

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: P199505

Luminaire Tested: **S124-DIW-ULO-1-40-0048-1D-UDD-1-5-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199505  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P28062 P28062)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124-DIW-ULO-1-40-0048-1D-UDD-1-5-W  
Description: DEFINE 4-INCH DIRECT/INDIRECT WALL LED LUMINAIRE  
UPLIGHT LLO-4000K, SATIN WHITE DIFFUSER  
DOWNLIGHT LL1-4000K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

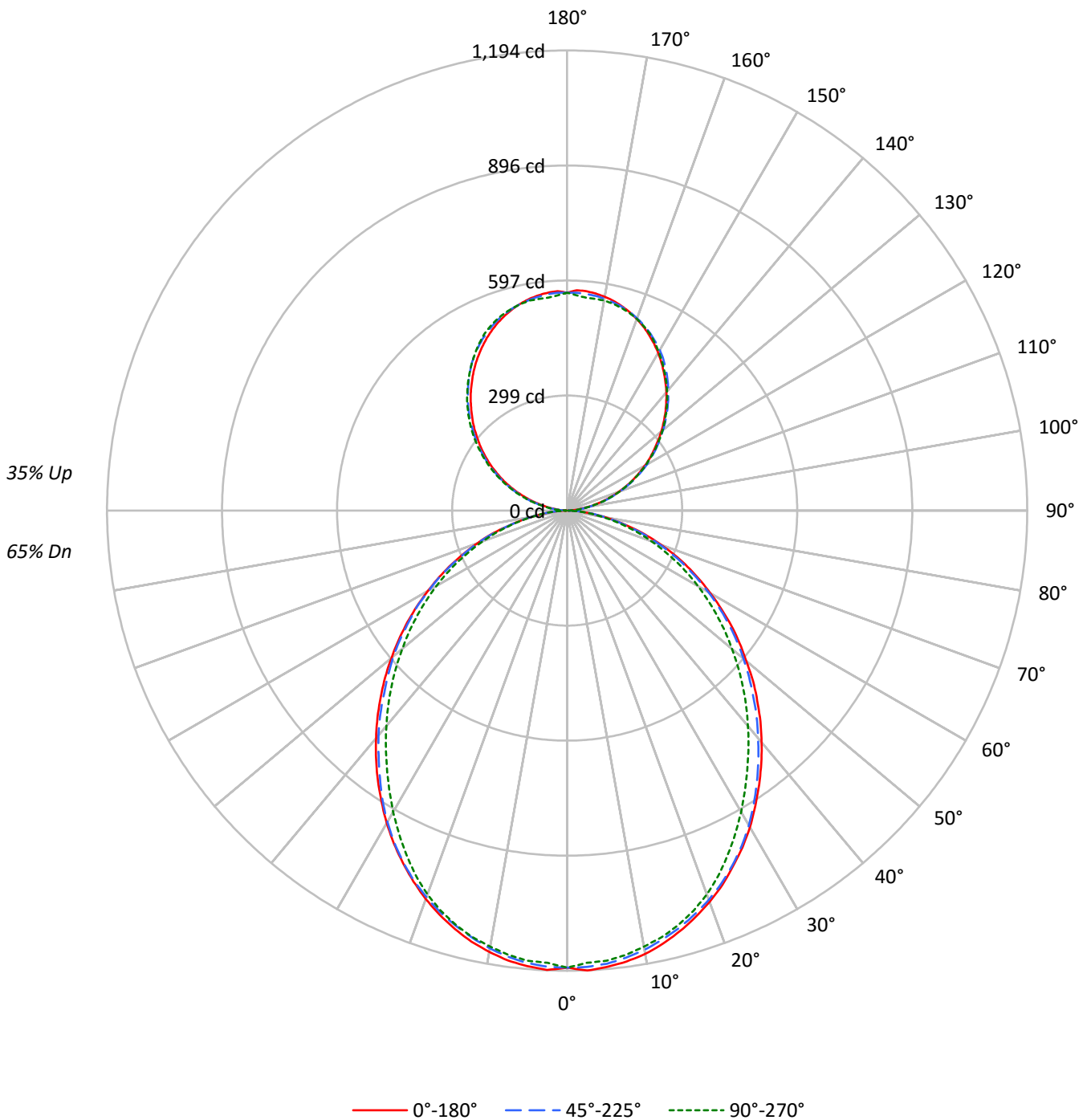
Lumens per Lamp: N/A  
Luminaire Lumens: 4499.6 lumens  
Efficiency: N/A  
Efficacy: 112.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.14 / 1.28  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4.08' x H: 0.38')  
CIE Type: Semi-Direct

Input Watts (W): 40.1  
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	65
1	101	97	93	89	95	91	88	85	81	78	76	71	69	67	62	61	60	55
2	92	85	79	73	87	80	74	70	71	67	63	63	59	57	55	53	50	46
3	84	75	67	61	79	71	64	58	63	57	53	55	51	48	49	46	43	39
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37	34
5	71	59	51	45	67	56	49	43	50	44	39	45	40	36	39	36	32	30
6	66	53	45	39	61	50	43	37	45	39	34	40	35	32	36	32	29	26
7	61	48	40	34	57	46	38	33	41	35	31	37	32	28	33	29	26	23
8	56	44	36	31	53	42	34	29	38	32	27	34	29	25	30	26	23	21
9	53	40	33	27	50	38	31	26	35	29	24	31	26	23	28	24	21	19
10	49	37	30	25	46	35	28	24	32	26	22	29	24	21	26	22	19	17

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

	0°	90°	180°
0°	9378	9378	9378
5°	9362	8472	9345
10°	9230	7697	9190
15°	9029	7005	8983
20°	8799	6327	8735
25°	8519	5643	8441
30°	8226	4997	8120
35°	7876	4402	7766
40°	7525	3876	7395
45°	7146	3393	7006
50°	6719	2936	6599
55°	6336	2510	6170
60°	5861	2104	5694
65°	5392	1706	5178
70°	4791	1313	4568
75°	4030	923	3737
80°	3027	562	2833
85°	1780	249	1682



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	111.7	2.5
10°-20°	314.8	7.0
20°-30°	461.1	10.2
30°-40°	528.5	11.7
40°-50°	521.0	11.6
50°-60°	449.1	10.0
60°-70°	327.4	7.3
70°-80°	178.6	4.0
80°-90°	46.9	1.0
90°-100°	29.3	0.7
100°-110°	105.4	2.3
110°-120°	186.5	4.1
120°-130°	248.0	5.5
130°-140°	278.9	6.2
140°-150°	274.2	6.1
150°-160°	231.4	5.1
160°-170°	153.5	3.4
170°-180°	53.5	1.2
0°-30°	887.5	19.7
0°-40°	1416.0	31.5
0°-60°	2386.1	53.0
0°-90°	2939.0	65.3
90°-120°	321.2	7.1
90°-150°	1122.2	24.9
90°-180°	1561.0	34.7
0°-180°	4499.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1186	1186	1186	1186	1186	
5°	1189	1180	1172	1179	1187	113
15°	1130	1121	1114	1116	1124	318
25°	1018	1015	986	1007	1009	469
35°	868	859	815	847	856	543
45°	698	683	645	672	684	538
55°	520	511	475	500	506	464
65°	345	337	311	328	331	341
75°	177	171	157	164	164	188
85°	40	41	38	39	38	46
90°	1	3	2	3	1	4
95°	24	27	26	25	19	27
105°	98	102	101	99	91	104
115°	188	193	190	187	180	186
125°	276	282	279	275	267	247
135°	360	367	364	361	350	278
145°	437	447	440	440	427	274
155°	503	508	507	503	494	232
165°	549	548	544	544	542	155
175°	571	564	554	564	568	54
180°	565	565	565	565	565	



TEST NUMBER: P199505

CATALOG NUMBER: S124-DIW-ULO-1-40-0048-1D-UDD-1-5-W

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1185.9	1185.9	1185.9	1185.9	1185.9	1185.9	1185.9	1185.9	1185.9
2.5°	1194.5	1180.9	1185.2	1182.3	1174.4	1182.3	1184.5	1180.2	1193.1
5°	1188.8	1175.9	1180.2	1175.9	1172.3	1175.1	1178.7	1173.7	1186.6
7.5°	1180.2	1166.5	1170.1	1166.5	1163.0	1165.8	1168.0	1163.7	1177.3
10°	1168.0	1153.6	1157.2	1152.9	1148.6	1151.5	1153.6	1149.3	1163.0
12.5°	1150.8	1137.1	1140.0	1137.1	1133.6	1134.3	1135.7	1131.4	1145.7
15°	1130.0	1116.3	1121.4	1118.5	1113.5	1116.3	1115.6	1110.6	1124.2
17.5°	1106.3	1093.4	1099.1	1096.3	1089.1	1093.4	1093.4	1085.5	1099.9
20°	1080.5	1066.9	1074.8	1067.6	1059.7	1064.0	1067.6	1058.3	1072.6
22.5°	1051.8	1037.5	1046.8	1033.9	1025.3	1030.3	1038.9	1028.9	1041.8
25°	1018.1	1006.6	1015.3	997.3	985.9	993.0	1006.6	996.6	1008.8
27.5°	985.1	973.7	980.8	960.8	945.0	954.3	971.5	962.9	973.7
30°	948.6	939.3	942.8	919.2	902.7	912.7	932.8	927.8	936.4
32.5°	908.4	901.3	901.3	876.2	858.9	870.4	891.9	890.5	896.2
35°	868.3	864.0	858.9	831.7	815.2	826.0	846.8	852.5	856.1
37.5°	827.4	824.5	815.2	788.7	772.9	784.4	803.7	812.3	814.5
40°	785.1	783.7	770.8	745.7	729.9	741.4	761.4	772.2	771.5
42.5°	742.1	743.5	727.7	703.4	687.6	699.1	717.7	732.0	728.5
45°	697.6	701.9	683.3	661.1	644.6	656.8	671.8	689.7	684.0
47.5°	654.6	659.6	640.3	617.3	601.6	614.5	629.5	648.9	640.3
50°	605.9	615.9	597.2	574.3	558.5	570.7	588.6	605.1	595.1
52.5°	563.6	570.7	554.2	532.0	516.9	527.0	544.9	561.4	550.6
55°	519.8	527.7	511.2	489.0	474.6	484.7	500.5	516.9	506.2
57.5°	473.9	481.8	466.8	446.7	433.1	443.8	460.3	471.8	461.7
60°	429.5	439.5	423.0	403.7	392.2	400.8	413.7	427.3	417.3
62.5°	386.5	395.8	380.0	362.1	351.3	359.2	372.8	383.6	374.3
65°	344.9	350.6	337.0	320.5	311.2	316.2	328.4	340.6	331.2
67.5°	302.6	308.3	294.7	280.3	271.0	276.0	286.1	297.5	288.9
70°	259.5	264.6	253.1	240.2	232.3	237.3	246.6	255.2	247.4
72.5°	218.7	222.3	211.5	201.5	195.7	199.3	205.8	213.7	210.1
75°	177.1	181.4	170.6	162.0	157.0	158.5	163.5	169.9	164.2
77.5°	137.7	142.0	133.4	126.9	124.0	124.8	128.3	133.4	126.2
80°	101.1	104.7	99.7	93.9	91.1	92.5	94.6	97.5	94.6
82.5°	68.1	71.7	68.1	64.5	62.4	63.8	64.5	66.0	63.8
85°	40.2	43.0	40.9	38.7	38.0	38.0	38.7	40.2	38.0
87.5°	17.9	20.1	18.6	17.2	15.1	15.8	16.5	17.9	16.5
90°	1.4	3.6	2.9	2.2	2.2	2.2	2.9	3.6	1.4
92.5°	11.1	12.5	12.9	11.8	11.8	11.4	10.7	10.3	6.6
95°	24.3	26.5	26.9	26.9	26.2	25.4	24.7	22.8	18.8
97.5°	39.4	42.0	42.7	42.0	42.4	41.6	39.8	37.9	33.9
100°	56.7	60.1	60.8	60.1	60.4	58.6	57.8	56.0	51.2
102.5°	75.9	79.9	80.3	79.6	79.6	78.1	77.4	75.2	70.4
105°	97.6	102.1	102.4	100.9	100.9	99.5	98.7	96.5	91.0
107.5°	119.7	124.2	124.2	122.7	122.7	121.6	120.1	118.6	113.1
110°	142.6	146.3	147.0	145.2	144.8	143.7	142.2	140.0	135.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	165.4	169.1	169.8	167.6	167.3	165.1	164.7	162.1	157.3
115°	188.3	191.9	193.1	190.5	189.7	187.2	187.2	184.6	180.2
117.5°	210.4	214.8	215.9	212.9	212.6	210.4	208.9	206.7	201.9
120°	232.5	238.0	238.7	235.4	235.1	232.5	231.7	228.8	224.0
122.5°	254.6	260.1	261.2	258.3	257.2	253.8	253.5	250.9	245.7
125°	275.6	281.8	281.8	280.4	279.3	276.7	275.2	272.3	267.1
127.5°	297.3	303.9	303.6	302.5	301.4	297.7	296.6	293.6	288.1
130°	318.7	324.6	324.6	323.8	323.1	319.8	317.9	315.0	308.7
132.5°	339.7	345.6	346.3	344.5	343.7	339.3	339.7	336.0	329.7
135°	360.3	365.5	367.3	364.4	364.0	359.2	360.7	355.9	349.6
137.5°	380.6	384.6	387.9	384.3	383.9	379.1	381.3	375.1	369.5
140°	400.5	403.8	408.2	403.8	403.1	398.6	400.8	394.2	389.4
142.5°	419.3	422.2	427.7	422.9	421.8	417.8	420.4	412.6	408.2
145°	437.3	439.5	446.9	441.7	440.3	436.6	439.9	430.3	427.0
147.5°	455.4	456.5	464.9	460.2	457.9	455.0	458.3	447.6	445.1
150°	472.3	472.3	480.8	477.1	475.3	471.9	474.2	463.8	462.0
152.5°	488.2	487.4	495.2	492.9	491.8	488.2	488.9	479.3	478.2
155°	502.9	501.4	508.4	507.3	506.6	502.9	502.9	493.3	493.7
157.5°	516.9	513.9	520.6	520.2	518.7	515.8	515.1	506.6	507.7
160°	529.1	526.5	530.9	530.2	529.1	526.1	526.1	518.7	520.6
162.5°	539.7	536.4	540.1	537.9	537.5	534.2	535.7	529.4	532.0
165°	548.9	545.6	547.5	544.5	544.2	541.2	543.8	539.4	542.3
167.5°	557.1	553.4	553.0	550.4	549.7	547.5	550.4	547.8	551.2
170°	563.3	559.6	558.5	554.1	553.4	551.5	555.9	555.2	558.2
172.5°	568.1	564.4	561.8	556.7	554.1	554.5	560.4	560.4	563.7
175°	571.4	567.4	564.4	559.3	554.5	557.4	563.7	564.1	567.7
177.5°	572.2	568.1	565.5	560.7	558.9	559.3	565.9	565.9	569.9
180°	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2

(END OF REPORT)