

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: P919570

Luminaire Tested: DFN2DIP-PN4F0-050D090US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919570
REPORT IS A COMBINATION OF REPORTS P899702 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D090US935-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

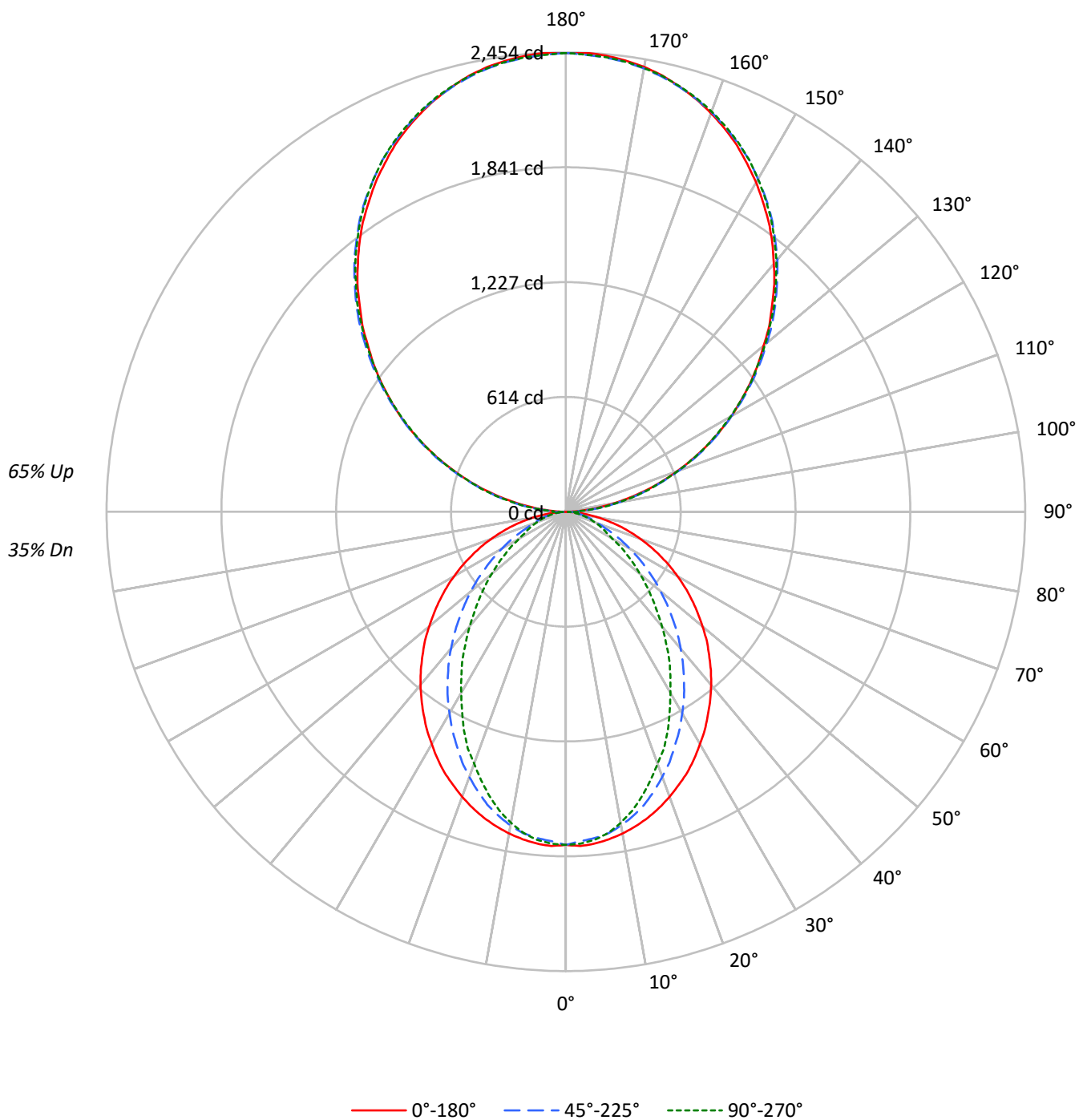
Lumens per Lamp: N/A
Luminaire Lumens: 10517.1 lumens
Efficiency: N/A
Efficacy: 95.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 110.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P919570

CATALOG NUMBER: DFN2DIP-PN4F0-050D090US935-RLLFLL

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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	42	42	42
1	95	91	87	84	85	82	79	76	66	64	62	51	50	49	38	37	36
2	86	79	74	69	78	72	67	63	58	55	52	45	43	41	34	32	31
3	79	70	63	58	71	64	58	53	52	47	44	40	38	35	30	28	27
4	72	62	55	49	65	57	50	45	46	41	38	36	33	30	27	25	23
5	67	55	48	42	60	51	44	39	41	36	33	33	29	26	25	22	21
6	61	50	42	37	55	45	39	34	37	32	29	30	26	23	22	20	18
7	57	45	37	32	51	41	34	30	34	29	25	27	23	21	21	18	16
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	16	15
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	17	15	13
10	46	34	27	23	41	31	25	21	26	21	18	21	18	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1299	1299	1299
5°	1301	1278	1287
10°	1288	1253	1245
15°	1270	1212	1180
20°	1247	1155	1101
25°	1223	1091	1025
30°	1190	1026	928
35°	1159	955	842
40°	1127	883	744
45°	1089	802	656
50°	1051	720	569
55°	1010	633	486
60°	964	541	400
65°	910	449	360
70°	845	362	326
75°	763	319	298
80°	645	268	259
85°	449	180	196

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1919 cd/sqm

TEST NUMBER: P919570

CATALOG NUMBER: DFN2DIP-PN4F0-050D090US935-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.8	1.6
10°-20°	457.8	4.4
20°-30°	642.7	6.1
30°-40°	700.6	6.7
40°-50°	643.9	6.1
50°-60°	505.7	4.8
60°-70°	329.2	3.1
70°-80°	169.5	1.6
80°-90°	50.2	0.5
90°-100°	151.6	1.4
100°-110°	481.8	4.6
110°-120°	824.6	7.8
120°-130°	1084.4	10.3
130°-140°	1217.2	11.6
140°-150°	1193.6	11.3
150°-160°	1001.3	9.5
160°-170°	664.0	6.3
170°-180°	232.1	2.2
0°-30°	1267.2	12.0
0°-40°	1967.8	18.7
0°-60°	3117.4	29.6
0°-90°	3666.2	34.9
90°-120°	1458.0	13.9
90°-150°	4953.4	47.1
90°-180°	6851.0	65.1
0°-180°	10517.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1779	1779	1779	1779	1779	
5°	1779	1771	1750	1765	1760	169
15°	1692	1675	1620	1589	1573	477
25°	1536	1484	1378	1312	1288	706
35°	1324	1242	1100	998	963	828
45°	1082	974	805	691	652	836
55°	823	697	523	427	396	735
65°	556	425	280	226	221	551
75°	296	184	129	118	116	313
85°	69	35	31	31	31	79
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	

TEST NUMBER: P919570

CATALOG NUMBER: DFN2DIP-PN4F0-050D090US935-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1779.3	1779.3	1779.3	1779.3	1779.3
2.5°	1787.3	1779.3	1761.5	1777.7	1774.4
5°	1779.3	1771.2	1750.2	1764.7	1760.0
7.5°	1764.7	1755.1	1732.6	1739.0	1730.9
10°	1745.4	1734.1	1702.0	1697.1	1687.5
12.5°	1721.3	1706.8	1663.3	1653.7	1635.9
15°	1692.3	1674.6	1619.9	1589.3	1573.2
17.5°	1658.5	1632.7	1565.0	1529.6	1503.8
20°	1619.9	1587.6	1507.1	1467.0	1431.4
22.5°	1578.0	1540.9	1447.5	1392.8	1368.7
25°	1536.1	1484.5	1378.3	1312.3	1288.1
27.5°	1486.3	1431.4	1313.9	1238.2	1201.2
30°	1433.1	1371.8	1243.0	1161.0	1117.4
32.5°	1381.6	1307.4	1175.5	1078.8	1038.5
35°	1323.6	1241.5	1099.8	998.3	962.9
37.5°	1267.2	1178.6	1029.0	917.7	877.6
40°	1207.6	1111.1	954.8	840.5	798.7
42.5°	1146.5	1043.4	880.8	761.6	721.4
45°	1082.1	974.1	805.1	690.7	652.0
47.5°	1020.9	906.6	732.7	618.3	582.9
50°	953.3	839.0	661.8	550.6	516.9
52.5°	887.2	766.4	594.2	487.9	457.4
55°	822.8	697.1	523.2	426.7	396.1
57.5°	756.8	628.0	460.5	370.4	344.6
60°	689.1	560.3	394.4	312.5	286.6
62.5°	623.2	494.4	338.1	260.9	248.1
65°	555.5	425.1	280.2	225.5	220.6
67.5°	491.1	360.7	225.5	198.0	193.2
70°	423.5	297.9	186.8	170.6	164.2
72.5°	359.1	239.9	156.2	143.4	140.1
75°	296.3	183.5	128.8	117.5	116.0
77.5°	233.5	130.4	101.5	95.0	91.7
80°	175.5	93.4	77.2	70.9	70.9
82.5°	122.3	62.9	53.1	49.9	49.9
85°	69.2	35.4	30.6	30.6	30.6
87.5°	25.8	12.8	12.8	11.3	11.3
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

TEST NUMBER: P919570

CATALOG NUMBER: DFN2DIP-PN4F0-050D090US935-RLLFLL

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	6.46	7.18	7.54	8.25	9.73	2.42	3.14	3.50	4.22	5.69
	3H	8.13	8.77	9.22	9.86	11.35	3.60	4.25	4.69	5.33	6.82
	4H	8.73	9.34	9.83	10.43	11.93	4.05	4.66	5.15	5.75	7.24
	6H	9.15	9.71	10.26	10.80	12.31	4.36	4.92	5.47	6.02	7.53
	8H	9.28	9.81	10.39	10.92	12.42	4.45	4.98	5.57	6.09	7.60
	12H	9.34	9.84	10.45	10.94	12.47	4.49	5.00	5.61	6.10	7.63
4H	2H	6.46	7.07	7.57	8.16	9.66	3.00	3.61	4.11	4.70	6.20
	3H	8.28	8.79	9.40	9.91	11.42	4.34	4.85	5.46	5.97	7.48
	4H	8.97	9.44	10.09	10.54	12.08	4.89	5.36	6.01	6.46	7.99
	6H	9.48	9.88	10.61	11.01	12.54	5.30	5.70	6.43	6.83	8.35
	8H	9.66	10.03	10.79	11.15	12.69	5.43	5.80	6.56	6.92	8.46
	12H	9.75	10.09	10.89	11.22	12.76	5.49	5.83	6.63	6.96	8.51
8H	4H	8.93	9.31	10.06	10.42	11.96	5.16	5.54	6.29	6.66	8.19
	6H	9.50	9.80	10.64	10.97	12.50	5.68	5.99	6.83	7.15	8.68
	8H	9.72	9.98	10.87	11.13	12.68	5.87	6.14	7.02	7.28	8.84
	12H	9.85	10.09	11.01	11.23	12.82	5.99	6.22	7.14	7.36	8.95
12H	4H	8.88	9.22	10.02	10.35	11.89	5.16	5.50	6.31	6.63	8.18
	6H	9.47	9.74	10.63	10.88	12.44	5.73	6.00	6.88	7.14	8.70
	8H	9.69	9.93	10.85	11.07	12.66	5.94	6.17	7.09	7.31	8.90

END OF REPORT