

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: P199431

Luminaire Tested: **S122-DIW-ULO-2-40-0048-1D-UDD-1-NA-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199431  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P27883 P27986)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122-DIW-ULO-2-40-0048-1D-UDD-1-NA-W  
Description: DEFINE 2-INCH DIRECT/INDIRECT WALL LED LUMINAIRE  
UPLIGHT LLO-4000K, NO LENS  
DOWNLIGHT LL2-4000K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

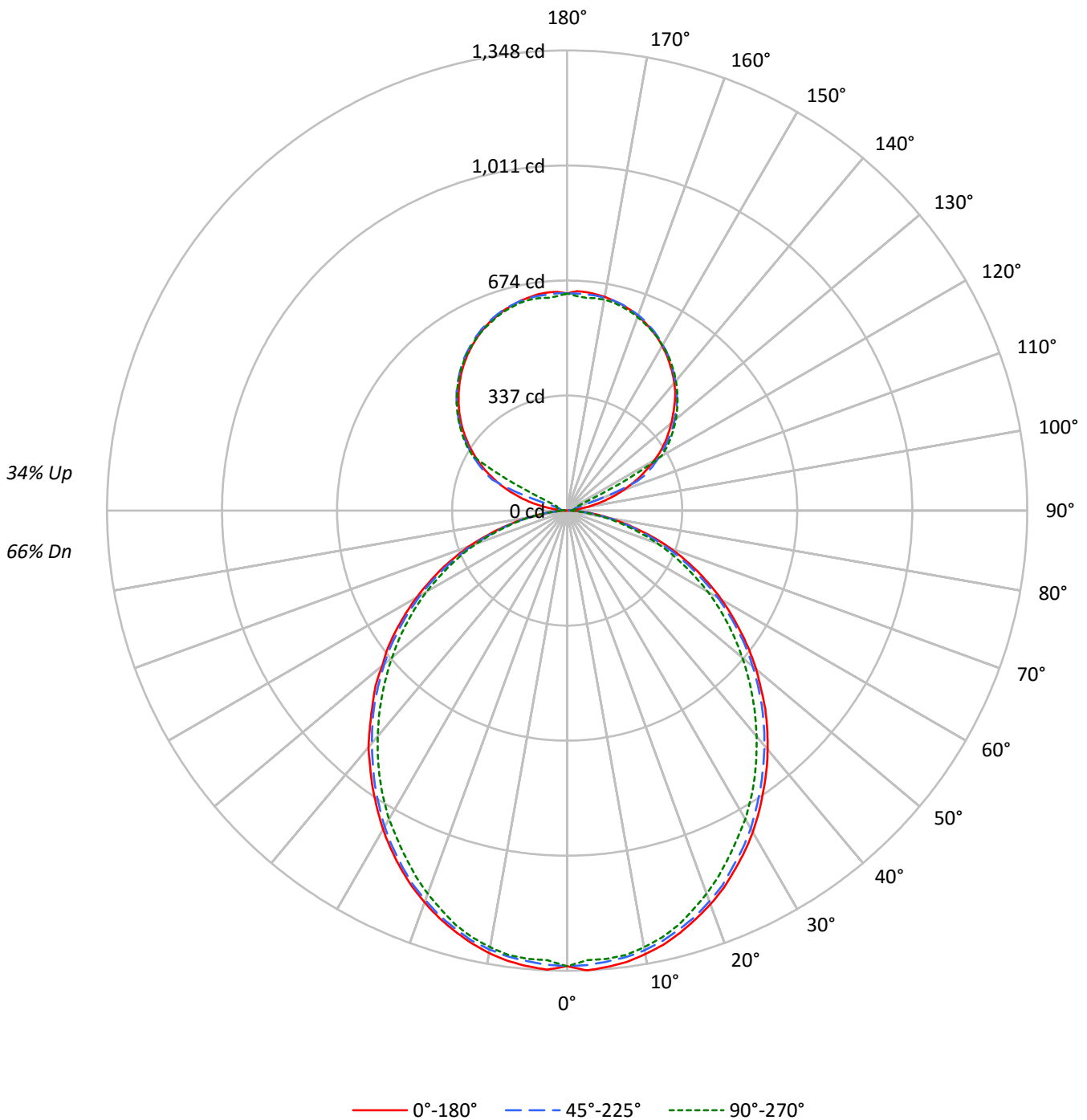
Lumens per Lamp: N/A  
Luminaire Lumens: 5240.6 lumens  
Efficiency: N/A  
Efficacy: 95.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.17 / 1.31  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4.08' x H: 0.38')  
CIE Type: Semi-Direct

Input Watts (W): 55.1  
Input Voltage (V): NR  
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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	70	70	70	66
1	101	97	93	89	95	91	88	85	81	78	76	71	69	67	62	61	60	55
2	92	85	78	73	87	80	74	70	71	67	63	63	59	56	55	52	50	46
3	84	75	67	61	79	70	64	58	63	57	53	55	51	48	49	46	43	39
4	77	66	58	52	72	62	55	49	56	50	45	49	45	41	44	40	37	34
5	71	59	51	44	66	56	48	43	50	44	39	44	39	36	39	35	32	29
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	36	32	28	26
7	61	48	40	34	57	45	38	33	41	35	30	37	31	28	33	28	25	23
8	56	44	36	30	53	41	34	29	37	31	27	34	28	25	30	26	23	20
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	28	23	20	18
10	49	37	29	24	46	35	28	23	32	26	22	29	24	20	26	22	19	17

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

	0°	90°	180°
0°	21110	21110	21110
5°	21136	17486	21103
10°	20850	14932	20801
15°	20455	12844	20374
20°	19990	11051	19889
25°	19434	9538	19330
30°	18869	8290	18708
35°	18183	7174	18016
40°	17513	6170	17354
45°	16813	5279	16516
50°	16026	4477	15682
55°	15148	3749	14897
60°	14254	3074	13888
65°	13169	2414	12716
70°	11816	1815	11244
75°	9867	1222	9207
80°	7354	711	6678
85°	4568	281	3842



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	125.8	2.4
10°-20°	356.2	6.8
20°-30°	525.4	10.0
30°-40°	612.7	11.7
40°-50°	614.0	11.7
50°-60°	537.1	10.2
60°-70°	395.2	7.5
70°-80°	214.2	4.1
80°-90°	54.9	1.0
90°-100°	16.3	0.3
100°-110°	71.4	1.4
110°-120°	207.6	4.0
120°-130°	324.3	6.2
130°-140°	349.7	6.7
140°-150°	330.5	6.3
150°-160°	269.5	5.1
160°-170°	175.4	3.3
170°-180°	60.4	1.2
0°-30°	1007.5	19.2
0°-40°	1620.2	30.9
0°-60°	2771.4	52.9
0°-90°	3435.6	65.6
90°-120°	295.3	5.6
90°-150°	1299.7	24.8
90°-180°	1805.0	34.4
0°-180°	5240.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1335	1335	1335	1335	1335	
5°	1342	1326	1318	1325	1340	127
15°	1280	1270	1257	1268	1275	361
25°	1161	1150	1120	1147	1155	535
35°	1002	989	957	982	993	627
45°	821	806	767	798	806	632
55°	621	610	573	599	611	556
65°	421	405	376	392	407	417
75°	217	206	188	193	202	231
85°	52	48	41	42	43	58
90°	2	5	7	6	1	4
95°	16	12	14	15	27	22
105°	115	24	30	25	135	122
115°	237	257	52	266	254	233
125°	350	361	370	367	359	312
135°	446	455	457	459	450	344
145°	524	529	530	533	526	328
155°	584	588	584	588	584	269
165°	624	624	618	623	623	176
175°	642	636	626	636	641	61
180°	636	636	636	636	636	



TEST NUMBER: P199431

CATALOG NUMBER: S122-DIW-ULO-2-40-0048-1D-UDD-1-NA-W

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7
2.5°	1348.2	1329.6	1332.7	1328.5	1318.2	1327.5	1331.6	1328.5	1346.1
5°	1342.0	1323.4	1326.5	1321.3	1318.2	1321.3	1325.4	1321.3	1339.9
7.5°	1333.7	1313.1	1319.3	1316.2	1313.1	1315.1	1318.2	1311.0	1330.6
10°	1319.3	1298.6	1307.9	1301.7	1298.6	1300.7	1305.8	1295.5	1316.2
12.5°	1302.7	1282.1	1291.4	1284.2	1281.1	1281.1	1290.3	1279.0	1297.6
15°	1280.0	1263.5	1269.7	1262.5	1257.3	1260.4	1267.6	1259.4	1274.9
17.5°	1254.2	1239.8	1247.0	1235.6	1226.3	1233.6	1243.9	1234.6	1250.1
20°	1227.4	1210.9	1218.1	1202.6	1194.3	1200.5	1214.0	1206.7	1221.2
22.5°	1197.4	1182.0	1188.2	1167.5	1159.2	1164.4	1184.0	1176.8	1190.2
25°	1161.3	1148.9	1150.0	1129.3	1120.0	1126.2	1146.9	1142.7	1155.1
27.5°	1126.2	1113.8	1114.9	1091.1	1080.8	1089.1	1109.7	1106.6	1118.0
30°	1088.0	1076.7	1075.6	1051.9	1043.6	1048.8	1069.4	1069.4	1078.7
32.5°	1045.7	1036.4	1031.2	1009.6	1001.3	1007.5	1025.1	1028.1	1035.4
35°	1002.3	996.1	988.9	968.3	956.9	965.2	981.7	985.8	993.1
37.5°	959.0	951.8	943.5	922.9	910.5	920.8	935.2	942.5	947.6
40°	913.6	908.4	899.1	878.5	863.0	873.3	889.8	898.1	905.3
42.5°	867.1	864.0	852.7	831.0	815.5	826.9	844.4	851.6	854.7
45°	820.7	816.5	806.2	783.5	767.0	779.4	798.0	805.2	806.2
47.5°	769.0	770.1	757.7	735.0	718.5	730.9	747.4	757.7	761.8
50°	722.6	723.6	709.2	686.5	669.9	679.2	698.9	709.2	707.1
52.5°	673.0	676.1	660.7	637.9	621.4	630.7	650.3	661.7	662.7
55°	621.4	626.6	610.1	587.4	572.9	582.2	598.7	612.1	611.1
57.5°	571.9	576.0	559.5	538.8	524.4	532.7	547.1	564.7	560.5
60°	522.3	526.5	508.9	488.3	475.9	480.0	496.5	511.0	508.9
62.5°	471.8	475.9	457.3	438.7	424.3	430.5	444.9	462.5	457.3
65°	421.2	424.3	404.7	388.1	375.7	381.9	392.3	410.8	406.7
67.5°	370.6	372.7	355.1	339.6	329.3	332.4	341.7	357.2	355.1
70°	320.0	322.1	305.6	291.1	281.8	284.9	292.1	306.6	304.5
72.5°	268.4	271.5	255.0	241.6	232.3	235.4	240.5	253.9	250.8
75°	216.8	218.8	206.5	196.1	187.9	188.9	193.0	203.4	202.3
77.5°	169.3	174.5	161.0	151.7	145.6	146.6	151.7	156.9	154.8
80°	122.8	129.0	119.7	112.5	107.4	106.3	110.5	114.6	111.5
82.5°	86.7	87.7	81.6	76.4	71.2	71.2	74.3	77.4	74.3
85°	51.6	53.7	48.5	44.4	41.3	40.3	42.3	45.4	43.4
87.5°	24.8	25.8	20.6	18.6	15.5	14.5	15.5	17.5	17.5
90°	2.1	5.2	5.2	6.2	7.2	7.2	6.2	6.2	1.0
92.5°	2.2	5.2	5.2	6.3	6.6	7.7	8.8	9.2	9.9
95°	15.5	11.1	12.5	13.6	14.4	15.5	14.7	13.6	26.9
97.5°	34.6	14.0	17.7	18.4	19.5	19.9	19.9	15.5	49.0
100°	57.8	16.2	21.0	23.9	24.7	24.7	22.5	34.6	75.5
102.5°	85.1	72.2	22.8	26.5	28.0	26.9	23.9	117.5	105.0
105°	114.6	130.1	24.3	28.0	29.5	28.7	25.1	144.8	134.8
107.5°	145.5	157.7	25.8	29.5	30.9	29.8	30.6	172.8	164.7
110°	176.5	186.8	115.7	30.6	32.1	30.6	160.3	201.2	194.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	205.9	216.6	217.4	32.4	32.8	35.0	238.4	229.9	224.4
115°	236.9	245.7	257.2	149.6	52.3	164.7	265.6	258.3	253.5
117.5°	265.3	273.7	282.6	263.1	200.4	286.3	291.8	286.3	281.5
120°	295.1	303.6	309.1	317.9	318.7	318.7	317.6	313.2	308.0
122.5°	324.6	330.1	334.5	343.4	346.3	343.0	342.3	338.2	334.2
125°	350.4	355.5	361.4	367.3	370.3	366.9	367.3	362.2	359.2
127.5°	374.7	379.1	386.8	390.5	393.5	389.8	391.3	385.7	383.5
130°	398.3	401.2	410.1	413.0	415.6	413.4	414.5	408.6	406.7
132.5°	421.5	425.5	432.9	434.0	436.9	433.6	437.7	429.6	428.8
135°	445.8	449.1	454.6	455.0	457.2	455.4	458.7	452.1	449.8
137.5°	468.6	470.1	474.9	473.4	476.7	473.8	478.6	471.9	470.5
140°	488.5	489.6	492.9	493.7	495.9	493.3	497.0	490.4	489.6
142.5°	506.9	508.4	511.4	511.0	513.6	511.0	515.4	509.5	508.8
145°	524.3	526.5	529.1	527.9	529.8	528.3	532.7	526.5	526.1
147.5°	541.6	542.3	546.0	544.2	545.3	543.4	548.2	543.1	542.3
150°	556.7	558.2	560.4	558.2	558.5	557.4	562.2	557.8	557.1
152.5°	571.8	571.4	574.7	570.3	572.2	570.3	575.8	571.4	571.4
155°	583.9	583.6	587.6	582.8	583.6	582.1	588.4	583.2	584.3
157.5°	596.1	594.3	599.1	594.3	592.8	593.9	598.7	593.9	596.1
160°	606.8	604.9	609.4	604.2	603.1	603.8	609.0	604.6	605.3
162.5°	616.0	613.4	617.5	611.9	611.9	610.8	617.5	613.1	615.3
165°	624.1	621.2	624.5	618.9	618.2	617.5	623.4	620.4	622.6
167.5°	630.0	627.1	630.0	623.7	624.5	623.0	628.9	627.1	629.6
170°	635.5	631.8	632.9	627.4	627.4	626.3	632.6	630.7	634.4
172.5°	639.2	635.2	635.2	628.9	627.4	628.2	634.8	634.4	639.6
175°	642.5	637.0	635.5	629.6	625.6	629.3	635.5	636.6	641.4
177.5°	643.3	638.1	636.6	630.0	628.9	629.3	637.0	637.4	641.4
180°	635.9	635.9	635.9	635.9	635.9	635.9	635.9	635.9	635.9

(END OF REPORT)