

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: NEO-RAY

Report Number: P199461

Luminaire Tested: **S123-DIP-ULO-2-40-X-X0048-1D-UDD-1-NA-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199461  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P27889 P27889)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123-DIP-ULO-2-40-X-X0048-1D-UDD-1-NA-W  
Description: DEFINE 3-INCH DIRECT/INDIRECT PENDANT LED LUMINAIRE  
UPLIGHT LLO-4000K, NO LENS  
DOWNLIGHT LL2-4000K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5783.4 lumens  
Efficiency: N/A  
Efficacy: 105.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.32  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4.08' x H: 0.38')  
CIE Type: Semi-Direct

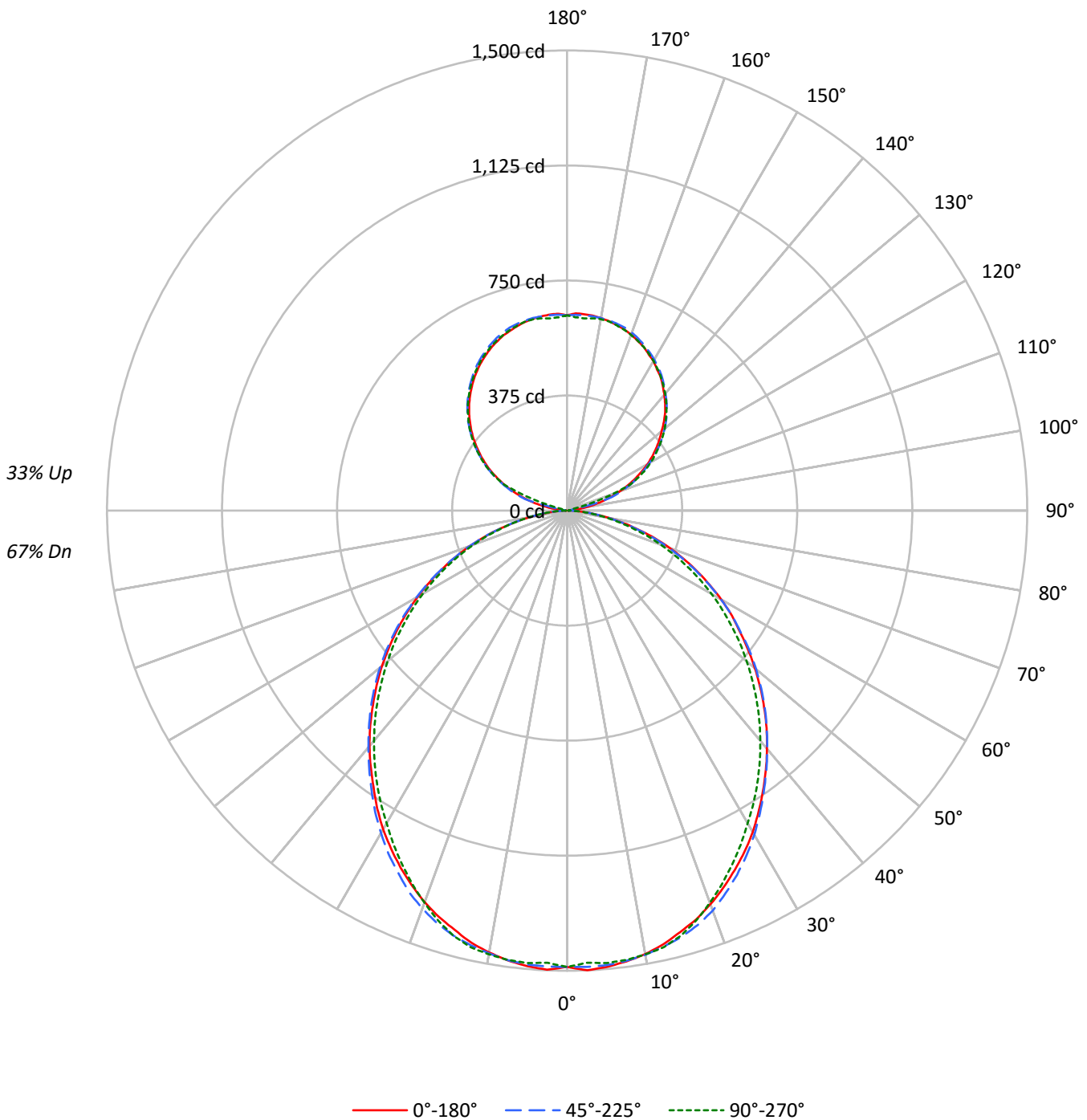
Input Watts (W): 55.1  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	72	72	72	67
1	102	97	93	90	96	92	88	85	82	79	77	72	70	69	64	62	61	57
2	93	85	79	73	87	80	75	70	72	67	63	64	60	57	56	54	51	48
3	85	75	67	61	79	71	64	59	63	58	53	56	52	48	50	46	44	40
4	77	66	58	52	73	63	55	50	56	50	46	50	45	42	44	41	38	35
5	71	59	51	45	67	56	49	43	50	44	39	45	40	36	40	36	33	30
6	66	53	45	39	62	50	43	37	45	39	34	41	36	32	36	32	29	26
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26	23
8	56	44	36	30	53	42	34	29	38	32	27	34	29	25	31	26	23	21
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21	19
10	49	37	29	24	46	35	28	24	32	26	22	29	24	21	26	22	19	17

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

	0°	90°	180°
0°	15685	15685	15685
5°	15674	13851	15652
10°	15466	12438	15411
15°	15155	11164	15079
20°	14829	9875	14751
25°	14419	8713	14327
30°	13988	7678	13869
35°	13471	6792	13309
40°	12955	5970	12809
45°	12407	5209	12224
50°	11814	4495	11645
55°	11157	3817	10972
60°	10555	3188	10236
65°	9747	2559	9359
70°	8742	1951	8284
75°	7330	1345	6796
80°	5482	804	4903
85°	3105	344	2745



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	141.0	2.4
10°-20°	402.6	7.0
20°-30°	595.0	10.3
30°-40°	692.5	12.0
40°-50°	695.0	12.0
50°-60°	608.3	10.5
60°-70°	449.3	7.8
70°-80°	245.4	4.2
80°-90°	63.4	1.1
90°-100°	15.3	0.3
100°-110°	104.8	1.8
110°-120°	250.7	4.3
120°-130°	324.5	5.6
130°-140°	352.2	6.1
140°-150°	333.4	5.8
150°-160°	272.3	4.7
160°-170°	176.9	3.1
170°-180°	60.7	1.0
0°-30°	1138.7	19.7
0°-40°	1831.2	31.7
0°-60°	3134.4	54.2
0°-90°	3892.5	67.3
90°-120°	370.7	6.4
90°-150°	1380.9	23.9
90°-180°	1891.0	32.7
0°-180°	5783.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1488	1488	1488	1488	1488	
5°	1493	1488	1480	1485	1491	142
15°	1422	1439	1434	1434	1415	401
25°	1292	1310	1273	1303	1284	595
35°	1114	1118	1082	1112	1100	697
45°	908	912	873	904	895	701
55°	686	690	652	683	675	616
65°	468	462	432	451	449	462
75°	242	236	218	223	224	257
85°	53	57	52	51	46	61
90°	3	6	4	5	2	5
95°	19	8	9	9	23	25
105°	120	118	18	138	130	128
115°	244	254	256	260	252	240
125°	354	366	367	367	360	316
135°	452	460	458	460	452	348
145°	531	536	532	537	528	332
155°	589	595	589	595	586	271
165°	626	631	625	631	623	177
175°	642	639	629	639	641	61
180°	636	636	636	636	636	



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CATALOG NUMBER: S123-DIP-ULO-2-40-X-X0048-1D-UDD-1-NA-W

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1487.5	1487.5	1487.5	1487.5	1487.5	1487.5	1487.5	1487.5	1487.5
2.5°	1499.9	1484.4	1488.5	1486.5	1475.1	1486.5	1487.5	1483.4	1497.8
5°	1492.7	1479.3	1487.5	1484.4	1480.3	1484.4	1485.4	1477.2	1490.6
7.5°	1482.4	1471.0	1480.3	1479.3	1477.2	1479.3	1478.2	1466.9	1479.3
10°	1467.9	1457.6	1470.0	1472.0	1468.9	1471.0	1465.8	1454.5	1462.7
12.5°	1448.3	1440.0	1455.5	1459.6	1457.6	1458.6	1451.4	1434.9	1443.1
15°	1422.5	1418.4	1439.0	1442.1	1433.8	1439.0	1433.8	1413.2	1415.3
17.5°	1397.7	1393.6	1416.3	1412.2	1400.8	1409.1	1410.1	1387.4	1389.4
20°	1365.7	1363.6	1387.4	1375.0	1360.5	1370.9	1380.2	1357.4	1358.5
22.5°	1330.6	1332.7	1350.2	1332.7	1318.2	1328.5	1346.1	1324.4	1322.3
25°	1292.4	1298.6	1310.0	1289.3	1272.8	1284.2	1302.7	1290.3	1284.2
27.5°	1253.2	1262.5	1266.6	1242.9	1226.3	1237.7	1261.4	1253.2	1242.9
30°	1209.8	1221.2	1220.2	1195.4	1176.8	1189.2	1214.0	1212.9	1199.5
32.5°	1162.3	1177.8	1169.6	1145.8	1130.3	1139.6	1164.4	1167.5	1152.0
35°	1113.8	1130.3	1118.0	1095.2	1081.8	1091.1	1111.8	1121.1	1100.4
37.5°	1064.3	1080.8	1066.3	1044.7	1031.2	1040.5	1060.2	1071.5	1051.9
40°	1013.7	1029.2	1014.7	996.1	979.6	990.0	1007.5	1019.9	1002.3
42.5°	962.1	978.6	963.1	944.5	927.0	940.4	955.9	968.3	949.7
45°	908.4	926.0	911.5	889.8	873.3	886.7	904.3	914.6	895.0
47.5°	853.7	874.3	857.8	835.1	818.6	832.0	850.6	860.9	842.3
50°	799.0	816.5	804.1	780.4	763.9	776.3	796.9	805.2	787.6
52.5°	743.2	763.9	749.4	725.7	710.2	720.5	740.1	749.4	730.9
55°	686.5	703.0	689.6	669.9	652.4	664.8	683.4	689.6	675.1
57.5°	636.9	649.3	636.9	615.2	598.7	608.0	625.6	633.8	619.4
60°	580.1	591.5	579.1	558.5	544.0	552.3	566.7	577.0	562.6
62.5°	523.4	534.7	520.3	501.7	488.3	497.6	509.9	519.2	505.8
65°	467.6	477.9	462.5	445.9	432.5	441.8	451.1	461.4	449.0
67.5°	410.8	420.1	405.7	389.2	377.8	385.0	393.3	403.6	393.3
70°	355.1	362.3	349.9	334.5	324.1	330.3	337.6	345.8	336.5
72.5°	299.4	308.7	293.2	280.8	271.5	273.6	281.8	288.0	280.8
75°	241.6	247.7	236.4	226.1	217.8	219.9	223.0	232.3	224.0
77.5°	187.9	195.1	185.8	176.5	170.3	172.4	173.4	179.6	171.4
80°	137.3	143.5	137.3	130.1	125.9	127.0	127.0	131.1	122.8
82.5°	91.9	98.1	93.9	88.8	87.7	85.7	85.7	88.8	80.5
85°	52.6	59.9	56.8	52.6	51.6	50.6	50.6	52.6	46.5
87.5°	23.7	28.9	25.8	22.7	20.6	19.6	19.6	22.7	17.5
90°	3.1	7.2	6.2	4.1	4.1	4.1	5.2	6.2	2.1
92.5°	4.1	4.8	4.8	4.8	4.8	5.5	5.9	5.9	7.0
95°	18.8	7.0	8.1	8.8	9.2	9.2	8.8	7.7	22.8
97.5°	39.1	30.9	9.9	11.1	11.8	11.4	10.7	39.4	44.2
100°	63.4	71.8	11.1	12.5	13.3	12.9	12.2	80.7	70.0
102.5°	90.3	100.2	39.8	14.0	14.4	14.0	60.8	108.7	99.8
105°	120.5	128.9	118.3	23.6	18.1	28.7	138.5	137.4	130.4
107.5°	151.1	159.5	161.4	104.6	94.7	109.8	169.5	167.3	162.1
110°	182.4	188.6	192.7	194.5	158.8	197.1	199.7	196.7	192.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	213.7	220.3	224.0	226.6	223.6	228.4	229.2	226.2	222.2
115°	243.9	249.8	253.5	257.5	256.4	258.3	259.7	255.7	252.0
117.5°	272.3	279.6	281.8	285.9	287.4	285.9	287.4	284.1	280.7
120°	302.1	308.0	309.5	313.2	315.0	312.8	314.6	311.7	308.0
122.5°	329.0	334.2	337.8	339.3	341.2	338.6	340.8	337.5	334.2
125°	354.4	359.9	365.5	365.1	366.9	364.0	366.6	362.5	359.6
127.5°	378.7	384.3	390.9	389.8	391.3	388.3	391.6	386.8	384.3
130°	402.3	408.9	414.8	413.4	414.8	412.3	415.2	410.8	408.2
132.5°	427.7	434.0	437.7	436.2	436.2	434.7	438.8	434.0	430.3
135°	452.1	456.1	459.8	457.6	457.6	456.1	460.5	456.1	451.7
137.5°	472.7	477.1	479.7	478.2	478.2	476.4	480.8	476.7	472.3
140°	492.6	496.6	498.8	497.0	497.0	495.5	499.9	496.6	491.8
142.5°	512.1	515.8	518.0	515.1	515.1	513.6	519.1	515.4	509.9
145°	531.3	533.8	536.4	532.0	532.4	530.2	536.8	533.1	527.9
147.5°	545.6	550.4	553.4	548.2	548.2	546.4	553.4	549.7	543.8
150°	562.9	564.8	568.1	563.7	563.3	561.8	568.5	564.4	559.3
152.5°	574.7	579.2	582.1	577.3	576.9	575.1	582.5	578.1	572.9
155°	589.1	590.9	594.6	590.2	589.1	588.4	595.4	589.8	585.8
157.5°	599.4	601.6	606.8	602.7	599.8	600.9	606.4	600.2	596.8
160°	610.1	610.8	616.7	612.7	609.4	610.8	616.4	608.6	607.5
162.5°	619.3	619.7	625.2	620.4	617.8	618.2	624.8	617.1	615.3
165°	625.9	625.2	630.7	626.7	624.8	624.8	630.7	623.7	623.4
167.5°	632.2	631.8	634.4	631.8	631.5	629.6	634.1	629.3	630.4
170°	637.0	635.5	637.0	633.3	633.3	631.5	637.4	633.3	634.8
172.5°	641.4	638.5	638.5	633.3	632.2	631.8	638.8	636.6	638.8
175°	642.5	639.9	638.8	633.3	628.9	632.2	639.2	637.7	641.4
177.5°	643.6	639.6	638.5	631.8	630.7	631.1	638.8	638.1	642.5
180°	636.3	636.3	636.3	636.3	636.3	636.3	636.3	636.3	636.3

(END OF REPORT)