

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: P473907

Luminaire Tested: **24CZ2-165VHE-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P473907  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-165VHE-UNV-L840-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,RIBBED LENS  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

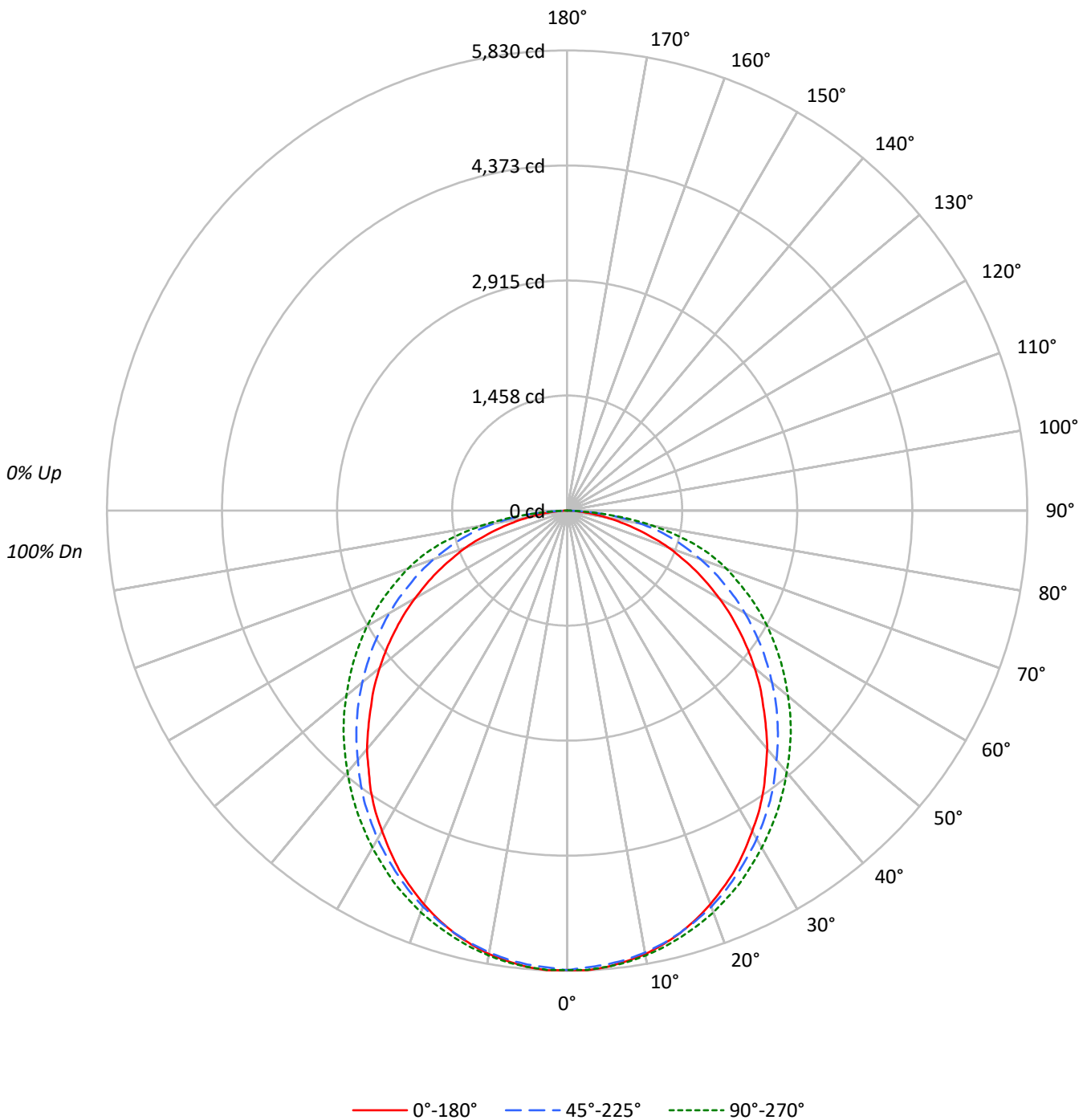
Lumens per Lamp: N/A  
Luminaire Lumens: 16846.9 lumens  
Efficiency: N/A  
Efficacy: 138.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.36  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 122.1  
Input Voltage (V): 120  
Input Current (Ain): 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	99	95	105	101	97	93	97	93	90	93	90	87	89	87	85	83
2	98	89	82	76	95	88	81	75	84	78	74	81	76	72	78	74	70	68
3	89	78	70	63	87	77	69	63	74	67	61	71	65	60	68	63	59	57
4	82	69	60	53	79	68	59	53	65	58	52	63	57	51	61	55	51	48
5	75	62	53	46	73	61	52	46	58	51	45	56	50	44	55	49	44	42
6	69	56	46	40	67	55	46	40	53	45	39	51	44	39	49	43	39	37
7	64	50	41	35	62	50	41	35	48	40	35	47	40	35	45	39	34	32
8	60	46	37	31	58	45	37	31	44	36	31	43	36	31	41	35	31	29
9	56	42	34	28	54	42	34	28	40	33	28	39	33	28	38	32	28	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	36	30	25	23

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7833	7833	7833
5°	7837	7797	7837
10°	7794	7768	7820
15°	7715	7711	7787
20°	7599	7646	7755
25°	7467	7552	7717
30°	7286	7463	7662
35°	7121	7367	7631
40°	6927	7247	7601
45°	6691	7173	7623
50°	6489	7093	7645
55°	6250	7042	7731
60°	5991	7009	7873
65°	5710	6984	8076
70°	5375	7056	8448
75°	4726	7202	8787
80°	3944	7255	8477
85°	2816	6218	6303



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	550.3	3.3
10°-20°	1567.5	9.3
20°-30°	2351.6	14.0
30°-40°	2807.6	16.7
40°-50°	2908.2	17.3
50°-60°	2677.2	15.9
60°-70°	2159.6	12.8
70°-80°	1411.1	8.4
80°-90°	413.7	2.5
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°	4469.5	26.5
0°-40°	7277.1	43.2
0°-60°	12862.5	76.3
0°-90°	16846.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16846.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5822	5822	5822	5822	5822	
5°	5803	5797	5773	5805	5803	551
15°	5539	5539	5536	5590	5590	1561
25°	5030	5040	5087	5179	5198	2313
35°	4336	4374	4485	4608	4646	2708
45°	3516	3604	3770	3938	4006	2718
55°	2664	2779	3002	3222	3296	2385
65°	1794	1916	2194	2444	2537	1774
75°	909	1080	1385	1625	1690	970
85°	182	316	403	427	408	226
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5821.6	5821.6	5821.6	5821.6	5821.6
2.5°	5829.8	5821.6	5791.7	5827.1	5824.4
5°	5802.6	5797.2	5772.7	5805.3	5802.6
7.5°	5759.1	5756.3	5737.3	5772.7	5772.7
10°	5704.6	5699.2	5685.6	5726.4	5723.7
12.5°	5628.4	5625.7	5617.5	5666.5	5663.8
15°	5538.6	5538.6	5535.9	5590.3	5590.3
17.5°	5429.7	5432.4	5443.3	5505.9	5508.7
20°	5307.3	5318.1	5339.9	5410.7	5416.1
22.5°	5168.4	5190.2	5220.2	5299.1	5307.3
25°	5029.6	5040.5	5086.8	5179.3	5198.4
27.5°	4860.9	4888.1	4948.0	5043.3	5062.3
30°	4689.4	4727.5	4803.7	4901.7	4931.7
32.5°	4520.7	4553.4	4643.2	4754.8	4790.1
35°	4335.6	4373.7	4485.3	4607.8	4645.9
37.5°	4131.5	4191.4	4308.4	4449.9	4490.8
40°	3943.7	3998.1	4126.0	4283.9	4327.5
42.5°	3728.7	3796.7	3951.9	4112.4	4166.9
45°	3516.4	3603.5	3769.5	3938.3	4006.3
47.5°	3317.7	3388.5	3584.4	3775.0	3834.8
50°	3100.0	3181.6	3388.5	3589.9	3652.5
52.5°	2885.0	2982.9	3192.5	3404.8	3472.8
55°	2664.5	2778.8	3002.0	3222.5	3295.9
57.5°	2452.2	2566.5	2797.9	3031.9	3108.1
60°	2226.3	2348.8	2604.6	2830.5	2925.8
62.5°	2008.6	2131.1	2400.5	2645.5	2735.3
65°	1793.6	1916.1	2193.7	2444.1	2536.6
67.5°	1570.4	1703.8	2000.4	2242.7	2332.5
70°	1366.3	1494.2	1793.6	2052.1	2147.4
72.5°	1132.2	1284.6	1589.5	1845.3	1935.1
75°	909.0	1080.5	1385.3	1624.8	1690.2
77.5°	702.2	873.7	1178.5	1358.1	1398.9
80°	509.0	683.1	936.3	1061.5	1094.1
82.5°	329.3	509.0	677.7	762.1	773.0
85°	182.4	315.7	402.8	427.3	408.3
87.5°	65.3	119.8	117.0	95.3	76.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)