

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: P474504

Luminaire Tested: **24CZ2-150VHE-HRP-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474504  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-150VHE-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: 12405.8 lumens  
Efficiency: N/A  
Efficacy: 113.1 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

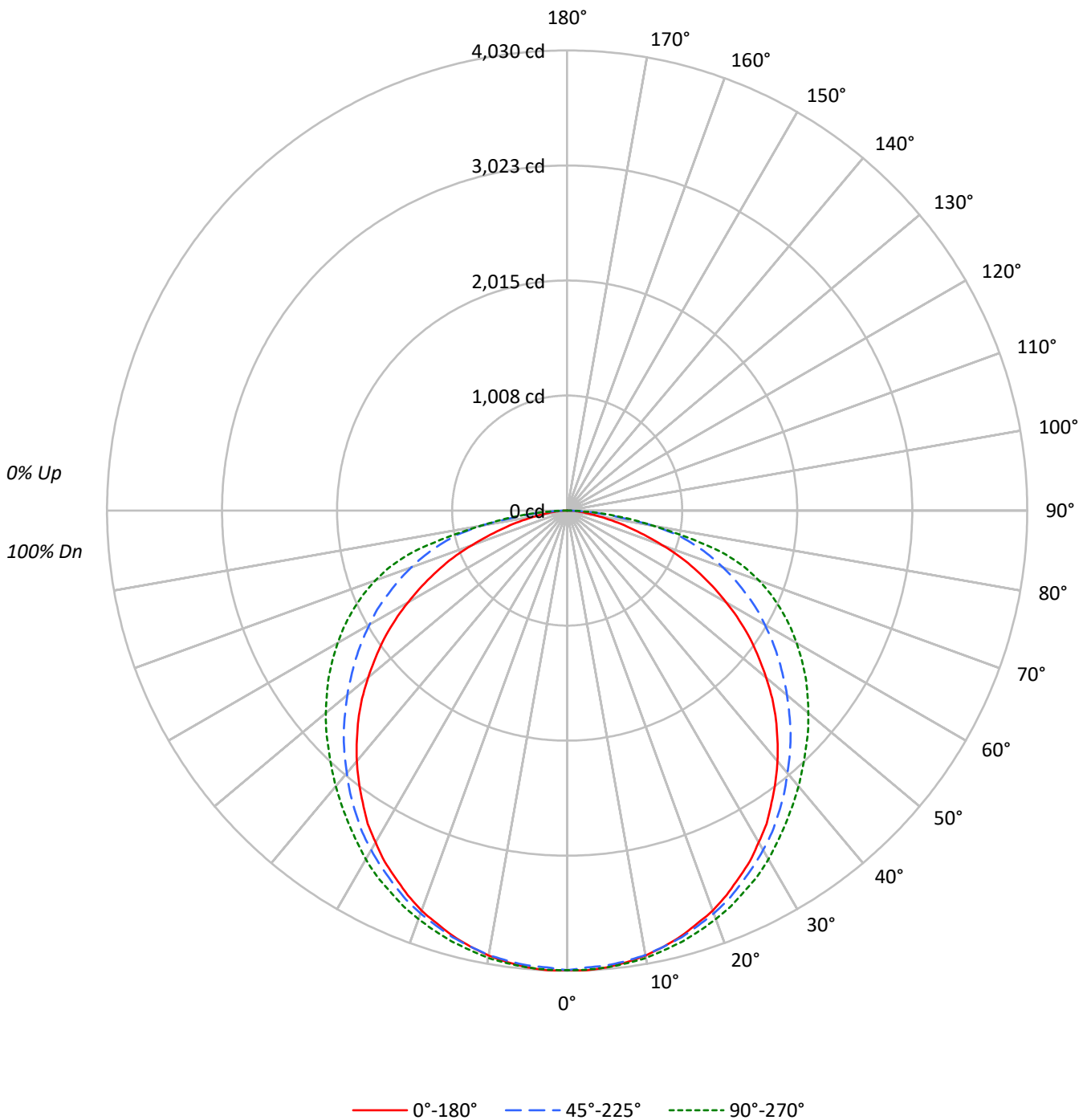
Input Watts (W): 109.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	5416	5416	5416
5°	5423	5401	5423
10°	5407	5400	5435
15°	5375	5390	5440
20°	5340	5376	5451
25°	5274	5351	5459
30°	5212	5333	5479
35°	5127	5306	5485
40°	5035	5273	5537
45°	4921	5267	5623
50°	4762	5262	5773
55°	4593	5299	5982
60°	4332	5381	6247
65°	4002	5507	6598
70°	3494	5700	7029
75°	2835	5994	7263
80°	2094	5877	5877
85°	1604	4329	4888



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	381.3	3.1
10°-20°	1094.9	8.8
20°-30°	1666.9	13.4
30°-40°	2024.0	16.3
40°-50°	2138.4	17.2
50°-60°	2017.8	16.3
60°-70°	1677.7	13.5
70°-80°	1103.8	8.9
80°-90°	300.9	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°	3143.2	25.3
0°-40°	5167.2	41.7
0°-60°	9323.4	75.2
0°-90°	12405.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12405.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4025	4025	4025	4025	4025	
5°	4015	4015	3999	4015	4015	381
15°	3859	3864	3869	3906	3906	1088
25°	3552	3573	3604	3667	3677	1639
35°	3122	3158	3230	3313	3340	1954
45°	2586	2639	2768	2903	2955	1992
55°	1958	2041	2259	2472	2550	1744
65°	1257	1402	1730	1984	2072	1242
75°	545	795	1153	1366	1397	588
85°	104	229	280	312	317	127
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4025.0	4025.0	4025.0	4025.0	4025.0
2.5°	4030.4	4025.0	4004.2	4025.0	4025.0
5°	4014.9	4014.9	3998.9	4014.9	4014.9
7.5°	3988.8	3988.8	3978.1	3998.9	3998.9
10°	3957.3	3957.3	3952.5	3978.1	3978.1
12.5°	3911.0	3915.7	3911.0	3941.9	3941.9
15°	3858.7	3864.0	3869.4	3905.6	3905.6
17.5°	3791.6	3801.7	3812.3	3853.4	3858.7
20°	3729.2	3734.0	3754.8	3801.7	3807.0
22.5°	3646.0	3661.5	3687.6	3734.0	3750.0
25°	3552.2	3573.0	3604.5	3666.8	3676.9
27.5°	3464.3	3479.7	3521.3	3589.0	3609.8
30°	3355.0	3381.1	3432.8	3500.5	3526.6
32.5°	3251.0	3277.2	3339.5	3412.0	3432.8
35°	3121.5	3157.8	3230.3	3313.4	3339.5
37.5°	2996.8	3033.0	3121.5	3214.8	3246.2
40°	2866.7	2908.3	3002.1	3110.9	3152.4
42.5°	2726.5	2783.6	2887.5	3006.9	3053.8
45°	2586.3	2638.6	2768.1	2903.0	2955.2
47.5°	2436.0	2498.4	2638.6	2799.6	2861.9
50°	2275.0	2352.9	2513.8	2690.3	2758.0
52.5°	2114.1	2202.0	2383.8	2581.0	2654.0
55°	1957.9	2041.0	2259.0	2472.3	2550.1
57.5°	1786.8	1890.7	2129.5	2357.7	2436.0
60°	1609.8	1724.4	1999.5	2238.3	2321.4
62.5°	1433.4	1563.4	1874.7	2114.1	2202.0
65°	1256.9	1402.4	1729.7	1984.0	2072.5
67.5°	1085.3	1246.3	1594.3	1849.1	1937.1
70°	888.1	1090.6	1448.8	1698.3	1786.8
72.5°	706.3	940.3	1308.6	1542.6	1620.5
75°	545.3	794.8	1153.0	1365.7	1397.1
77.5°	399.8	649.2	992.0	1064.5	1069.8
80°	270.3	519.2	758.5	747.9	758.5
82.5°	176.4	389.7	477.6	535.2	540.0
85°	103.9	228.7	280.4	311.8	316.6
87.5°	51.7	77.8	98.6	103.9	114.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)