

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: P925158

Luminaire Tested: DFN2DIP-PN4F0-090D060US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925158
REPORT IS A COMBINATION OF REPORTS P899656 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-090D060US950-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

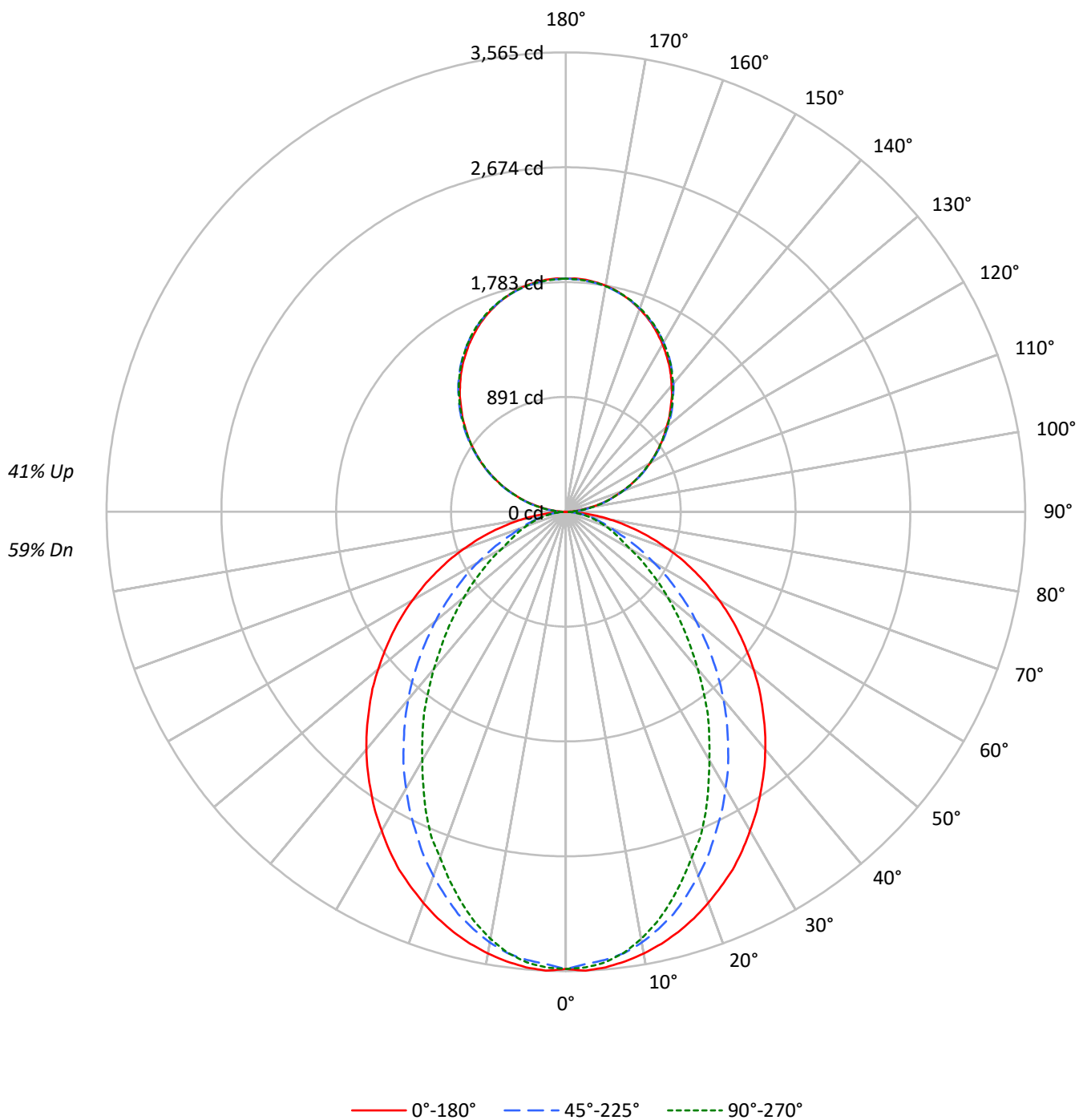
Lumens per Lamp: N/A
Luminaire Lumens: 12363.9 lumens
Efficiency: N/A
Efficacy: 92.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 133.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P925158

CATALOG NUMBER: DFN2DIP-PN4F0-090D060US950-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P925158

CATALOG NUMBER: DFN2DIP-PN4F0-090D060US950-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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2590	2590	2590
5°	2594	2550	2566
10°	2569	2500	2483
15°	2533	2418	2354
20°	2487	2304	2196
25°	2439	2177	2044
30°	2374	2046	1850
35°	2311	1906	1680
40°	2247	1760	1485
45°	2173	1599	1308
50°	2096	1436	1135
55°	2015	1262	969
60°	1922	1080	798
65°	1815	895	719
70°	1685	722	651
75°	1522	637	593
80°	1286	535	516
85°	895	360	391

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2173 cd/sqm

TEST NUMBER: P925158

CATALOG NUMBER: DFN2DIP-PN4F0-090D060US950-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	332.6	2.7
10°-20°	913.0	7.4
20°-30°	1281.8	10.4
30°-40°	1397.3	11.3
40°-50°	1284.2	10.4
50°-60°	1008.6	8.2
60°-70°	656.5	5.3
70°-80°	337.9	2.7
80°-90°	91.4	0.7
90°-100°	112.0	0.9
100°-110°	355.9	2.9
110°-120°	609.1	4.9
120°-130°	801.1	6.5
130°-140°	899.2	7.3
140°-150°	881.7	7.1
150°-160°	739.6	6.0
160°-170°	490.5	4.0
170°-180°	171.4	1.4
0°-30°	2527.4	20.4
0°-40°	3924.6	31.7
0°-60°	6217.4	50.3
0°-90°	7303.3	59.1
90°-120°	1077.0	8.7
90°-150°	3659.0	29.6
90°-180°	5061.0	40.9
0°-180°	12363.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3549	3549	3549	3549	3549	
5°	3549	3533	3491	3520	3510	336
15°	3375	3340	3231	3170	3138	951
25°	3064	2961	2749	2617	2569	1409
35°	2640	2476	2194	1991	1920	1652
45°	2158	1943	1606	1378	1300	1667
55°	1641	1390	1044	851	790	1466
65°	1108	848	559	450	440	1099
75°	591	366	257	234	231	625
85°	138	70	61	61	61	158
90°	2	20	54	50	52	12
95°	80	95	98	98	95	89
105°	329	333	336	339	339	347
115°	611	620	617	616	611	605
125°	889	903	898	893	892	794
135°	1150	1167	1170	1168	1164	889
145°	1396	1407	1416	1417	1411	872
155°	1596	1601	1606	1613	1608	735
165°	1737	1735	1735	1746	1738	490
175°	1807	1803	1799	1810	1801	172
180°	1810	1810	1810	1810	1810	

TEST NUMBER: P925158

CATALOG NUMBER: DFN2DIP-PN4F0-090D060US950-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3548.6	3548.6	3548.6	3548.6	3548.6
2.5°	3564.6	3548.6	3513.1	3545.5	3539.1
5°	3548.6	3532.6	3490.7	3519.6	3510.1
7.5°	3519.6	3500.5	3455.6	3468.2	3452.1
10°	3481.1	3458.6	3394.6	3384.7	3365.6
12.5°	3433.1	3404.2	3317.2	3298.2	3262.7
15°	3375.2	3339.8	3230.7	3169.7	3137.7
17.5°	3307.7	3256.3	3121.3	3050.8	2999.4
20°	3230.7	3166.3	3005.8	2925.7	2854.8
22.5°	3147.2	3073.3	2886.9	2777.9	2729.9
25°	3063.8	2960.8	2749.0	2617.4	2569.0
27.5°	2964.3	2854.8	2620.4	2469.5	2395.6
30°	2858.3	2736.0	2479.1	2315.5	2228.6
32.5°	2755.3	2607.5	2344.5	2151.7	2071.2
35°	2639.9	2476.0	2193.5	1991.2	1920.3
37.5°	2527.4	2350.7	2052.1	1830.3	1750.3
40°	2408.6	2216.0	1904.3	1676.4	1592.9
42.5°	2286.5	2081.2	1756.7	1519.0	1438.8
45°	2158.1	1942.8	1605.8	1377.5	1300.5
47.5°	2036.1	1808.2	1461.3	1233.0	1162.5
50°	1901.2	1673.2	1320.0	1098.1	1031.0
52.5°	1769.4	1528.5	1185.1	973.1	912.1
55°	1640.9	1390.5	1043.6	851.2	790.1
57.5°	1509.4	1252.5	918.6	738.7	687.3
60°	1374.4	1117.5	786.8	623.2	571.7
62.5°	1243.0	986.1	674.3	520.3	494.7
65°	1108.0	847.7	558.8	449.7	439.9
67.5°	979.6	719.2	449.7	394.9	385.3
70°	844.7	594.2	372.4	340.4	327.4
72.5°	716.2	478.3	311.4	285.8	279.4
75°	590.8	366.0	256.9	234.4	231.3
77.5°	465.7	260.0	202.3	189.5	183.0
80°	349.9	186.4	154.0	141.4	141.4
82.5°	243.9	125.4	106.0	99.5	99.5
85°	137.9	70.5	61.0	61.0	61.0
87.5°	51.4	25.6	25.6	22.5	22.5
90°	1.6	19.7	53.5	50.2	51.8
92.5°	33.9	45.9	47.5	49.1	49.1
95°	79.7	94.9	97.7	97.7	94.9
97.5°	132.6	146.8	152.8	152.8	152.8
100°	193.8	206.3	210.6	210.6	209.0
102.5°	258.2	267.4	273.4	275.0	273.4
105°	328.6	332.9	336.2	339.0	339.0
107.5°	398.4	405.0	405.0	406.0	398.4
110°	466.1	474.8	474.8	474.8	470.4

TEST NUMBER: P925158

CATALOG NUMBER: DFN2DIP-PN4F0-090D060US950-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	539.2	548.5	546.8	542.4	539.2
115°	611.2	620.0	617.2	615.6	611.2
117.5°	682.8	694.8	687.1	682.8	678.4
120°	754.8	766.8	754.8	754.8	749.8
122.5°	820.2	835.5	827.9	823.6	820.2
125°	889.0	902.7	898.3	893.4	891.8
127.5°	956.2	973.1	967.1	960.6	956.2
130°	1019.0	1038.6	1035.9	1032.6	1026.6
132.5°	1089.4	1104.6	1105.7	1098.1	1093.7
135°	1150.0	1166.8	1170.1	1168.5	1164.1
137.5°	1217.6	1231.2	1234.0	1232.9	1226.4
140°	1277.1	1290.8	1298.4	1298.4	1292.4
142.5°	1338.2	1351.8	1356.2	1357.8	1351.8
145°	1396.1	1407.0	1415.7	1417.4	1411.3
147.5°	1447.9	1461.5	1468.1	1470.8	1464.8
150°	1501.4	1510.7	1516.7	1521.5	1516.7
152.5°	1548.8	1558.2	1565.8	1571.8	1565.8
155°	1596.3	1600.7	1605.6	1613.3	1608.3
157.5°	1637.3	1640.6	1643.3	1654.2	1646.6
160°	1673.9	1677.1	1678.8	1688.0	1681.5
162.5°	1707.7	1707.7	1709.3	1719.7	1712.0
165°	1736.6	1734.9	1734.9	1745.9	1738.3
167.5°	1762.8	1757.9	1757.9	1768.8	1761.2
170°	1782.5	1778.1	1776.4	1787.3	1778.1
172.5°	1796.1	1791.7	1790.1	1801.0	1791.7
175°	1807.0	1802.7	1799.3	1810.3	1801.0
177.5°	1813.0	1808.7	1805.3	1814.6	1805.3
180°	1810.3	1810.3	1810.3	1810.3	1810.3

TEST NUMBER: P925158

CATALOG NUMBER: DFN2DIP-PN4F0-090D060US950-RLLFLL

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	11.27	12.18	12.15	13.08	14.21	7.23	8.14	8.11	9.04	10.18
	3H	12.95	13.77	13.85	14.67	15.84	8.43	9.24	9.32	10.15	11.31
	4H	13.57	14.34	14.48	15.25	16.42	8.88	9.65	9.79	10.56	11.74
	6H	14.00	14.70	14.92	15.62	16.81	9.21	9.92	10.13	10.83	12.02
	8H	14.13	14.80	15.06	15.74	16.92	9.30	9.97	10.23	10.91	12.10
	12H	14.19	14.83	15.13	15.76	16.97	9.35	9.99	10.28	10.92	12.13
4H	2H	11.29	12.06	12.21	12.98	14.15	7.84	8.61	8.75	9.52	10.69
	3H	13.13	13.77	14.06	14.72	15.91	9.20	9.84	10.12	10.78	11.97
	4H	13.83	14.41	14.77	15.35	16.57	9.75	10.33	10.68	11.27	12.48
	6H	14.35	14.85	15.30	15.82	17.03	10.17	10.67	11.12	11.64	12.85
	8H	14.53	15.00	15.48	15.96	17.18	10.30	10.77	11.26	11.73	12.96
	12H	14.63	15.05	15.60	16.03	17.26	10.37	10.79	11.34	11.77	13.00
8H	4H	13.81	14.27	14.76	15.23	16.46	10.04	10.50	10.99	11.46	12.69
	6H	14.38	14.76	15.36	15.76	16.99	10.56	10.95	11.54	11.94	13.17
	8H	14.60	14.94	15.58	15.93	17.17	10.75	11.09	11.74	12.08	13.33
	12H	14.74	15.04	15.73	16.02	17.31	10.87	11.18	11.86	12.16	13.45
12H	4H	13.76	14.18	14.73	15.16	16.39	10.05	10.47	11.02	11.44	12.67
	6H	14.35	14.70	15.34	15.68	16.93	10.61	10.95	11.60	11.94	13.18
	8H	14.58	14.88	15.57	15.86	17.15	10.82	11.13	11.81	12.11	13.40