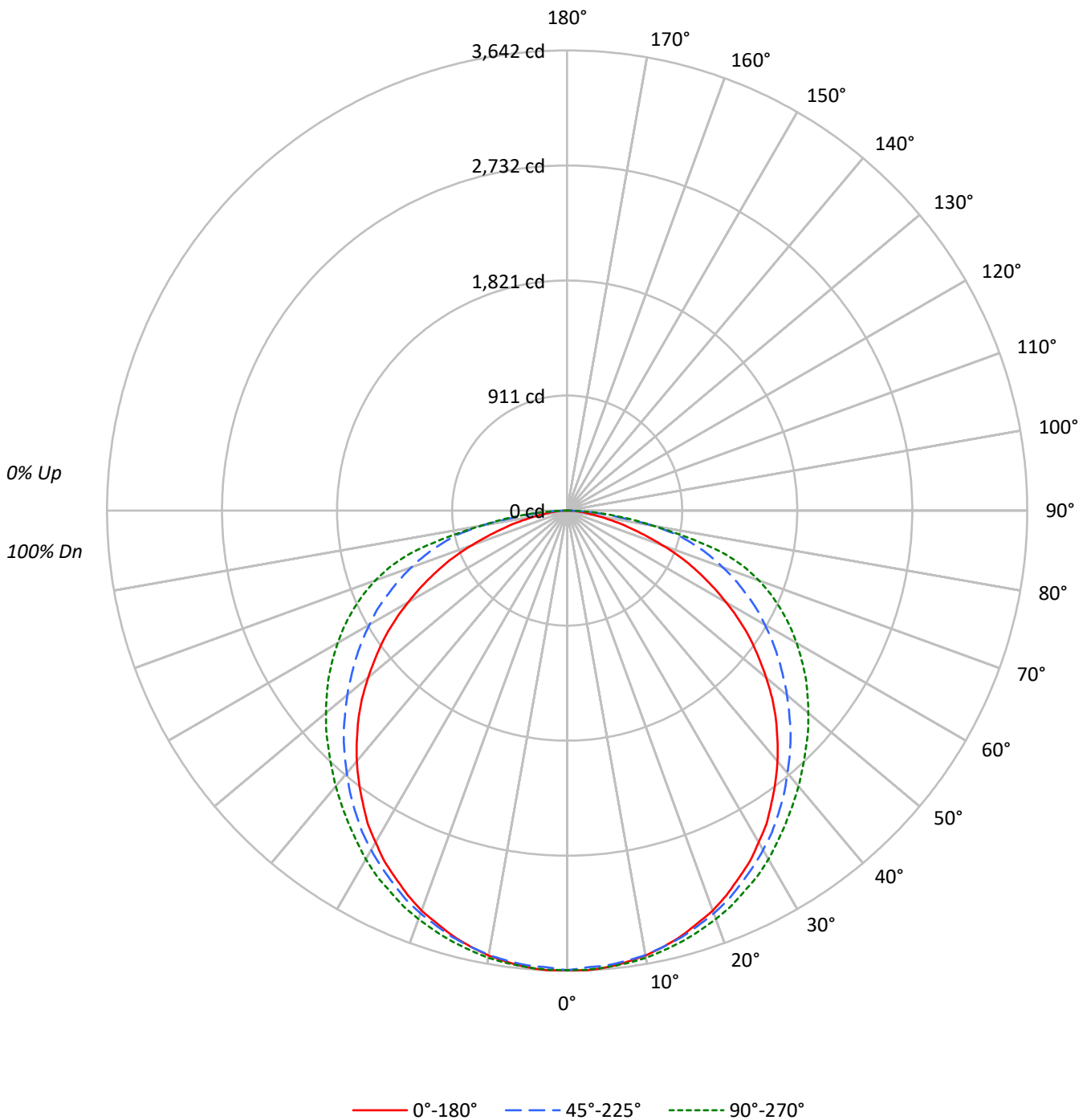
Input Watts (W): 96.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	4894	4894	4894
5°	4900	4881	4900
10°	4886	4880	4911
15°	4857	4870	4916
20°	4825	4858	4926
25°	4765	4835	4933
30°	4710	4819	4951
35°	4633	4795	4957
40°	4550	4765	5003
45°	4447	4760	5081
50°	4303	4755	5217
55°	4150	4789	5406
60°	3915	4862	5645
65°	3616	4976	5962
70°	3157	5150	6352
75°	2562	5416	6563
80°	1892	5311	5311
85°	1450	3912	4417



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	344.5	3.1
10°-20°	989.4	8.8
20°-30°	1506.3	13.4
30°-40°	1829.0	16.3
40°-50°	1932.4	17.2
50°-60°	1823.4	16.3
60°-70°	1516.1	13.5
70°-80°	997.4	8.9
80°-90°	271.9	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°	2840.3	25.3
0°-40°	4669.3	41.7
0°-60°	8425.0	75.2
0°-90°	11210.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11210.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3637	3637	3637	3637	3637	
5°	3628	3628	3614	3628	3628	345
15°	3487	3492	3496	3529	3529	983
25°	3210	3229	3257	3314	3323	1481
35°	2821	2854	2919	2994	3018	1766
45°	2337	2384	2501	2623	2670	1800
55°	1769	1844	2041	2234	2304	1576
65°	1136	1267	1563	1793	1873	1123
75°	493	718	1042	1234	1262	531
85°	94	207	253	282	286	115
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3637.2	3637.2	3637.2	3637.2	3637.2
2.5°	3642.0	3637.2	3618.4	3637.2	3637.2
5°	3628.0	3628.0	3613.6	3628.0	3628.0
7.5°	3604.4	3604.4	3594.8	3613.6	3613.6
10°	3576.0	3576.0	3571.7	3594.8	3594.8
12.5°	3534.1	3538.5	3534.1	3562.1	3562.1
15°	3486.9	3491.7	3496.5	3529.3	3529.3
17.5°	3426.2	3435.4	3445.0	3482.1	3486.9
20°	3369.9	3374.2	3393.0	3435.4	3440.2
22.5°	3294.7	3308.7	3332.3	3374.2	3388.6
25°	3209.9	3228.7	3257.1	3313.5	3322.7
27.5°	3130.5	3144.4	3182.0	3243.2	3262.0
30°	3031.7	3055.3	3102.0	3163.2	3186.8
32.5°	2937.8	2961.4	3017.8	3083.3	3102.0
35°	2820.7	2853.5	2919.0	2994.2	3017.8
37.5°	2708.0	2740.8	2820.7	2905.0	2933.5
40°	2590.5	2628.1	2712.8	2811.1	2848.7
42.5°	2463.8	2515.4	2609.3	2717.2	2759.6
45°	2337.1	2384.3	2501.4	2623.3	2670.5
47.5°	2201.3	2257.7	2384.3	2529.8	2586.2
50°	2055.8	2126.2	2271.6	2431.1	2492.2
52.5°	1910.4	1989.8	2154.1	2332.3	2398.3
55°	1769.2	1844.4	2041.4	2234.1	2304.4
57.5°	1614.6	1708.5	1924.3	2130.5	2201.3
60°	1454.7	1558.2	1806.8	2022.6	2097.7
62.5°	1295.2	1412.8	1694.1	1910.4	1989.8
65°	1135.8	1267.3	1563.1	1792.8	1872.8
67.5°	980.7	1126.2	1440.7	1671.0	1750.4
70°	802.5	985.5	1309.2	1534.6	1614.6
72.5°	638.2	849.7	1182.5	1394.0	1464.3
75°	492.8	718.2	1041.9	1234.1	1262.5
77.5°	361.3	586.7	896.4	961.9	966.7
80°	244.2	469.2	685.4	675.8	685.4
82.5°	159.4	352.1	431.6	483.6	487.9
85°	93.9	206.6	253.4	281.8	286.1
87.5°	46.7	70.3	89.1	93.9	103.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)