

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: P474106

Luminaire Tested: **24CZ2-160VHE-S-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474106  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-160VHE-S-UNV-L840-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

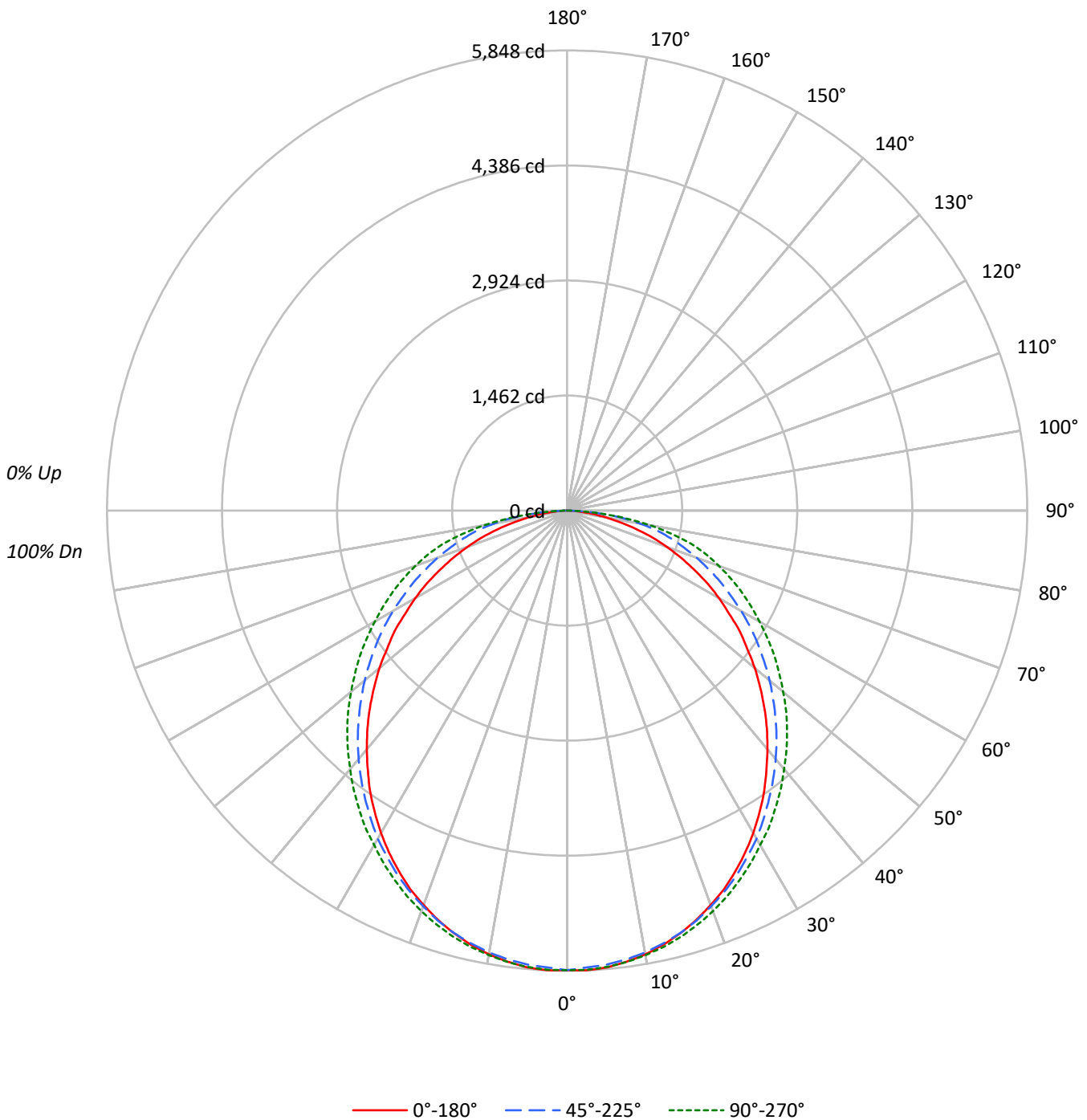
Lumens per Lamp: N/A  
Luminaire Lumens: 16732.1 lumens  
Efficiency: N/A  
Efficacy: 141.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.25 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 118.5  
Input Voltage (V): 120  
Input Current (Ain): 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	90	83	77	95	88	81	76	84	79	74	81	76	72	78	74	71	68
3	89	78	70	63	87	77	69	63	74	67	62	71	65	61	68	64	59	57
4	82	69	60	54	79	68	60	53	66	58	52	63	57	52	61	55	51	49
5	75	62	53	46	73	61	52	46	59	51	45	57	50	45	55	49	44	42
6	69	56	47	40	67	55	46	40	53	45	40	51	44	39	50	44	39	37
7	64	51	42	35	63	50	41	35	48	41	35	47	40	35	45	39	34	32
8	60	46	38	32	58	45	37	31	44	37	31	43	36	31	42	35	31	29
9	56	42	34	28	54	42	34	28	41	33	28	39	33	28	38	32	28	26
10	52	39	31	26	51	39	31	26	38	30	26	37	30	25	36	30	25	24

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

	0°	45°	90°
0°	7858	7858	7858
5°	7869	7821	7862
10°	7825	7791	7837
15°	7745	7741	7806
20°	7638	7662	7756
25°	7512	7577	7695
30°	7353	7481	7622
35°	7169	7349	7579
40°	6956	7241	7535
45°	6746	7128	7520
50°	6518	7030	7502
55°	6286	6944	7543
60°	5998	6878	7596
65°	5679	6851	7779
70°	5298	6887	8055
75°	4715	7087	8487
80°	3855	7240	8284
85°	2716	6322	6448



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	552.1	3.3
10°-20°	1572.6	9.4
20°-30°	2357.2	14.1
30°-40°	2807.5	16.8
40°-50°	2894.8	17.3
50°-60°	2641.5	15.8
60°-70°	2112.3	12.6
70°-80°	1379.7	8.2
80°-90°	414.3	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°	4481.9	26.8
0°-40°	7289.5	43.6
0°-60°	12825.9	76.7
0°-90°	16732.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16732.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5840	5840	5840	5840	5840	
5°	5826	5816	5791	5826	5821	553
15°	5560	5563	5557	5604	5604	1567
25°	5060	5068	5104	5178	5183	2329
35°	4364	4395	4474	4587	4614	2726
45°	3545	3609	3746	3903	3952	2734
55°	2680	2757	2960	3155	3216	2387
65°	1784	1905	2152	2364	2443	1769
75°	907	1058	1363	1583	1632	964
85°	176	316	410	418	418	223
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5840.2	5840.2	5840.2	5840.2	5840.2
2.5°	5848.5	5840.2	5810.0	5845.7	5840.2
5°	5826.5	5815.5	5790.8	5826.5	5821.0
7.5°	5782.5	5777.0	5752.3	5793.5	5788.0
10°	5727.6	5722.1	5702.8	5744.0	5735.8
12.5°	5650.6	5647.9	5634.1	5683.6	5678.1
15°	5559.9	5562.7	5557.2	5603.9	5603.9
17.5°	5455.5	5452.7	5463.7	5521.4	5515.9
20°	5334.5	5337.3	5351.0	5417.0	5417.0
22.5°	5208.1	5205.4	5235.6	5301.6	5307.1
25°	5059.7	5068.0	5103.7	5177.9	5183.4
27.5°	4900.3	4914.0	4958.0	5043.2	5051.5
30°	4732.7	4749.1	4815.1	4894.8	4905.8
32.5°	4548.5	4584.2	4644.7	4746.4	4773.9
35°	4364.4	4394.6	4474.3	4587.0	4614.5
37.5°	4161.0	4210.5	4301.2	4424.8	4460.6
40°	3960.4	4009.8	4122.5	4251.7	4290.2
42.5°	3757.0	3809.2	3938.4	4084.0	4125.3
45°	3545.4	3608.6	3746.0	3902.7	3952.1
47.5°	3328.2	3402.5	3550.9	3721.3	3776.2
50°	3113.9	3188.1	3358.5	3534.4	3583.8
52.5°	2883.0	2976.5	3157.9	3347.5	3397.0
55°	2679.6	2756.6	2960.0	3155.1	3215.6
57.5°	2440.5	2545.0	2762.1	2960.0	3017.7
60°	2228.9	2325.1	2556.0	2756.6	2822.6
62.5°	2014.5	2113.5	2344.3	2572.5	2632.9
65°	1783.7	1904.6	2152.0	2363.6	2443.3
67.5°	1563.8	1690.2	1943.1	2168.4	2250.9
70°	1346.7	1475.9	1750.7	1981.6	2047.5
72.5°	1132.3	1267.0	1552.8	1778.2	1855.1
75°	907.0	1058.1	1363.2	1583.0	1632.5
77.5°	695.3	863.0	1170.8	1319.2	1354.9
80°	497.5	681.6	934.4	1041.6	1069.1
82.5°	327.1	505.7	698.1	755.8	747.6
85°	175.9	316.1	409.5	417.7	417.7
87.5°	68.7	126.4	129.2	98.9	93.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)