

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P922071

Luminaire Tested: DFN2DIP-PN3F0-030D090US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922071
REPORT IS A COMBINATION OF REPORTS P901116 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-030D090US940-RLLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

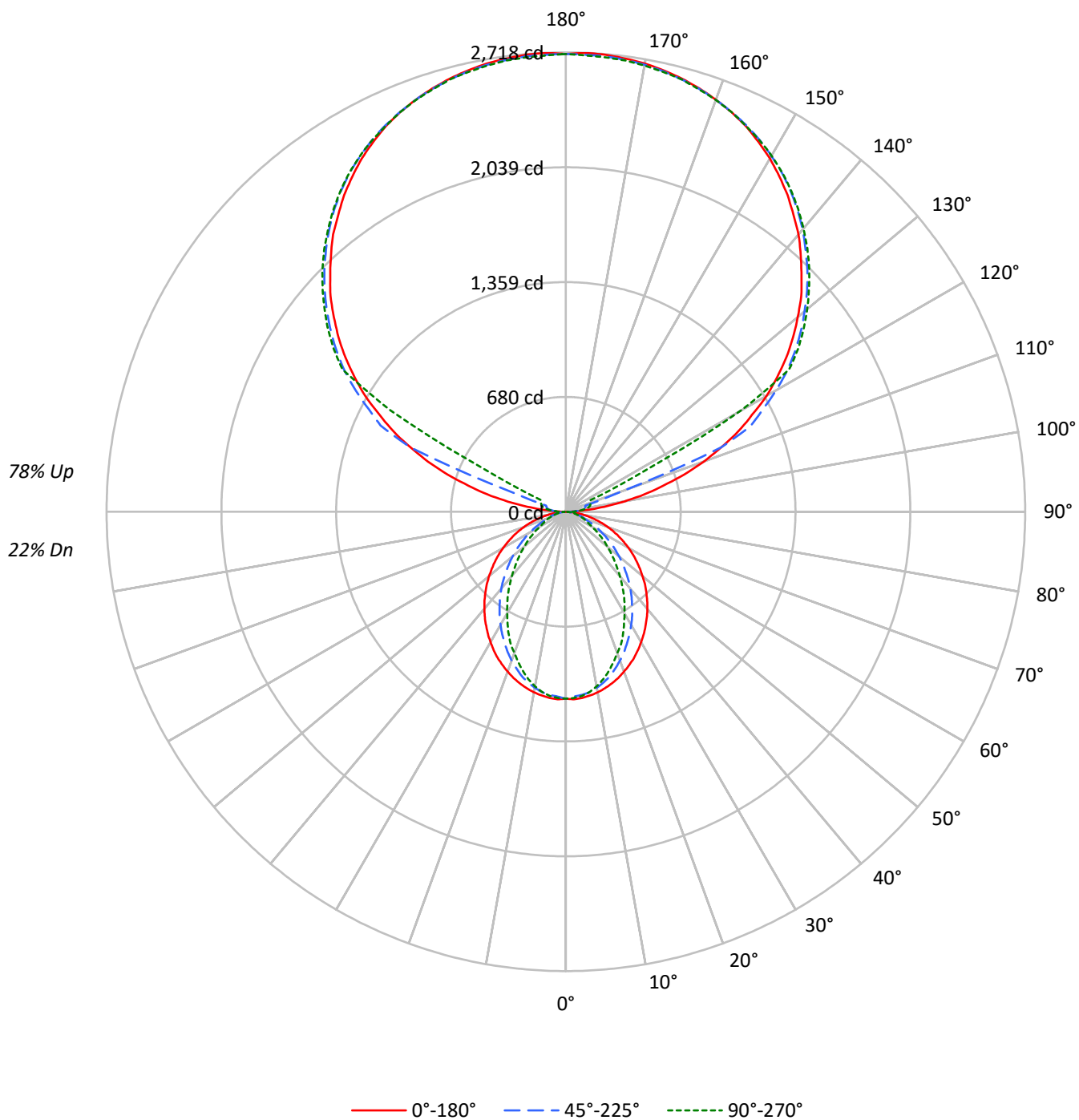
Lumens per Lamp: N/A
Luminaire Lumens: 10219.0 lumens
Efficiency: N/A
Efficacy: 107.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 95.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	101	101	101	101	89	89	89	89	68	68	68	49	49	49	31	31	31
1	92	88	84	81	81	78	75	72	60	58	56	43	42	41	27	27	26
2	84	77	71	66	74	68	64	60	52	49	47	38	36	34	24	23	22
3	76	68	61	55	68	60	55	50	46	43	39	34	31	29	22	20	19
4	70	60	52	47	62	53	47	42	41	37	34	30	27	25	20	18	17
5	64	53	46	40	57	48	41	36	37	32	29	27	24	22	18	16	15
6	59	48	40	35	52	43	36	31	33	29	25	24	21	19	16	14	13
7	54	43	35	30	48	38	32	27	30	25	22	22	19	17	15	13	12
8	50	39	32	27	45	35	29	24	27	23	20	20	17	15	14	12	10
9	47	35	28	23	42	32	26	21	25	20	17	19	16	13	12	11	9
10	44	32	25	21	39	29	23	19	23	19	16	17	14	12	12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1292	1292	1292
5°	1294	1271	1279
10°	1280	1245	1237
15°	1262	1203	1172
20°	1238	1146	1093
25°	1213	1081	1016
30°	1180	1015	919
35°	1148	944	834
40°	1115	871	736
45°	1077	790	648
50°	1038	709	562
55°	996	621	479
60°	948	530	394
65°	893	438	354
70°	826	351	319
75°	742	308	289
80°	621	256	249
85°	422	166	184

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1826 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	1.0
10°-20°	284.5	2.8
20°-30°	399.4	3.9
30°-40°	435.3	4.3
40°-50°	400.1	3.9
50°-60°	314.2	3.1
60°-70°	204.5	2.0
70°-80°	105.3	1.0
80°-90°	31.6	0.3
90°-100°	89.3	0.9
100°-110°	332.9	3.3
110°-120°	883.0	8.6
120°-130°	1464.5	14.3
130°-140°	1555.6	15.2
140°-150°	1445.8	14.1
150°-160°	1162.4	11.4
160°-170°	749.0	7.3
170°-180°	257.8	2.5
0°-30°	787.5	7.7
0°-40°	1222.8	12.0
0°-60°	1937.2	19.0
0°-90°	2278.6	22.3
90°-120°	1305.2	12.8
90°-150°	5771.2	56.5
90°-180°	7940.0	77.7
0°-180°	10219.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1106	1106	1106	1106	1106	
5°	1106	1101	1088	1097	1094	105
15°	1052	1040	1007	988	978	296
25°	955	922	856	816	800	439
35°	822	771	683	620	598	515
45°	672	605	500	429	405	519
55°	511	433	325	265	246	457
65°	345	264	174	140	137	342
75°	184	114	80	73	72	195
85°	43	22	19	19	19	49
90°	2	24	39	49	53	9
95°	127	63	76	86	84	151
105°	596	655	120	141	149	637
115°	1127	1160	1209	302	161	1109
125°	1593	1619	1656	1670	1676	1421
135°	1972	2003	2020	2040	2036	1523
145°	2287	2285	2318	2332	2322	1431
155°	2518	2501	2524	2536	2520	1161
165°	2654	2642	2648	2662	2648	750
175°	2714	2700	2705	2718	2699	258
180°	2708	2708	2708	2708	2708	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1105.6	1105.6	1105.6	1105.6	1105.6
2.5°	1110.6	1105.6	1094.6	1104.7	1102.7
5°	1105.6	1100.6	1087.6	1096.6	1093.6
7.5°	1096.6	1090.7	1076.7	1080.6	1075.6
10°	1084.6	1077.6	1057.7	1054.5	1048.7
12.5°	1069.6	1060.6	1033.6	1027.6	1016.5
15°	1051.6	1040.5	1006.6	987.6	977.6
17.5°	1030.5	1014.6	972.5	950.6	934.5
20°	1006.6	986.5	936.5	911.6	889.5
22.5°	980.6	957.5	899.5	865.5	850.5
25°	954.6	922.5	856.5	815.5	800.4
27.5°	923.5	889.5	816.5	769.5	746.4
30°	890.6	852.5	772.4	721.5	694.4
32.5°	858.4	812.4	730.5	670.4	645.3
35°	822.5	771.4	683.4	620.4	598.3
37.5°	787.5	732.4	639.4	570.2	545.4
40°	750.5	690.5	593.3	522.3	496.3
42.5°	712.4	648.5	547.3	473.2	448.3
45°	672.4	605.3	500.3	429.2	405.2
47.5°	634.4	563.4	455.3	384.1	362.2
50°	592.4	521.3	411.3	342.1	321.2
52.5°	551.3	476.3	369.3	303.2	284.2
55°	511.2	433.2	325.1	265.2	246.2
57.5°	470.3	390.2	286.2	230.2	214.1
60°	428.2	348.2	245.1	194.1	178.2
62.5°	387.3	307.2	210.1	162.1	154.2
65°	345.2	264.1	174.1	140.1	137.1
67.5°	305.2	224.1	140.1	123.1	120.0
70°	263.1	185.1	116.0	106.0	102.0
72.5°	223.1	149.0	97.0	89.1	87.0
75°	184.0	114.0	80.1	73.0	72.1
77.5°	145.1	81.0	63.0	59.0	57.0
80°	109.1	58.1	48.0	44.1	44.1
82.5°	76.0	39.1	33.0	31.0	31.0
85°	43.0	21.9	19.0	19.0	19.0
87.5°	16.1	7.9	7.9	7.0	7.0
90°	1.9	23.5	39.1	49.1	52.8
92.5°	49.1	41.2	47.0	51.0	52.8
95°	127.3	62.6	76.3	86.3	84.3
97.5°	229.3	68.7	99.9	105.8	107.7
100°	347.0	78.5	111.7	127.3	131.3
102.5°	476.2	472.4	115.7	137.1	143.1
105°	595.8	654.7	119.6	141.1	148.9
107.5°	734.9	783.8	123.6	145.0	152.9
110°	868.3	909.3	343.0	147.0	154.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	993.7	1028.9	995.6	150.8	156.9
115°	1126.9	1160.1	1209.2	301.8	160.8
117.5°	1242.5	1281.7	1315.1	1034.7	521.3
120°	1371.9	1401.2	1436.6	1460.1	1195.5
122.5°	1481.6	1513.0	1552.3	1563.9	1566.0
125°	1593.2	1618.8	1656.1	1669.8	1675.6
127.5°	1695.1	1722.6	1752.2	1771.7	1773.6
130°	1791.3	1822.7	1844.1	1865.7	1863.9
132.5°	1889.3	1914.9	1936.3	1954.0	1952.1
135°	1971.7	2003.0	2020.5	2040.3	2036.4
137.5°	2057.8	2081.3	2101.0	2120.6	2114.8
140°	2142.0	2157.8	2179.3	2196.9	2187.2
142.5°	2212.8	2226.5	2251.8	2267.4	2257.7
145°	2287.2	2285.1	2318.4	2332.2	2322.4
147.5°	2351.7	2345.9	2379.2	2389.0	2381.2
150°	2414.6	2400.8	2432.2	2443.8	2434.1
152.5°	2467.4	2451.8	2481.1	2493.0	2479.2
155°	2518.4	2500.9	2524.3	2536.0	2520.4
157.5°	2559.6	2544.0	2561.6	2575.3	2559.6
160°	2594.9	2583.0	2594.9	2606.6	2592.8
162.5°	2626.1	2614.4	2624.2	2637.9	2620.3
165°	2653.6	2641.9	2647.8	2661.5	2647.8
167.5°	2675.2	2663.4	2669.3	2683.1	2665.4
170°	2692.9	2681.0	2684.9	2698.7	2681.0
172.5°	2704.6	2692.9	2696.8	2710.5	2692.9
175°	2714.3	2700.5	2704.6	2718.2	2698.7
177.5°	2718.2	2704.6	2706.6	2720.3	2702.7
180°	2708.5	2708.5	2708.5	2708.5	2708.5

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	4.57	5.22	5.74	6.37	7.99	0.54	1.19	1.71	2.34	3.96
	3H	6.23	6.81	7.41	7.97	9.60	1.71	2.29	2.88	3.44	5.08
	4H	6.83	7.38	8.01	8.53	10.17	2.15	2.69	3.33	3.85	5.49
	6H	7.23	7.74	8.42	8.90	10.55	2.45	2.96	3.64	4.12	5.77
	8H	7.35	7.83	8.54	9.01	10.65	2.54	3.01	3.73	4.19	5.83
	12H	7.41	7.86	8.60	9.03	10.69	2.57	3.02	3.76	4.19	5.86
4H	2H	4.57	5.12	5.76	6.27	7.91	1.11	1.66	2.30	2.82	4.46
	3H	6.37	6.83	7.57	8.01	9.66	2.44	2.89	3.63	4.08	5.73
	4H	7.05	7.47	8.25	8.64	10.31	2.97	3.39	4.17	4.56	6.23
	6H	7.55	7.91	8.75	9.10	10.76	3.37	3.73	4.57	4.93	6.58
	8H	7.72	8.06	8.92	9.24	10.91	3.50	3.83	4.69	5.02	6.69
	12H	7.80	8.11	9.02	9.30	10.98	3.55	3.85	4.76	5.05	6.73
8H	4H	7.00	7.34	8.20	8.52	10.20	3.23	3.57	4.43	4.75	6.43
	6H	7.56	7.83	8.77	9.06	10.73	3.74	4.01	4.95	5.24	6.91
	8H	7.77	8.01	8.99	9.21	10.91	3.92	4.16	5.14	5.37	7.06
	12H	7.90	8.11	9.12	9.31	11.03	4.03	4.24	5.25	5.44	7.16
12H	4H	6.95	7.25	8.16	8.45	10.13	3.23	3.53	4.44	4.73	6.41
	6H	7.53	7.77	8.75	8.98	10.67	3.78	4.02	5.01	5.23	6.92
	8H	7.74	7.95	8.96	9.15	10.87	3.98	4.19	5.21	5.39	7.12

END OF REPORT