

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: P919532

Luminaire Tested: DFN2DIP-PN4F0-040D090US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919532
REPORT IS A COMBINATION OF REPORTS P899699 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D090US935-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

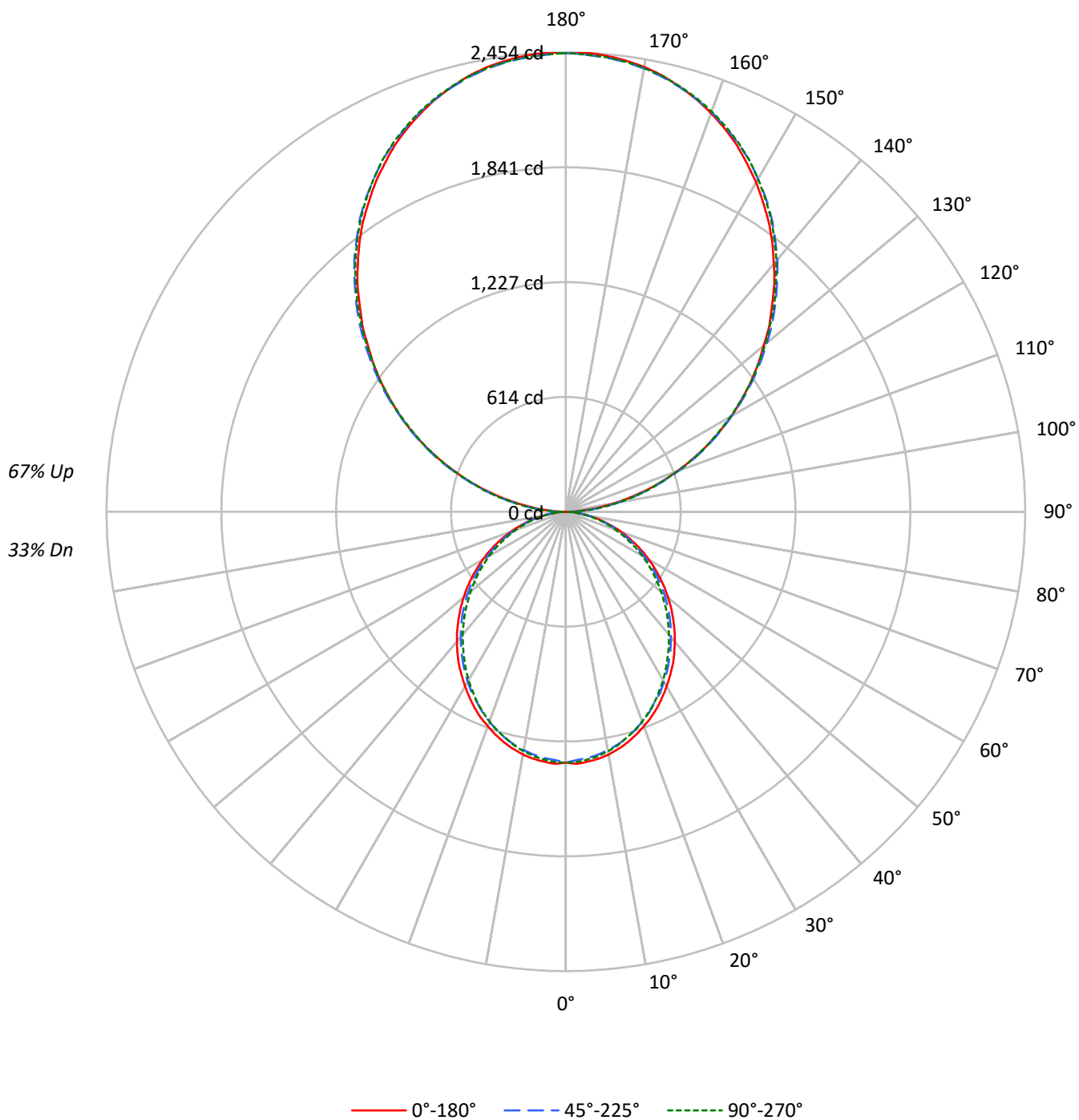
Lumens per Lamp: N/A
Luminaire Lumens: 10267.3 lumens
Efficiency: N/A
Efficacy: 102.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 100
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	93	93	93	93	74	74	74	57	57	57	41	41	41
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	78	72	67	77	71	66	62	57	53	50	44	41	39	32	30	29
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25
4	71	61	53	47	64	55	49	43	44	40	36	34	31	28	25	23	21
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	18
6	60	48	41	35	54	44	37	32	36	31	27	28	24	21	20	18	16
7	56	44	36	30	50	40	33	28	32	27	23	25	22	19	19	16	14
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13
9	48	36	29	24	43	33	26	22	27	22	18	21	18	15	16	13	12
10	45	33	26	21	40	30	24	20	25	20	17	19	16	14	15	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	978	978	978
5°	980	965	971
10°	972	952	958
15°	958	936	938
20°	938	915	917
25°	919	889	893
30°	895	865	862
35°	872	836	830
40°	844	807	799
45°	816	779	767
50°	785	749	730
55°	753	714	697
60°	717	672	658
65°	678	629	613
70°	627	577	564
75°	558	514	519
80°	474	434	433
85°	343	296	289

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1919 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.1	1.2
10°-20°	354.9	3.5
20°-30°	521.5	5.1
30°-40°	605.7	5.9
40°-50°	605.0	5.9
50°-60°	527.5	5.1
60°-70°	389.9	3.8
70°-80°	220.6	2.1
80°-90°	65.2	0.6
90°-100°	151.6	1.5
100°-110°	481.8	4.7
110°-120°	824.6	8.0
120°-130°	1084.4	10.6
130°-140°	1217.2	11.9
140°-150°	1193.6	11.6
150°-160°	1001.3	9.8
160°-170°	664.0	6.5
170°-180°	232.1	2.3
0°-30°	1002.5	9.8
0°-40°	1608.3	15.7
0°-60°	2740.7	26.7
0°-90°	3416.5	33.3
90°-120°	1458.0	14.2
90°-150°	4953.4	48.2
90°-180°	6851.0	66.7
0°-180°	10267.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1340	1340	1340	1340	1340	
5°	1340	1335	1321	1331	1329	127
15°	1276	1268	1251	1256	1250	359
25°	1154	1144	1122	1125	1122	531
35°	996	983	963	955	948	622
45°	810	802	782	768	763	626
55°	614	606	590	575	568	548
65°	414	406	393	381	375	409
75°	216	214	207	200	202	231
85°	53	52	50	46	45	59
90°	2	27	72	68	70	10
95°	108	128	132	132	128	120
105°	445	451	455	459	459	469
115°	828	839	836	833	828	818
125°	1204	1222	1216	1209	1207	1076
135°	1557	1580	1584	1582	1576	1203
145°	1890	1905	1916	1919	1911	1181
155°	2161	2167	2174	2184	2177	995
165°	2351	2349	2349	2364	2353	663
175°	2446	2440	2436	2451	2438	232
180°	2451	2451	2451	2451	2451	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1340.1	1340.1	1340.1	1340.1	1340.1
2.5°	1347.9	1341.4	1327.2	1340.1	1337.6
5°	1340.1	1335.0	1320.8	1331.0	1328.6
7.5°	1331.0	1323.4	1309.1	1319.6	1317.0
10°	1317.0	1307.9	1292.5	1302.8	1298.9
12.5°	1297.5	1289.9	1274.4	1280.9	1278.2
15°	1275.7	1268.0	1251.2	1256.4	1250.0
17.5°	1248.6	1241.0	1224.2	1230.5	1224.2
20°	1218.9	1211.3	1193.3	1197.0	1192.1
22.5°	1189.4	1177.8	1161.0	1161.0	1158.4
25°	1154.5	1144.3	1122.4	1124.9	1122.4
27.5°	1115.9	1106.8	1090.2	1086.3	1079.9
30°	1077.3	1066.9	1047.7	1043.8	1038.6
32.5°	1036.0	1028.4	1007.7	1000.0	994.7
35°	996.1	983.3	962.6	954.8	948.4
37.5°	951.0	939.3	918.7	909.7	903.3
40°	904.7	894.2	873.6	862.1	857.0
42.5°	859.5	849.1	828.6	815.6	808.0
45°	810.5	801.6	782.1	768.1	762.8
47.5°	762.8	753.8	733.2	719.0	711.4
50°	712.6	706.1	688.1	670.0	663.6
52.5°	663.6	654.6	637.9	623.7	614.7
55°	613.5	605.6	590.2	574.7	568.3
57.5°	563.1	556.7	539.8	524.4	519.3
60°	512.8	507.7	489.7	475.5	471.7
62.5°	463.9	454.9	442.0	429.1	424.0
65°	413.7	405.9	393.0	381.4	375.1
67.5°	362.1	355.6	344.1	335.1	329.9
70°	314.4	309.3	297.6	288.6	283.5
72.5°	265.5	260.3	253.9	244.9	241.0
75°	216.5	214.0	207.4	199.8	202.3
77.5°	172.6	167.5	164.9	161.0	157.2
80°	128.9	127.5	124.9	121.1	118.6
82.5°	87.6	87.6	86.4	81.2	81.2
85°	52.8	51.6	50.3	46.3	45.1
87.5°	23.2	20.7	18.1	14.2	12.8
90°	2.2	26.6	72.4	67.9	70.2
92.5°	45.8	62.1	64.3	66.5	66.5
95°	107.9	128.5	132.2	132.2	128.5
97.5°	179.5	198.7	206.9	206.9	206.9
100°	262.3	279.3	285.2	285.2	283.0
102.5°	349.5	362.0	370.1	372.4	370.1
105°	444.8	450.6	455.1	458.8	458.8
107.5°	539.3	548.2	548.2	549.7	539.3
110°	630.9	642.8	642.8	642.8	636.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	730.0	742.5	740.3	734.4	730.0
115°	827.5	839.3	835.6	833.4	827.5
117.5°	924.3	940.6	930.2	924.3	918.3
120°	1021.8	1038.0	1021.8	1021.8	1015.1
122.5°	1110.4	1131.2	1120.8	1114.9	1110.4
125°	1203.6	1222.0	1216.2	1209.4	1207.3
127.5°	1294.4	1317.3	1309.2	1300.4	1294.4
130°	1379.4	1406.0	1402.3	1397.8	1389.7
132.5°	1474.7	1495.4	1496.8	1486.5	1480.7
135°	1556.7	1579.6	1584.1	1581.8	1576.0
137.5°	1648.3	1666.8	1670.5	1669.0	1660.2
140°	1728.9	1747.3	1757.6	1757.6	1749.5
142.5°	1811.6	1830.1	1836.0	1838.2	1830.1
145°	1890.0	1904.7	1916.5	1918.7	1910.6
147.5°	1960.1	1978.6	1987.4	1991.1	1983.1
150°	2032.6	2045.1	2053.2	2059.9	2053.2
152.5°	2096.8	2109.4	2119.7	2127.9	2119.7
155°	2161.1	2167.0	2173.7	2184.0	2177.4
157.5°	2216.5	2220.9	2224.6	2239.4	2229.0
160°	2266.0	2270.5	2272.7	2285.2	2276.3
162.5°	2311.8	2311.8	2314.0	2328.1	2317.7
165°	2351.0	2348.7	2348.7	2363.5	2353.2
167.5°	2386.4	2379.8	2379.8	2394.5	2384.2
170°	2413.0	2407.1	2404.9	2419.7	2407.1
172.5°	2431.5	2425.6	2423.4	2438.2	2425.6
175°	2446.3	2440.3	2435.9	2450.7	2438.2
177.5°	2454.4	2448.5	2444.0	2456.6	2444.0
180°	2450.7	2450.7	2450.7	2450.7	2450.7

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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	5.41	6.14	6.50	7.23	8.72	4.97	5.70	6.06	6.79	8.28
	3H	7.07	7.72	8.16	8.82	10.32	6.58	7.24	7.68	8.33	9.84
	4H	7.65	8.27	8.76	9.37	10.88	7.16	7.78	8.27	8.88	10.39
	6H	8.05	8.62	9.16	9.72	11.24	7.55	8.12	8.67	9.22	10.75
	8H	8.15	8.69	9.27	9.81	11.33	7.65	8.20	8.78	9.31	10.83
	12H	8.19	8.71	9.32	9.82	11.36	7.69	8.21	8.82	9.32	10.86
4H	2H	5.86	6.48	6.97	7.58	9.09	5.51	6.13	6.62	7.22	8.74
	3H	7.72	8.23	8.84	9.36	10.88	7.31	7.83	8.43	8.95	10.48
	4H	8.43	8.90	9.55	10.02	11.56	8.01	8.48	9.13	9.60	11.15
	6H	8.94	9.34	10.07	10.48	12.02	8.51	8.92	9.65	10.06	11.60
	8H	9.09	9.47	10.22	10.59	12.15	8.66	9.04	9.79	10.17	11.72
	12H	9.15	9.50	10.30	10.64	12.20	8.71	9.06	9.86	10.20	11.76
8H	4H	8.61	8.99	9.75	10.12	11.68	8.24	8.62	9.37	9.75	11.31
	6H	9.24	9.56	10.40	10.73	12.28	8.87	9.18	10.02	10.35	11.90
	8H	9.46	9.74	10.62	10.89	12.46	9.08	9.35	10.24	10.50	12.08
	12H	9.59	9.83	10.75	10.98	12.59	9.19	9.43	10.35	10.58	12.18
12H	4H	8.59	8.94	9.74	10.08	11.64	8.23	8.58	9.38	9.71	11.28
	6H	9.27	9.55	10.43	10.70	12.27	8.91	9.18	10.06	10.33	11.90
	8H	9.51	9.75	10.67	10.90	12.50	9.14	9.38	10.30	10.52	12.13

END OF REPORT