

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: P925115

Luminaire Tested: DFN2DIP-PN4F0-080D040US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925115
REPORT IS A COMBINATION OF REPORTS P901138 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-080D040US950-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

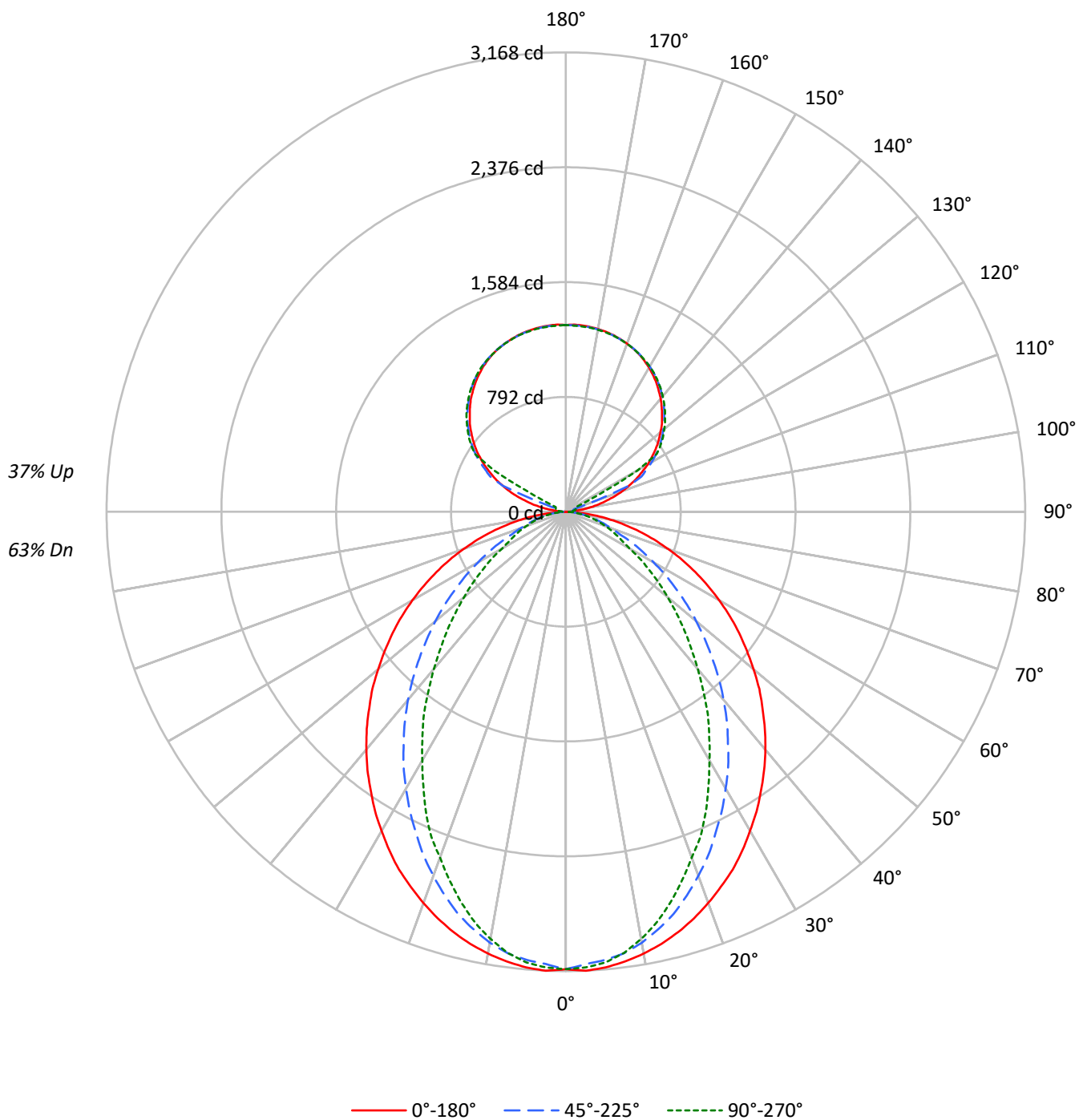
Lumens per Lamp: N/A
Luminaire Lumens: 10265.0 lumens
Efficiency: N/A
Efficacy: 95.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 107.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68	68	68	63
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59	59	59	54
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51	51	51	47
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44	44	44	40
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38	38	38	35
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34	34	34	31
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30	30	30	27
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27	27	27	25
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24	24	24	22
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22	22	22	20
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20	20	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2303	2303	2303
5°	2306	2266	2281
10°	2283	2222	2207
15°	2252	2149	2093
20°	2210	2048	1952
25°	2168	1935	1817
30°	2111	1819	1644
35°	2055	1694	1493
40°	1998	1565	1320
45°	1931	1421	1162
50°	1863	1276	1009
55°	1791	1122	861
60°	1708	960	709
65°	1613	795	639
70°	1498	642	579
75°	1353	566	528
80°	1143	476	459
85°	796	319	348

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1931 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	295.6	2.9
10°-20°	811.5	7.9
20°-30°	1139.4	11.1
30°-40°	1242.0	12.1
40°-50°	1141.5	11.1
50°-60°	896.5	8.7
60°-70°	583.5	5.7
70°-80°	300.4	2.9
80°-90°	78.9	0.8
90°-100°	42.5	0.4
100°-110°	158.3	1.5
110°-120°	419.9	4.1
120°-130°	696.4	6.8
130°-140°	739.7	7.2
140°-150°	687.5	6.7
150°-160°	552.7	5.4
160°-170°	356.1	3.5
170°-180°	122.6	1.2
0°-30°	2246.6	21.9
0°-40°	3488.6	34.0
0°-60°	5526.6	53.8
0°-90°	6489.5	63.2
90°-120°	620.6	6.0
90°-150°	2744.1	26.7
90°-180°	3776.0	36.8
0°-180°	10265.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3154	3154	3154	3154	3154	
5°	3154	3140	3103	3128	3120	299
15°	3000	2969	2872	2818	2789	845
25°	2723	2632	2444	2327	2284	1252
35°	2347	2201	1950	1770	1707	1469
45°	1918	1727	1427	1224	1156	1481
55°	1459	1236	928	756	702	1303
65°	985	754	497	400	391	976
75°	525	325	228	208	206	555
85°	123	63	54	54	54	141
90°	1	11	19	23	25	10
95°	60	30	36	41	40	72
105°	283	311	57	67	71	303
115°	536	552	575	144	76	527
125°	758	770	787	794	797	676
135°	938	952	961	970	968	724
145°	1088	1087	1102	1109	1104	680
155°	1198	1189	1200	1206	1198	552
165°	1262	1256	1259	1266	1259	356
175°	1291	1284	1286	1292	1283	123
180°	1288	1288	1288	1288	1288	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3154.3	3154.3	3154.3	3154.3	3154.3
2.5°	3168.5	3154.3	3122.8	3151.5	3145.8
5°	3154.3	3140.1	3102.8	3128.5	3120.1
7.5°	3128.5	3111.6	3071.6	3082.9	3068.5
10°	3094.3	3074.4	3017.4	3008.6	2991.6
12.5°	3051.7	3025.9	2948.6	2931.6	2900.2
15°	3000.1	2968.7	2871.7	2817.5	2789.0
17.5°	2940.1	2894.4	2774.5	2711.8	2666.0
20°	2871.7	2814.5	2671.9	2600.7	2537.6
22.5°	2797.5	2731.8	2566.2	2469.2	2426.5
25°	2723.3	2631.9	2443.5	2326.6	2283.6
27.5°	2634.9	2537.6	2329.3	2195.2	2129.4
30°	2540.7	2431.9	2203.6	2058.3	1981.0
32.5°	2449.2	2317.8	2084.0	1912.6	1841.1
35°	2346.6	2200.9	1949.8	1770.0	1706.9
37.5°	2246.6	2089.5	1824.1	1627.0	1555.8
40°	2141.0	1969.8	1692.7	1490.1	1415.8
42.5°	2032.5	1849.9	1561.5	1350.2	1278.9
45°	1918.3	1726.9	1427.4	1224.5	1156.1
47.5°	1809.9	1607.3	1299.0	1096.1	1033.4
50°	1689.9	1487.4	1173.3	976.1	916.4
52.5°	1572.8	1358.6	1053.3	865.0	810.8
55°	1458.6	1236.0	927.7	756.5	702.3
57.5°	1341.7	1113.3	816.5	656.6	610.8
60°	1221.7	993.4	699.3	553.9	508.2
62.5°	1104.8	876.4	599.4	462.5	439.8
65°	984.9	753.5	496.7	399.8	390.9
67.5°	870.7	639.4	399.8	351.0	342.6
70°	750.8	528.2	331.0	302.5	291.1
72.5°	636.6	425.2	276.9	254.1	248.3
75°	525.2	325.3	228.4	208.4	205.7
77.5°	414.0	231.1	179.9	168.4	162.7
80°	311.0	165.7	136.9	125.6	125.6
82.5°	216.8	111.4	94.2	88.4	88.4
85°	122.7	62.7	54.2	54.2	54.2
87.5°	45.7	22.7	22.7	20.0	20.0
90°	0.9	11.2	18.6	23.4	25.1
92.5°	23.4	19.6	22.3	24.2	25.1
95°	60.5	29.8	36.3	41.0	40.1
97.5°	109.0	32.6	47.5	50.4	51.2
100°	164.9	37.3	53.1	60.5	62.4
102.5°	226.4	224.7	55.0	65.2	68.0
105°	283.2	311.3	56.9	67.1	70.8
107.5°	349.5	372.7	58.8	69.0	72.7
110°	412.9	432.4	163.1	69.9	73.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	472.5	489.2	473.4	71.7	74.6
115°	535.8	551.6	575.0	143.5	76.5
117.5°	590.8	609.4	625.3	492.0	247.8
120°	652.3	666.3	683.1	694.3	568.5
122.5°	704.4	719.4	738.1	743.6	744.6
125°	757.6	769.8	787.4	794.0	796.8
127.5°	806.0	819.1	833.1	842.5	843.3
130°	851.7	866.7	876.8	887.1	886.3
132.5°	898.3	910.5	920.7	929.1	928.2
135°	937.5	952.5	960.8	970.1	968.3
137.5°	978.4	989.6	999.0	1008.3	1005.5
140°	1018.5	1026.0	1036.2	1044.6	1040.0
142.5°	1052.2	1058.7	1070.8	1078.1	1073.5
145°	1087.6	1086.6	1102.3	1108.9	1104.3
147.5°	1118.2	1115.4	1131.3	1135.9	1132.3
150°	1148.0	1141.6	1156.5	1162.1	1157.4
152.5°	1173.2	1165.8	1179.7	1185.3	1178.9
155°	1197.5	1189.2	1200.3	1205.9	1198.4
157.5°	1217.0	1209.6	1218.1	1224.6	1217.0
160°	1233.8	1228.2	1233.8	1239.3	1232.9
162.5°	1248.7	1243.2	1247.8	1254.3	1245.9
165°	1261.8	1256.2	1259.0	1265.5	1259.0
167.5°	1272.1	1266.3	1269.3	1275.8	1267.4
170°	1280.5	1274.8	1276.6	1283.2	1274.8
172.5°	1286.0	1280.5	1282.4	1288.9	1280.5
175°	1290.6	1284.1	1286.0	1292.5	1283.2
177.5°	1292.5	1286.0	1286.9	1293.5	1285.1
180°	1287.9	1287.9	1287.9	1287.9	1287.9

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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	11.20	12.16	12.05	13.01	14.09	7.17	8.12	8.01	8.98	10.05
	3H	12.89	13.74	13.75	14.61	15.71	8.37	9.22	9.22	10.09	11.19
	4H	13.51	14.31	14.38	15.19	16.30	8.82	9.63	9.70	10.50	11.61
	6H	13.94	14.68	14.82	15.56	16.68	9.15	9.89	10.04	10.77	11.90
	8H	14.07	14.77	14.96	15.67	16.80	9.25	9.95	10.14	10.85	11.97
	12H	14.14	14.81	15.03	15.70	16.85	9.29	9.96	10.19	10.86	12.00
4H	2H	11.24	12.04	12.11	12.91	14.02	7.78	8.58	8.66	9.46	10.57
	3H	13.08	13.75	13.97	14.65	15.78	9.14	9.81	10.03	10.72	11.84
	4H	13.78	14.39	14.68	15.29	16.44	9.70	10.30	10.59	11.21	12.36
	6H	14.30	14.83	15.22	15.75	16.91	10.12	10.65	11.04	11.57	12.73
	8H	14.48	14.97	15.40	15.89	17.06	10.25	10.74	11.17	11.66	12.83
	12H	14.59	15.02	15.52	15.96	17.14	10.33	10.76	11.26	11.71	12.88
8H	4H	13.76	14.24	14.67	15.17	16.33	9.99	10.48	10.90	11.40	12.56
	6H	14.33	14.73	15.27	15.70	16.86	10.51	10.91	11.45	11.88	13.04
	8H	14.55	14.91	15.50	15.86	17.04	10.70	11.06	11.66	12.01	13.20
	12H	14.70	15.01	15.65	15.96	17.19	10.83	11.14	11.78	12.09	13.32
12H	4H	13.71	14.15	14.65	15.09	16.26	10.00	10.44	10.93	11.38	12.55
	6H	14.31	14.66	15.26	15.62	16.80	10.56	10.92	11.51	11.87	13.06
	8H	14.53	14.85	15.49	15.80	17.03	10.78	11.09	11.73	12.04	13.27