

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: P199480

Luminaire Tested: **S124-DIW-U1-LO-35-0048-1D-UDD-1-NA-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199480  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P28062 P28061)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124-DIW-U1-LO-35-0048-1D-UDD-1-NA-W  
Description: DEFINE 4-INCH DIRECT/INDIRECT WALL LED LUMINAIRE  
UPLIGHT LL1-3500K, NO LENS  
DOWNLIGHT LLO-3500K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

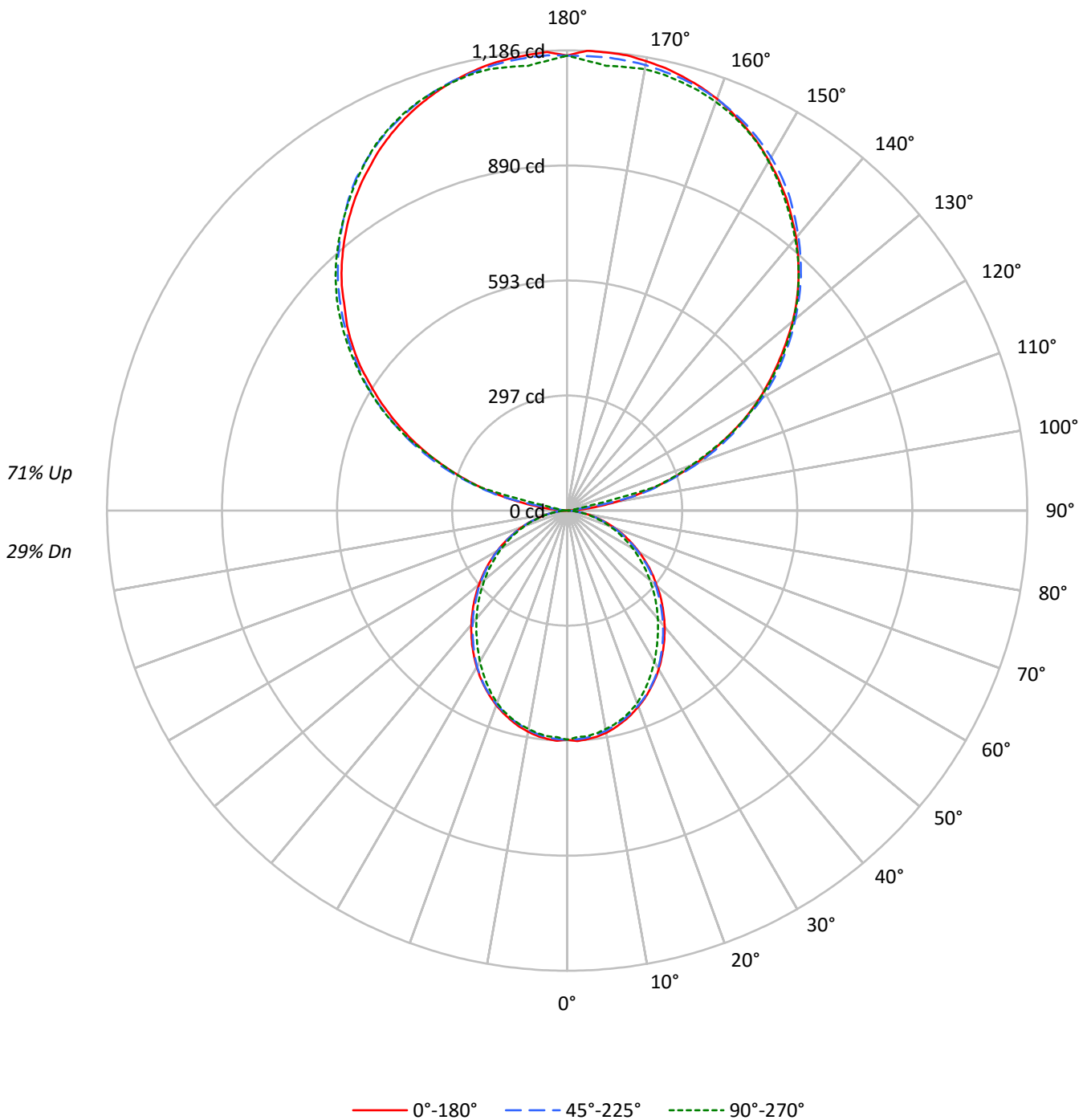
Lumens per Lamp: N/A  
Luminaire Lumens: 4979.1 lumens  
Efficiency: N/A  
Efficacy: 128.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.14 / 1.28  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4.08' x H: 0.38')  
CIE Type: Semi-Indirect

Input Watts (W): 38.8  
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37	29
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	31	25
2	85	78	72	67	76	70	65	61	55	52	49	42	39	37	29	28	27	21
3	77	68	61	56	69	62	56	51	49	44	41	37	34	32	26	24	23	18
4	71	60	53	47	63	54	48	43	43	39	35	33	30	27	23	21	20	15
5	65	54	46	40	58	48	42	37	39	34	30	29	26	23	21	19	17	13
6	60	48	40	35	53	43	37	32	35	30	26	26	23	20	19	17	15	12
7	55	43	36	30	49	39	32	28	31	26	23	24	21	18	17	15	13	10
8	51	39	32	27	46	35	29	24	28	24	20	22	18	16	16	14	12	9
9	47	36	28	24	42	32	26	22	26	21	18	20	17	14	15	12	11	8
10	44	33	26	21	40	30	23	19	24	19	16	19	15	13	13	11	10	8

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

	0°	90°	180°
0°	4668	4668	4668
5°	4660	4217	4652
10°	4594	3832	4575
15°	4495	3487	4472
20°	4380	3150	4348
25°	4241	2808	4202
30°	4095	2487	4042
35°	3920	2191	3865
40°	3746	1929	3681
45°	3557	1689	3488
50°	3345	1461	3285
55°	3155	1250	3072
60°	2918	1047	2834
65°	2684	849	2578
70°	2385	653	2273
75°	2007	460	1859
80°	1506	280	1410
85°	885	124	837



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	55.6	1.1
10°-20°	156.7	3.1
20°-30°	229.5	4.6
30°-40°	263.1	5.3
40°-50°	259.3	5.2
50°-60°	223.5	4.5
60°-70°	163.0	3.3
70°-80°	88.9	1.8
80°-90°	23.3	0.5
90°-100°	29.8	0.6
100°-110°	237.0	4.8
110°-120°	458.6	9.2
120°-130°	596.4	12.0
130°-140°	647.4	13.0
140°-150°	612.6	12.3
150°-160°	499.7	10.0
160°-170°	323.5	6.5
170°-180°	111.3	2.2
0°-30°	441.8	8.9
0°-40°	704.8	14.2
0°-60°	1187.7	23.9
0°-90°	1463.0	29.4
90°-120°	725.4	14.6
90°-150°	2581.7	51.9
90°-180°	3516.0	70.6
0°-180°	4979.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	590	590	590	590	590	
5°	592	588	584	587	591	56
15°	562	558	554	555	560	159
25°	507	505	491	501	502	234
35°	432	428	406	422	426	270
45°	347	340	321	334	340	268
55°	259	254	236	249	252	231
65°	172	168	155	164	165	170
75°	88	85	78	81	82	94
85°	20	20	19	19	19	23
90°	1	1	1	1	1	3
95°	41	10	11	11	37	52
105°	236	242	233	237	229	249
115°	460	472	463	466	449	456
125°	664	678	670	663	652	594
135°	843	852	844	836	822	650
145°	984	996	979	981	963	615
155°	1089	1096	1087	1085	1072	502
165°	1157	1152	1143	1145	1145	327
175°	1185	1172	1151	1172	1179	113
180°	1172	1172	1172	1172	1172	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	590.3	590.3	590.3	590.3	590.3	590.3	590.3	590.3	590.3
2.5°	594.6	587.8	590.0	588.5	584.6	588.5	589.6	587.5	593.9
5°	591.7	585.3	587.5	585.3	583.5	585.0	586.7	584.2	590.7
7.5°	587.5	580.7	582.5	580.7	578.9	580.3	581.4	579.2	586.0
10°	581.4	574.3	576.0	573.9	571.8	573.2	574.3	572.1	578.9
12.5°	572.8	566.0	567.5	566.0	564.3	564.6	565.3	563.2	570.3
15°	562.5	555.7	558.2	556.8	554.3	555.7	555.3	552.8	559.6
17.5°	550.7	544.3	547.1	545.7	542.1	544.3	544.3	540.3	547.5
20°	537.8	531.1	535.0	531.4	527.5	529.6	531.4	526.8	533.9
22.5°	523.6	516.4	521.1	514.6	510.4	512.9	517.1	512.2	518.6
25°	506.8	501.1	505.4	496.4	490.7	494.3	501.1	496.1	502.2
27.5°	490.4	484.7	488.2	478.2	470.4	475.0	483.6	479.3	484.7
30°	472.2	467.5	469.3	457.5	449.3	454.3	464.3	461.8	466.1
32.5°	452.2	448.6	448.6	436.1	427.6	433.3	444.0	443.3	446.1
35°	432.2	430.1	427.6	414.0	405.8	411.1	421.5	424.4	426.1
37.5°	411.9	410.4	405.8	392.6	384.7	390.4	400.1	404.4	405.4
40°	390.8	390.1	383.7	371.2	363.3	369.0	379.0	384.4	384.0
42.5°	369.4	370.1	362.3	350.1	342.3	348.0	357.3	364.4	362.6
45°	347.3	349.4	340.1	329.1	320.9	326.9	334.4	343.3	340.5
47.5°	325.8	328.3	318.7	307.3	299.4	305.9	313.4	323.0	318.7
50°	301.6	306.6	297.3	285.9	278.0	284.1	293.0	301.2	296.2
52.5°	280.5	284.1	275.9	264.8	257.3	262.3	271.2	279.5	274.1
55°	258.8	262.7	254.5	243.4	236.3	241.3	249.1	257.3	252.0
57.5°	235.9	239.8	232.3	222.3	215.6	220.9	229.1	234.8	229.8
60°	213.8	218.8	210.6	200.9	195.2	199.5	205.9	212.7	207.7
62.5°	192.4	197.0	189.2	180.2	174.9	178.8	185.6	190.9	186.3
65°	171.7	174.5	167.7	159.5	154.9	157.4	163.5	169.5	164.9
67.5°	150.6	153.5	146.7	139.5	134.9	137.4	142.4	148.1	143.8
70°	129.2	131.7	126.0	119.6	115.6	118.1	122.8	127.1	123.1
72.5°	108.9	110.6	105.3	100.3	97.4	99.2	102.4	106.4	104.6
75°	88.2	90.3	84.9	80.7	78.2	78.9	81.4	84.6	81.7
77.5°	68.5	70.7	66.4	63.2	61.7	62.1	63.9	66.4	62.8
80°	50.3	52.1	49.6	46.8	45.3	46.0	47.1	48.5	47.1
82.5°	33.9	35.7	33.9	32.1	31.1	31.8	32.1	32.8	31.8
85°	20.0	21.4	20.3	19.3	18.9	18.9	19.3	20.0	18.9
87.5°	8.9	10.0	9.3	8.6	7.5	7.9	8.2	8.9	8.2
90°	0.7	1.8	1.4	1.1	1.1	1.1	1.4	1.8	0.7
92.5°	13.2	6.9	6.9	6.9	6.9	6.9	6.9	7.6	9.0
95°	41.0	26.4	10.4	11.1	11.1	11.1	11.1	18.1	36.8
97.5°	79.9	93.1	20.1	13.2	13.2	13.2	20.1	88.2	74.3
100°	126.4	138.9	101.4	32.0	23.6	29.9	88.9	131.3	120.2
102.5°	178.5	194.5	186.8	104.9	60.4	89.6	181.3	186.1	173.6
105°	236.2	250.0	242.4	245.9	232.7	236.8	236.8	239.6	229.2
107.5°	293.1	304.9	300.7	298.0	287.6	290.3	297.3	295.9	284.1
110°	350.1	361.9	361.9	352.8	340.3	345.2	356.3	349.4	339.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	407.0	416.0	418.1	413.3	398.7	405.6	411.9	400.8	394.5
115°	460.5	473.7	472.3	473.0	462.6	462.6	466.1	457.7	448.7
117.5°	518.1	527.9	525.8	526.5	519.5	516.8	516.1	510.5	500.8
120°	568.8	580.0	581.4	576.5	571.6	566.1	569.5	561.9	551.5
122.5°	616.8	629.3	631.4	626.5	621.6	615.4	618.2	609.8	600.1
125°	664.0	677.9	677.9	674.4	669.6	663.3	662.6	655.7	652.2
127.5°	711.2	727.2	724.4	721.0	716.8	709.8	706.4	702.2	696.6
130°	759.2	770.3	767.5	764.7	761.9	753.6	750.8	746.7	740.4
132.5°	802.9	809.2	810.6	805.0	805.0	794.6	793.9	789.0	777.9
135°	843.2	849.5	852.2	843.9	843.9	833.5	835.6	828.6	821.7
137.5°	881.4	886.3	889.7	880.0	880.7	871.0	874.5	862.7	859.9
140°	918.2	920.3	926.6	916.1	914.7	906.4	911.3	899.5	896.0
142.5°	950.9	953.6	961.3	950.2	946.7	940.4	946.7	932.1	930.0
145°	984.2	984.9	996.0	982.8	978.6	973.8	981.4	964.1	962.7
147.5°	1013.4	1012.0	1025.2	1014.1	1009.9	1005.0	1013.4	993.2	993.2
150°	1040.5	1039.1	1051.6	1042.5	1038.4	1034.2	1039.1	1020.3	1020.3
152.5°	1066.9	1062.0	1074.5	1066.9	1065.5	1059.2	1063.4	1045.3	1048.1
155°	1089.1	1084.2	1096.0	1089.8	1087.0	1082.1	1084.9	1067.5	1071.7
157.5°	1110.6	1103.0	1113.4	1110.6	1105.7	1103.0	1103.0	1089.1	1093.9
160°	1129.4	1120.3	1129.4	1125.2	1121.0	1117.6	1120.3	1106.4	1112.7
162.5°	1144.6	1136.3	1141.2	1135.6	1133.5	1128.0	1133.5	1122.4	1129.4
165°	1157.1	1148.1	1151.6	1143.9	1142.6	1138.4	1145.3	1137.7	1144.6
167.5°	1168.3	1159.9	1158.5	1150.9	1150.9	1145.3	1153.7	1149.5	1156.5
170°	1175.9	1169.0	1166.2	1155.1	1155.1	1150.2	1162.0	1158.5	1166.9
172.5°	1183.5	1174.5	1169.6	1157.8	1153.0	1153.7	1168.3	1165.5	1173.8
175°	1184.9	1178.0	1172.4	1159.9	1150.9	1157.1	1171.7	1172.4	1178.7
177.5°	1186.3	1179.4	1172.4	1162.0	1160.6	1159.2	1174.5	1173.8	1182.8
180°	1172.4	1172.4	1172.4	1172.4	1172.4	1172.4	1172.4	1172.4	1172.4

(END OF REPORT)