

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: P919738

Luminaire Tested: DFN2DIP-PN4F0-100D060US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919738
REPORT IS A COMBINATION OF REPORTS P899658 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-100D060US935-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

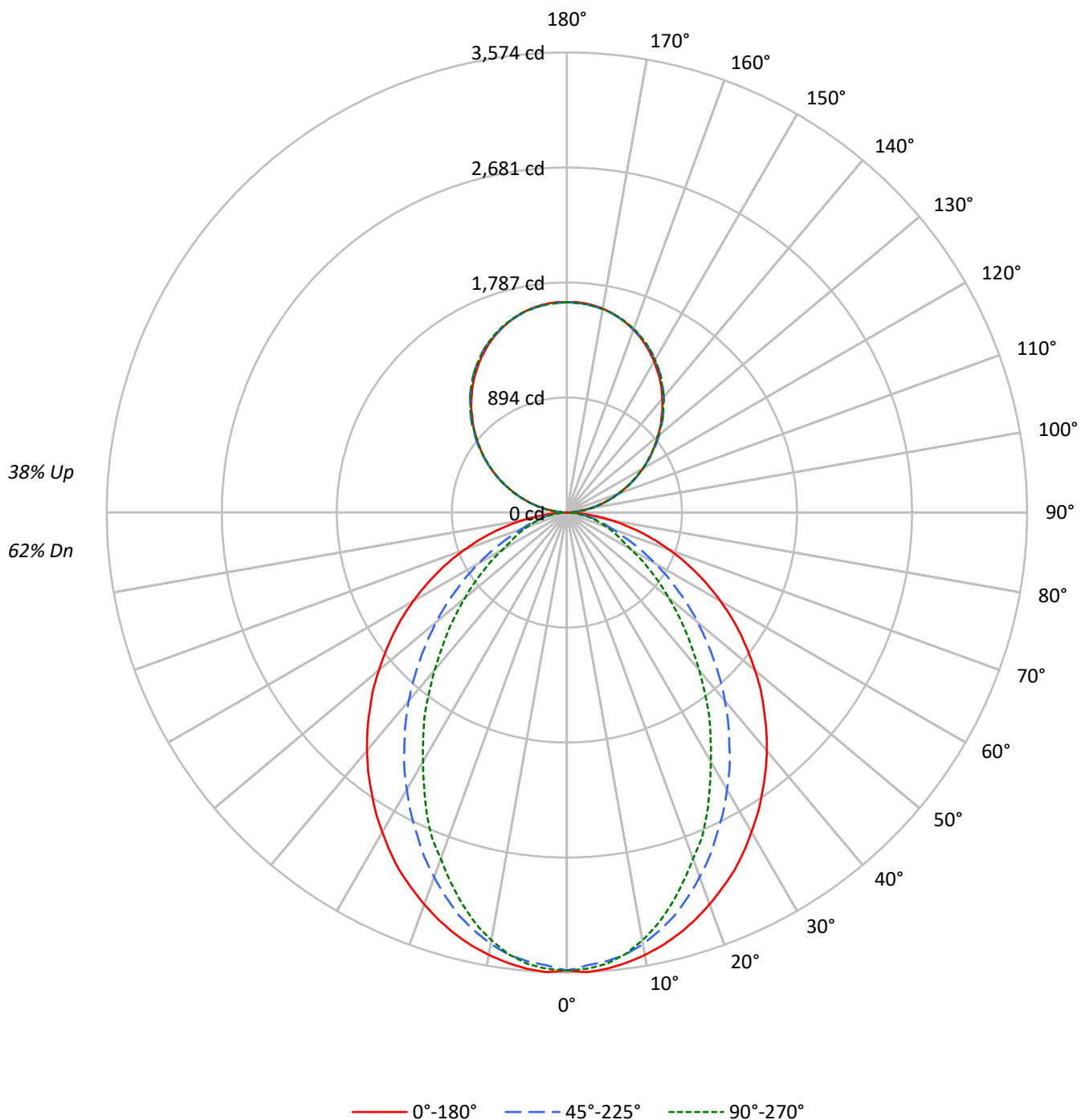
Lumens per Lamp: N/A
Luminaire Lumens: 11890.4 lumens
Efficiency: N/A
Efficacy: 81.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 146.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P919738

CATALOG NUMBER: DFN2DIP-PN4F0-100D060US935-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P919738

CATALOG NUMBER: DFN2DIP-PN4F0-100D060US935-RLLFLL

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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67
1	101	97	93	90	94	91	88	85	80	77	75	69	68	66	60	59	58
2	92	85	79	74	86	80	75	70	71	67	63	62	59	56	53	51	49
3	85	75	68	63	79	71	65	60	63	58	54	55	51	48	48	45	43
4	78	67	60	54	73	63	57	51	56	51	46	49	45	42	43	40	37
5	72	60	52	46	67	57	50	44	51	45	41	45	40	37	39	36	33
6	66	54	46	41	62	51	44	39	46	40	36	41	36	32	36	32	29
7	62	49	42	36	58	47	40	35	42	36	32	37	33	29	33	29	26
8	57	45	37	32	54	43	36	31	38	33	28	34	30	26	30	27	24
9	53	41	34	29	50	39	32	28	35	30	26	32	27	24	28	24	22
10	50	38	31	26	47	36	30	25	33	27	23	29	25	22	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2598	2598	2598
5°	2602	2557	2573
10°	2576	2507	2490
15°	2540	2424	2361
20°	2494	2310	2202
25°	2446	2183	2049
30°	2381	2052	1855
35°	2318	1911	1684
40°	2253	1765	1489
45°	2179	1603	1311
50°	2101	1440	1138
55°	2021	1265	971
60°	1927	1083	800
65°	1820	897	721
70°	1690	724	653
75°	1526	639	595
80°	1289	537	518
85°	898	360	392

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2179 cd/sqm

TEST NUMBER: P919738

CATALOG NUMBER: DFN2DIP-PN4F0-100D060US935-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	333.5	2.8
10°-20°	915.5	7.7
20°-30°	1285.4	10.8
30°-40°	1401.2	11.8
40°-50°	1287.8	10.8
50°-60°	1011.4	8.5
60°-70°	658.3	5.5
70°-80°	338.9	2.8
80°-90°	91.2	0.8
90°-100°	101.1	0.9
100°-110°	321.2	2.7
110°-120°	549.7	4.6
120°-130°	723.0	6.1
130°-140°	811.5	6.8
140°-150°	795.8	6.7
150°-160°	667.5	5.6
160°-170°	442.7	3.7
170°-180°	154.7	1.3
0°-30°	2534.4	21.3
0°-40°	3935.6	33.1
0°-60°	6234.8	52.4
0°-90°	7323.1	61.6
90°-120°	972.0	8.2
90°-150°	3302.3	27.8
90°-180°	4567.0	38.4
0°-180°	11890.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3558	3558	3558	3558	3558	
5°	3558	3542	3500	3530	3520	337
15°	3385	3349	3240	3178	3146	954
25°	3072	2969	2757	2625	2576	1413
35°	2647	2483	2200	1997	1926	1657
45°	2164	1948	1610	1381	1304	1671
55°	1646	1394	1046	854	792	1470
65°	1111	850	560	451	441	1102
75°	592	367	258	235	232	627
85°	138	71	61	61	61	159
90°	2	18	48	45	47	12
95°	72	86	88	88	86	80
105°	296	300	303	306	306	313
115°	552	560	557	556	552	546
125°	802	815	811	806	805	717
135°	1038	1053	1056	1055	1051	802
145°	1260	1270	1278	1279	1274	787
155°	1441	1445	1449	1456	1452	663
165°	1567	1566	1566	1576	1569	442
175°	1631	1627	1624	1634	1625	155
180°	1634	1634	1634	1634	1634	



TEST NUMBER: P919738

CATALOG NUMBER: DFN2DIP-PN4F0-100D060US935-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3558.5	3558.5	3558.5	3558.5	3558.5
2.5°	3574.5	3558.5	3522.9	3555.4	3548.9
5°	3558.5	3542.4	3500.4	3529.5	3519.8
7.5°	3529.5	3510.3	3465.2	3477.8	3461.8
10°	3490.8	3468.3	3404.0	3394.1	3375.0
12.5°	3442.7	3413.6	3326.5	3307.4	3271.8
15°	3384.6	3349.0	3239.7	3178.5	3146.4
17.5°	3316.9	3265.3	3130.1	3059.3	3007.7
20°	3239.7	3175.1	3014.2	2933.9	2862.8
22.5°	3156.0	3081.9	2894.9	2785.7	2737.5
25°	3072.3	2969.2	2756.6	2624.7	2576.2
27.5°	2972.5	2862.8	2627.8	2476.4	2402.3
30°	2866.3	2743.6	2486.0	2322.0	2234.9
32.5°	2763.1	2614.8	2351.0	2157.7	2077.0
35°	2647.2	2482.9	2199.7	1996.7	1925.6
37.5°	2534.5	2357.2	2057.9	1835.5	1755.1
40°	2415.3	2222.2	1909.6	1681.0	1597.3
42.5°	2292.9	2086.9	1761.7	1523.2	1442.9
45°	2164.1	1948.2	1610.3	1381.4	1304.2
47.5°	2041.9	1813.3	1465.4	1236.5	1165.8
50°	1906.5	1677.9	1323.6	1101.2	1033.9
52.5°	1774.3	1532.7	1188.3	975.8	914.6
55°	1645.5	1394.4	1046.5	853.5	792.3
57.5°	1513.6	1255.9	921.2	740.7	689.1
60°	1378.3	1120.7	788.9	624.9	573.3
62.5°	1246.4	988.8	676.1	521.8	496.1
65°	1111.1	850.1	560.3	451.0	441.1
67.5°	982.3	721.3	451.0	396.0	386.4
70°	847.0	595.9	373.4	341.3	328.4
72.5°	718.2	479.7	312.3	286.6	280.2
75°	592.5	367.0	257.6	235.1	232.0
77.5°	467.1	260.7	202.9	189.9	183.5
80°	350.9	186.9	154.5	141.8	141.8
82.5°	244.6	125.7	106.2	99.8	99.8
85°	138.4	70.7	61.1	61.1	61.1
87.5°	51.6	25.7	25.7	22.6	22.6
90°	1.5	17.7	48.3	45.3	46.8
92.5°	30.6	41.4	42.9	44.3	44.3
95°	71.9	85.7	88.2	88.2	85.7
97.5°	119.7	132.5	137.9	137.9	137.9
100°	174.9	186.1	190.1	190.1	188.6
102.5°	233.0	241.3	246.8	248.2	246.8
105°	296.5	300.5	303.4	305.9	305.9
107.5°	359.6	365.5	365.5	366.4	359.6
110°	420.7	428.5	428.5	428.5	424.6



TEST NUMBER: P919738

CATALOG NUMBER: DFN2DIP-PN4F0-100D060US935-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	486.6	495.0	493.5	489.6	486.6
115°	551.6	559.6	557.1	555.6	551.6
117.5°	616.2	627.1	620.1	616.2	612.3
120°	681.2	692.1	681.2	681.2	676.7
122.5°	740.3	754.1	747.2	743.3	740.3
125°	802.4	814.7	810.7	806.3	804.9
127.5°	863.0	878.2	872.8	866.9	863.0
130°	919.6	937.4	934.9	931.9	926.5
132.5°	983.2	996.9	997.9	991.0	987.0
135°	1037.8	1053.1	1056.0	1054.6	1050.6
137.5°	1098.9	1111.2	1113.7	1112.7	1106.8
140°	1152.6	1164.9	1171.8	1171.8	1166.4
142.5°	1207.7	1220.0	1224.0	1225.5	1220.0
145°	1260.0	1269.8	1277.7	1279.2	1273.8
147.5°	1306.7	1319.0	1325.0	1327.4	1322.0
150°	1355.0	1363.4	1368.8	1373.2	1368.8
152.5°	1397.8	1406.3	1413.2	1418.6	1413.2
155°	1440.7	1444.7	1449.1	1456.0	1451.6
157.5°	1477.6	1480.7	1483.1	1493.0	1486.1
160°	1510.7	1513.6	1515.1	1523.4	1517.6
162.5°	1541.2	1541.2	1542.6	1552.0	1545.1
165°	1567.3	1565.8	1565.8	1575.7	1568.8
167.5°	1591.0	1586.6	1586.6	1596.4	1589.5
170°	1608.7	1604.7	1603.3	1613.1	1604.7
172.5°	1621.0	1617.0	1615.6	1625.4	1617.0
175°	1630.8	1626.9	1623.9	1633.8	1625.4
177.5°	1636.2	1632.4	1629.4	1637.7	1629.4
180°	1633.8	1633.8	1633.8	1633.8	1633.8

TEST NUMBER: P919738

CATALOG NUMBER: DFN2DIP-PN4F0-100D060US935-RLFL

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	11.49	12.42	12.35	13.30	14.40	7.45	8.39	8.31	9.26	10.36
	3H	13.18	14.01	14.05	14.90	16.02	8.65	9.49	9.52	10.37	11.50
	4H	13.79	14.58	14.68	15.47	16.61	9.11	9.89	9.99	10.78	11.92
	6H	14.22	14.95	15.12	15.84	16.99	9.43	10.16	10.33	11.06	12.20
	8H	14.35	15.04	15.26	15.96	17.10	9.53	10.22	10.43	11.13	12.28
	12H	14.42	15.08	15.33	15.98	17.16	9.57	10.23	10.49	11.14	12.31
4H	2H	11.52	12.31	12.41	13.20	14.33	8.06	8.85	8.95	9.74	10.88
	3H	13.36	14.02	14.26	14.94	16.09	9.42	10.08	10.33	11.00	12.15
	4H	14.06	14.66	14.97	15.57	16.75	9.98	10.57	10.89	11.49	12.67
	6H	14.58	15.10	15.51	16.04	17.22	10.40	10.92	11.33	11.86	13.04
	8H	14.76	15.24	15.69	16.18	17.37	10.53	11.01	11.46	11.95	13.14
	12H	14.86	15.29	15.81	16.25	17.44	10.60	11.04	11.55	11.99	13.19
8H	4H	14.03	14.51	14.96	15.45	16.64	10.27	10.74	11.20	11.68	12.87
	6H	14.61	15.00	15.56	15.98	17.17	10.79	11.18	11.74	12.16	13.35
	8H	14.83	15.18	15.79	16.15	17.35	10.98	11.33	11.95	12.30	13.51
	12H	14.97	15.28	15.94	16.24	17.50	11.11	11.41	12.07	12.37	13.63
12H	4H	13.99	14.42	14.94	15.38	16.57	10.28	10.71	11.22	11.66	12.86
	6H	14.58	14.93	15.55	15.90	17.11	10.84	11.19	11.80	12.16	13.37
	8H	14.81	15.12	15.78	16.08	17.34	11.06	11.36	12.02	12.32	13.58