

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: P474707

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

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474707  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-165VHE-SQR-UNV-L840-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SQUARE LENS  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

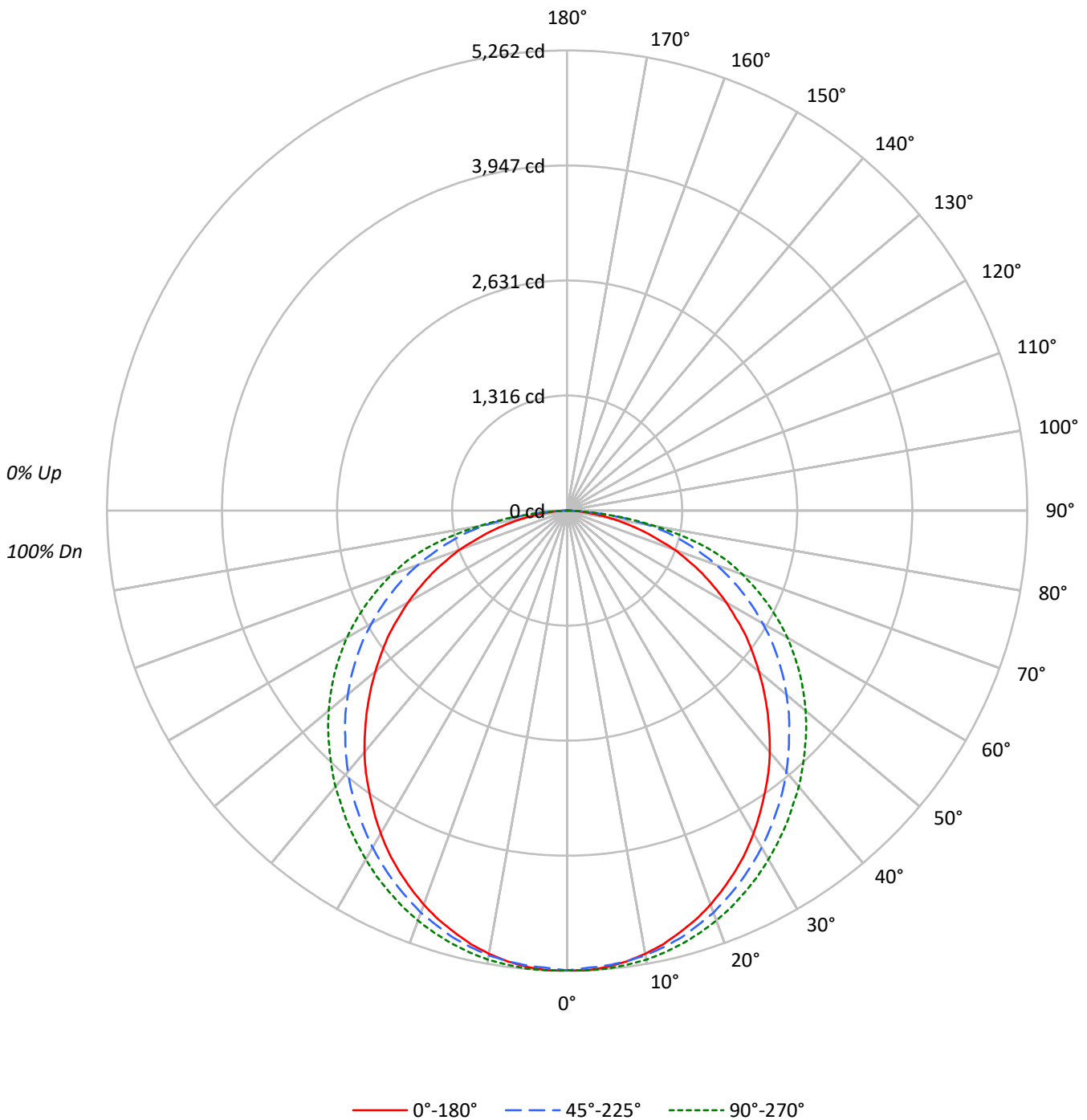
Lumens per Lamp: N/A  
Luminaire Lumens: 16005.7 lumens  
Efficiency: N/A  
Efficacy: 131.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 122.1  
Input Voltage (V): 120  
Input Current (Ain): 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	98	94	105	101	96	93	96	93	90	92	90	87	89	87	84	82
2	98	89	82	76	95	87	81	75	84	78	73	80	76	71	77	73	70	68
3	89	78	69	62	86	76	68	62	73	66	61	70	64	60	68	63	59	56
4	81	69	59	53	79	67	59	52	65	57	51	62	56	51	60	55	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	39	50	43	38	49	43	38	36
7	64	50	41	34	62	49	40	34	47	40	34	46	39	34	44	38	33	31
8	59	45	37	31	58	45	36	31	43	36	30	42	35	30	41	35	30	28
9	55	42	33	28	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	25	35	29	24	23

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

	0°	45°	90°
0°	14148	14148	14148
5°	14146	14105	14202
10°	14058	14107	14247
15°	13906	14077	14269
20°	13730	14008	14287
25°	13507	13909	14289
30°	13245	13825	14310
35°	12945	13743	14364
40°	12665	13698	14480
45°	12320	13663	14636
50°	11989	13703	14902
55°	11709	13796	15236
60°	11312	13900	15661
65°	10860	14067	16136
70°	10301	14264	16779
75°	9225	14463	17334
80°	7767	14503	15732
85°	5764	10973	10343



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	498.2	3.1
10°-20°	1427.8	8.9
20°-30°	2161.5	13.5
30°-40°	2614.8	16.3
40°-50°	2760.1	17.2
50°-60°	2602.8	16.3
60°-70°	2145.8	13.4
70°-80°	1407.7	8.8
80°-90°	387.1	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°	4087.6	25.5
0°-40°	6702.3	41.9
0°-60°	12065.1	75.4
0°-90°	16005.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16005.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5257	5257	5257	5257	5257	
5°	5237	5237	5222	5257	5257	497
15°	4991	5020	5053	5112	5122	1408
25°	4549	4605	4685	4782	4812	2095
35°	3940	4043	4183	4327	4373	2467
45°	3237	3383	3590	3782	3846	2498
55°	2496	2672	2941	3161	3248	2223
65°	1706	1910	2209	2445	2534	1684
75°	887	1115	1391	1611	1667	938
85°	187	322	355	345	335	232
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5257.4	5257.4	5257.4	5257.4	5257.4
2.5°	5262.5	5257.4	5234.3	5265.0	5262.5
5°	5236.9	5236.9	5221.6	5257.4	5257.4
7.5°	5201.1	5203.7	5198.5	5239.5	5239.5
10°	5144.8	5155.1	5162.7	5208.8	5213.9
12.5°	5078.4	5096.3	5111.6	5167.9	5173.0
15°	4991.4	5019.6	5052.8	5111.6	5121.8
17.5°	4901.9	4935.2	4971.0	5047.7	5060.5
20°	4794.5	4832.9	4891.7	4968.4	4988.9
22.5°	4674.3	4728.0	4789.4	4881.5	4907.0
25°	4549.0	4605.3	4684.6	4781.7	4812.4
27.5°	4413.5	4480.0	4569.5	4682.0	4715.3
30°	4262.7	4339.4	4449.3	4569.5	4605.3
32.5°	4104.1	4193.6	4316.4	4449.3	4490.2
35°	3940.5	4042.7	4183.4	4326.6	4372.6
37.5°	3779.4	3881.6	4047.9	4198.7	4242.2
40°	3605.5	3718.0	3899.5	4060.6	4122.0
42.5°	3421.4	3554.3	3746.1	3925.1	3983.9
45°	3237.3	3383.0	3590.1	3781.9	3845.8
47.5°	3050.6	3211.7	3439.3	3633.6	3707.8
50°	2863.9	3035.3	3273.1	3482.7	3559.5
52.5°	2674.7	2853.7	3112.0	3334.4	3403.5
55°	2495.7	2672.1	2940.6	3160.6	3247.5
57.5°	2288.6	2488.0	2771.9	2994.3	3078.7
60°	2101.9	2296.3	2582.7	2817.9	2910.0
62.5°	1899.9	2099.4	2401.1	2636.4	2725.8
65°	1705.6	1910.1	2209.3	2444.6	2534.1
67.5°	1495.9	1710.7	2017.5	2245.1	2332.1
70°	1309.2	1511.2	1813.0	2045.7	2132.6
72.5°	1081.6	1311.8	1600.7	1830.9	1925.5
75°	887.3	1114.9	1391.1	1611.0	1667.2
77.5°	682.7	910.3	1183.9	1327.1	1365.5
80°	501.2	716.0	935.9	1012.6	1015.2
82.5°	337.5	526.8	652.1	690.4	685.3
85°	186.7	322.2	355.4	345.2	335.0
87.5°	76.7	107.4	86.9	61.4	48.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)