

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: P474484

Luminaire Tested: **24CZ2-40VHE-HRP-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474484  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-40VHE-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: 3343.3 lumens  
Efficiency: N/A  
Efficacy: 122.5 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

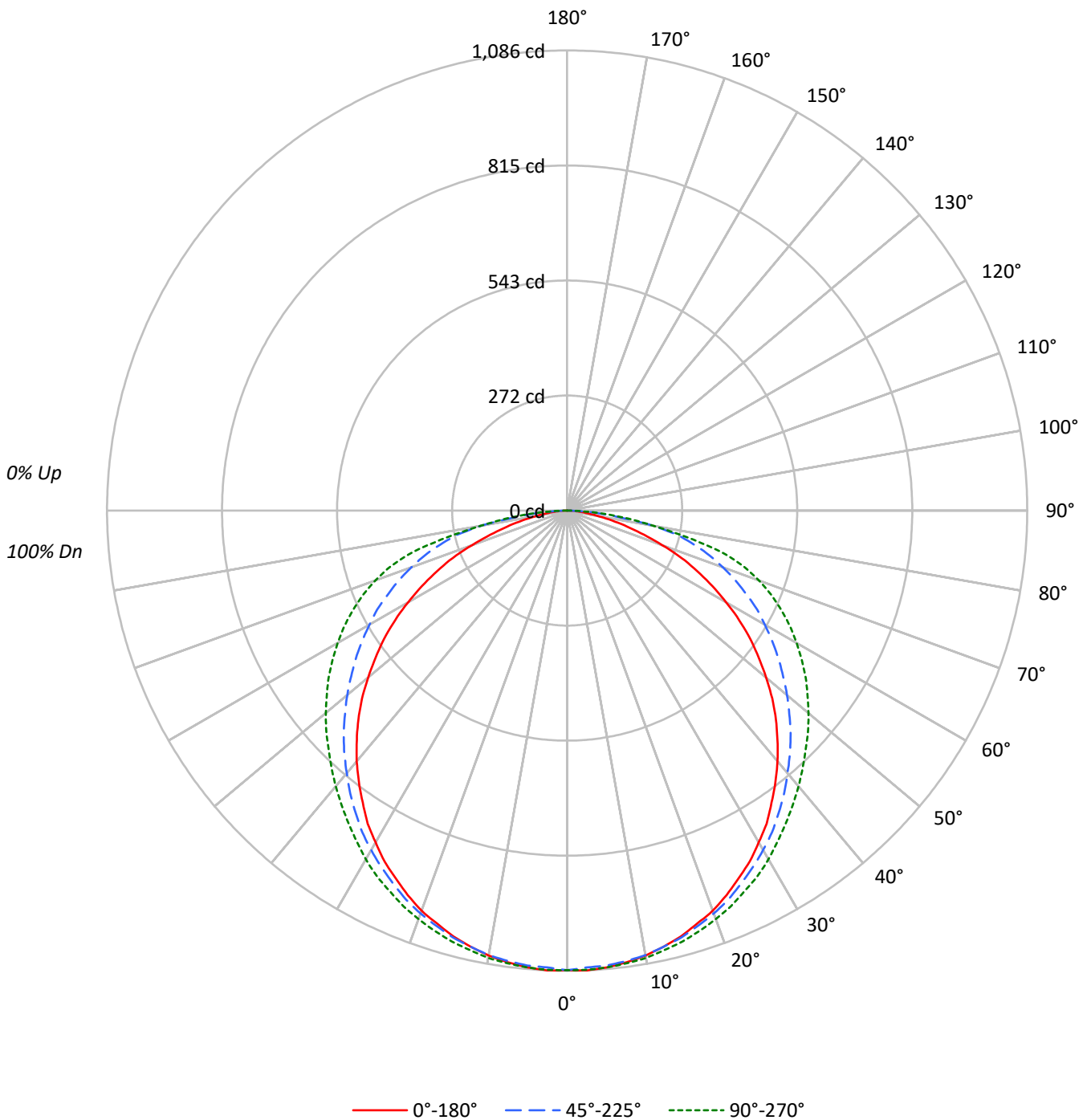
Input Watts (W): 27.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	1459	1459	1459
5°	1461	1456	1461
10°	1457	1455	1465
15°	1449	1453	1466
20°	1439	1449	1469
25°	1421	1442	1471
30°	1405	1437	1477
35°	1382	1430	1478
40°	1357	1421	1492
45°	1326	1419	1515
50°	1283	1418	1556
55°	1238	1428	1612
60°	1167	1450	1683
65°	1078	1484	1778
70°	941	1536	1894
75°	764	1615	1957
80°	564	1584	1584
85°	432	1167	1317



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.8	3.1
10°-20°	295.1	8.8
20°-30°	449.2	13.4
30°-40°	545.5	16.3
40°-50°	576.3	17.2
50°-60°	543.8	16.3
60°-70°	452.1	13.5
70°-80°	297.5	8.9
80°-90°	81.1	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°	847.1	25.3
0°-40°	1392.5	41.7
0°-60°	2512.6	75.2
0°-90°	3343.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3343.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1085	1085	1085	1085	1085	
5°	1082	1082	1078	1082	1082	103
15°	1040	1041	1043	1053	1053	293
25°	957	963	971	988	991	442
35°	841	851	870	893	900	527
45°	697	711	746	782	796	537
55°	528	550	609	666	687	470
65°	339	378	466	535	558	335
75°	147	214	311	368	376	158
85°	28	62	76	84	85	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1084.7	1084.7	1084.7	1084.7	1084.7
2.5°	1086.2	1084.7	1079.1	1084.7	1084.7
5°	1082.0	1082.0	1077.7	1082.0	1082.0
7.5°	1075.0	1075.0	1072.1	1077.7	1077.7
10°	1066.5	1066.5	1065.2	1072.1	1072.1
12.5°	1054.0	1055.3	1054.0	1062.3	1062.3
15°	1039.9	1041.3	1042.8	1052.6	1052.6
17.5°	1021.8	1024.5	1027.4	1038.5	1039.9
20°	1005.0	1006.3	1011.9	1024.5	1026.0
22.5°	982.6	986.8	993.8	1006.3	1010.6
25°	957.3	962.9	971.4	988.2	990.9
27.5°	933.6	937.8	949.0	967.2	972.8
30°	904.2	911.2	925.1	943.4	950.4
32.5°	876.1	883.2	900.0	919.5	925.1
35°	841.2	851.0	870.5	893.0	900.0
37.5°	807.6	817.4	841.2	866.4	874.9
40°	772.6	783.8	809.1	838.4	849.6
42.5°	734.8	750.2	778.2	810.4	823.0
45°	697.0	711.1	746.0	782.3	796.4
47.5°	656.5	673.3	711.1	754.5	771.3
50°	613.1	634.1	677.5	725.0	743.3
52.5°	569.7	593.4	642.4	695.6	715.3
55°	527.6	550.1	608.8	666.3	687.2
57.5°	481.5	509.5	573.9	635.4	656.5
60°	433.8	464.7	538.8	603.2	625.6
62.5°	386.3	421.3	505.2	569.7	593.4
65°	338.7	378.0	466.2	534.7	558.5
67.5°	292.5	335.9	429.7	498.3	522.0
70°	239.3	293.9	390.5	457.7	481.5
72.5°	190.3	253.4	352.7	415.7	436.7
75°	147.0	214.2	310.7	368.0	376.5
77.5°	107.7	175.0	267.3	286.9	288.3
80°	72.8	139.9	204.4	201.5	204.4
82.5°	47.5	105.0	128.7	144.2	145.5
85°	28.0	61.6	75.6	84.0	85.3
87.5°	13.9	21.0	26.6	28.0	30.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)