

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: P916808

Luminaire Tested: DFN2DIP-PN4F0-040D100US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916808
REPORT IS A COMBINATION OF REPORTS P899717 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D100US930-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

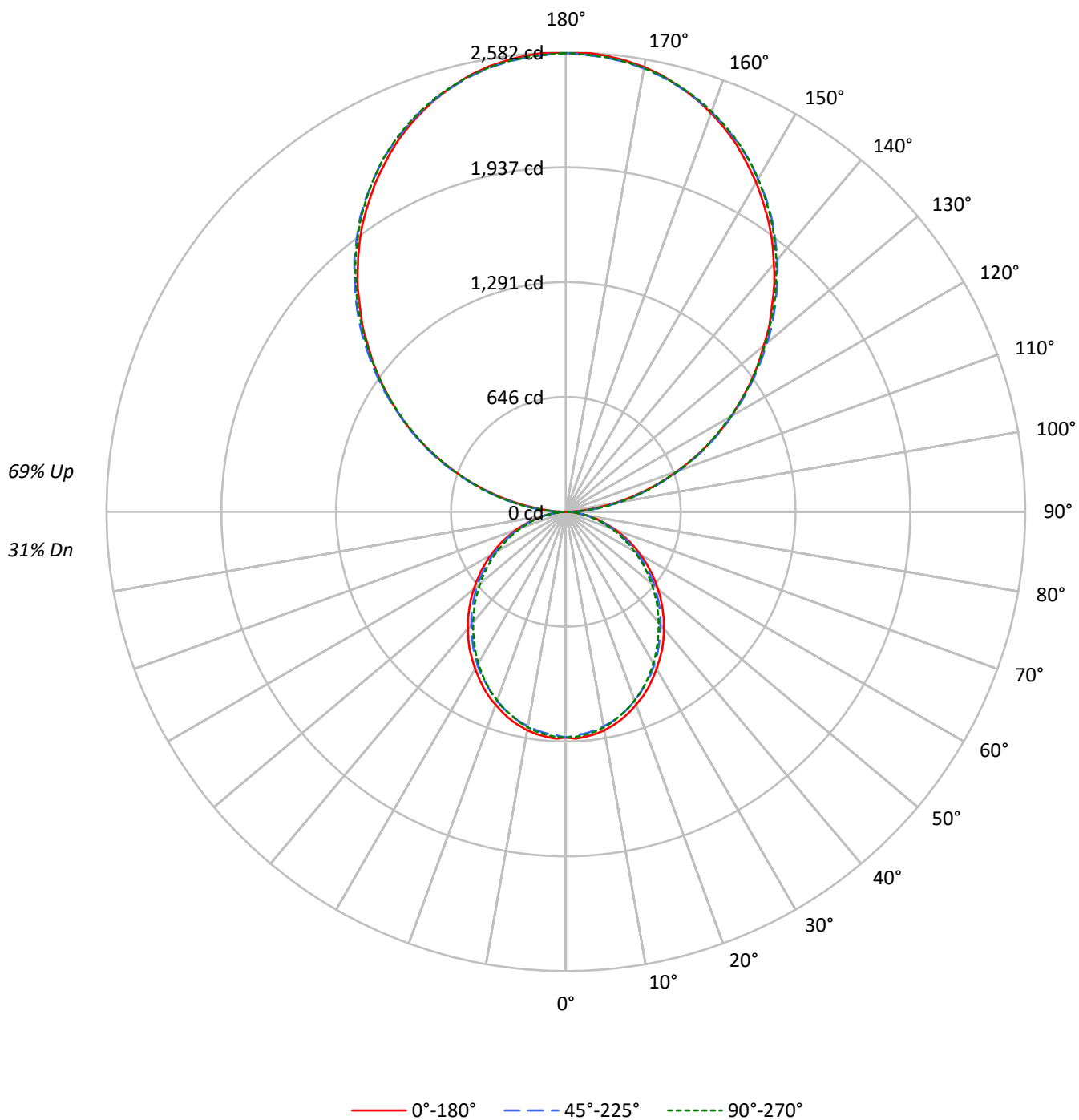
Lumens per Lamp: N/A
Luminaire Lumens: 10444.0 lumens
Efficiency: N/A
Efficacy: 96.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 108.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39
1	94	89	86	82	84	80	77	74	64	61	60	48	47	46	34	33	33
2	85	78	72	67	76	70	65	61	56	52	49	42	40	38	30	29	27
3	78	68	61	56	69	62	56	51	49	45	41	37	35	32	27	25	23
4	71	60	53	47	63	55	48	43	44	39	35	33	30	28	24	22	20
5	65	54	46	40	58	49	42	37	39	34	30	30	26	24	21	19	17
6	60	48	40	35	54	44	37	32	35	30	26	27	23	21	19	17	15
7	55	43	36	30	49	39	33	28	32	27	23	24	21	18	18	15	14
8	51	39	32	27	46	36	29	24	29	24	20	22	19	16	16	14	12
9	47	36	28	24	43	32	26	22	26	21	18	20	17	15	15	13	11
10	44	33	26	21	40	30	24	19	24	19	16	19	15	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	926	926	926
5°	928	914	920
10°	920	901	907
15°	907	887	888
20°	888	866	868
25°	870	842	845
30°	847	819	816
35°	826	792	786
40°	799	765	756
45°	773	737	726
50°	744	709	692
55°	713	676	660
60°	679	636	623
65°	642	596	580
70°	594	546	534
75°	528	487	491
80°	449	411	410
85°	325	281	274

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2020 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.4	1.1
10°-20°	336.0	3.2
20°-30°	493.8	4.7
30°-40°	573.6	5.5
40°-50°	572.9	5.5
50°-60°	499.5	4.8
60°-70°	369.3	3.5
70°-80°	208.9	2.0
80°-90°	62.5	0.6
90°-100°	159.6	1.5
100°-110°	507.0	4.9
110°-120°	867.6	8.3
120°-130°	1141.0	10.9
130°-140°	1280.7	12.3
140°-150°	1255.9	12.0
150°-160°	1053.5	10.1
160°-170°	698.7	6.7
170°-180°	244.2	2.3
0°-30°	949.3	9.1
0°-40°	1522.9	14.6
0°-60°	2595.3	24.8
0°-90°	3235.9	31.0
90°-120°	1534.1	14.7
90°-150°	5211.7	49.9
90°-180°	7208.0	69.0
0°-180°	10444.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1269	1269	1269	1269	1269	
5°	1269	1264	1251	1260	1258	120
15°	1208	1201	1185	1190	1184	340
25°	1093	1084	1063	1065	1063	503
35°	943	931	912	904	898	589
45°	768	759	741	727	722	592
55°	581	574	559	544	538	519
65°	392	384	372	361	355	387
75°	205	203	196	189	192	219
85°	50	49	48	44	43	56
90°	2	28	76	72	74	10
95°	114	135	139	139	135	126
105°	468	474	479	483	483	494
115°	871	883	879	877	871	861
125°	1266	1286	1280	1272	1270	1132
135°	1638	1662	1667	1664	1658	1266
145°	1988	2004	2016	2019	2010	1242
155°	2274	2280	2287	2298	2291	1047
165°	2474	2471	2471	2487	2476	698
175°	2574	2568	2563	2578	2565	245
180°	2578	2578	2578	2578	2578	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1268.9	1268.9	1268.9	1268.9	1268.9
2.5°	1276.3	1270.2	1256.8	1268.9	1266.6
5°	1268.9	1264.1	1250.7	1260.4	1258.1
7.5°	1260.4	1253.1	1239.7	1249.5	1247.1
10°	1247.1	1238.5	1223.9	1233.6	1230.0
12.5°	1228.7	1221.4	1206.8	1212.9	1210.4
15°	1207.9	1200.7	1184.8	1189.7	1183.6
17.5°	1182.3	1175.1	1159.2	1165.2	1159.2
20°	1154.2	1147.0	1129.9	1133.5	1128.8
22.5°	1126.3	1115.2	1099.3	1099.3	1096.9
25°	1093.2	1083.5	1062.8	1065.2	1062.8
27.5°	1056.6	1048.1	1032.3	1028.7	1022.6
30°	1020.1	1010.3	992.1	988.4	983.5
32.5°	981.0	973.8	954.2	946.9	941.9
35°	943.2	931.1	911.5	904.2	898.1
37.5°	900.5	889.5	869.9	861.4	855.3
40°	856.6	846.8	827.2	816.4	811.5
42.5°	813.9	804.0	784.6	772.3	765.1
45°	767.5	759.0	740.6	727.3	722.4
47.5°	722.4	713.8	694.3	680.9	673.6
50°	674.7	668.6	651.6	634.5	628.4
52.5°	628.4	619.9	604.1	590.6	582.0
55°	580.9	573.5	558.9	544.2	538.2
57.5°	533.2	527.2	511.2	496.6	491.7
60°	485.6	480.8	463.7	450.3	446.6
62.5°	439.3	430.7	418.6	406.3	401.5
65°	391.8	384.3	372.2	361.2	355.1
67.5°	342.9	336.7	325.9	317.3	312.4
70°	297.7	292.9	281.8	273.3	268.5
72.5°	251.4	246.5	240.4	231.9	228.2
75°	205.0	202.6	196.4	189.1	191.6
77.5°	163.5	158.6	156.1	152.5	148.9
80°	122.1	120.7	118.3	114.7	112.3
82.5°	83.0	83.0	81.9	76.9	76.9
85°	50.0	48.8	47.6	43.9	42.7
87.5°	22.0	19.6	17.1	13.5	12.1
90°	2.4	28.0	76.1	71.5	73.9
92.5°	48.2	65.3	67.7	70.0	70.0
95°	113.5	135.3	139.2	139.2	135.3
97.5°	188.9	209.1	217.7	217.7	217.7
100°	276.0	293.8	300.0	300.0	297.7
102.5°	367.7	380.9	389.5	391.8	389.5
105°	468.0	474.2	478.8	482.7	482.7
107.5°	567.4	576.8	576.8	578.4	567.4
110°	663.9	676.3	676.3	676.3	670.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	768.0	781.2	778.9	772.7	768.0
115°	870.7	883.0	879.2	876.9	870.7
117.5°	972.5	989.6	978.7	972.5	966.2
120°	1075.1	1092.2	1075.1	1075.1	1068.1
122.5°	1168.3	1190.1	1179.2	1173.1	1168.3
125°	1266.3	1285.7	1279.5	1272.5	1270.2
127.5°	1362.0	1386.0	1377.4	1368.2	1362.0
130°	1451.3	1479.3	1475.4	1470.7	1462.2
132.5°	1551.6	1573.4	1574.9	1564.1	1557.8
135°	1637.9	1662.0	1666.6	1664.3	1658.1
137.5°	1734.3	1753.7	1757.6	1756.1	1746.7
140°	1819.0	1838.4	1849.3	1849.3	1840.8
142.5°	1906.1	1925.5	1931.7	1934.1	1925.5
145°	1988.4	2004.0	2016.5	2018.8	2010.2
147.5°	2062.3	2081.8	2091.1	2095.0	2086.4
150°	2138.5	2151.7	2160.3	2167.2	2160.3
152.5°	2206.1	2219.3	2230.2	2238.8	2230.2
155°	2273.8	2280.0	2287.0	2297.8	2290.8
157.5°	2332.1	2336.7	2340.6	2356.1	2345.3
160°	2384.2	2388.8	2391.1	2404.3	2395.0
162.5°	2432.4	2432.4	2434.6	2449.4	2438.6
165°	2473.5	2471.2	2471.2	2486.7	2475.9
167.5°	2510.9	2503.9	2503.9	2519.4	2508.5
170°	2538.8	2532.6	2530.3	2545.9	2532.6
172.5°	2558.2	2552.0	2549.7	2565.3	2552.0
175°	2573.8	2567.6	2563.0	2578.5	2565.3
177.5°	2582.4	2576.2	2571.5	2584.7	2571.5
180°	2578.5	2578.5	2578.5	2578.5	2578.5



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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	4.93	5.64	6.03	6.74	8.26	4.49	5.20	5.59	6.30	7.82
	3H	6.58	7.22	7.69	8.33	9.86	6.10	6.73	7.21	7.84	9.38
	4H	7.16	7.77	8.29	8.88	10.42	6.68	7.28	7.80	8.39	9.93
	6H	7.56	8.12	8.69	9.23	10.78	7.07	7.62	8.20	8.74	10.29
	8H	7.66	8.19	8.79	9.32	10.86	7.17	7.70	8.30	8.83	10.37
	12H	7.70	8.21	8.84	9.33	10.90	7.20	7.71	8.34	8.83	10.40
4H	2H	5.37	5.98	6.50	7.09	8.63	5.02	5.63	6.15	6.74	8.28
	3H	7.23	7.73	8.36	8.87	10.42	6.82	7.33	7.96	8.47	10.02
	4H	7.94	8.40	9.08	9.53	11.10	7.52	7.99	8.66	9.11	10.68
	6H	8.45	8.85	9.59	9.99	11.56	8.02	8.42	9.17	9.57	11.13
	8H	8.59	8.97	9.74	10.11	11.69	8.17	8.54	9.31	9.68	11.26
	12H	8.66	9.00	9.82	10.15	11.74	8.22	8.56	9.38	9.71	11.30
8H	4H	8.12	8.49	9.27	9.63	11.22	7.75	8.12	8.90	9.26	10.85
	6H	8.75	9.06	9.92	10.24	11.82	8.37	8.68	9.54	9.86	11.44
	8H	8.97	9.24	10.14	10.40	12.00	8.59	8.86	9.76	10.02	11.62
	12H	9.10	9.33	10.27	10.49	12.13	8.70	8.93	9.87	10.09	11.72
12H	4H	8.10	8.44	9.26	9.59	11.18	7.74	8.08	8.90	9.23	10.81
	6H	8.78	9.05	9.95	10.21	11.81	8.41	8.68	9.59	9.84	11.44
	8H	9.02	9.25	10.19	10.41	12.04	8.64	8.88	9.82	10.04	11.67

END OF REPORT