

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: P908786

Luminaire Tested: DFN2DIP-PN4F0-090D050US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908786
REPORT IS A COMBINATION OF REPORTS P899638 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-090D050US840-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

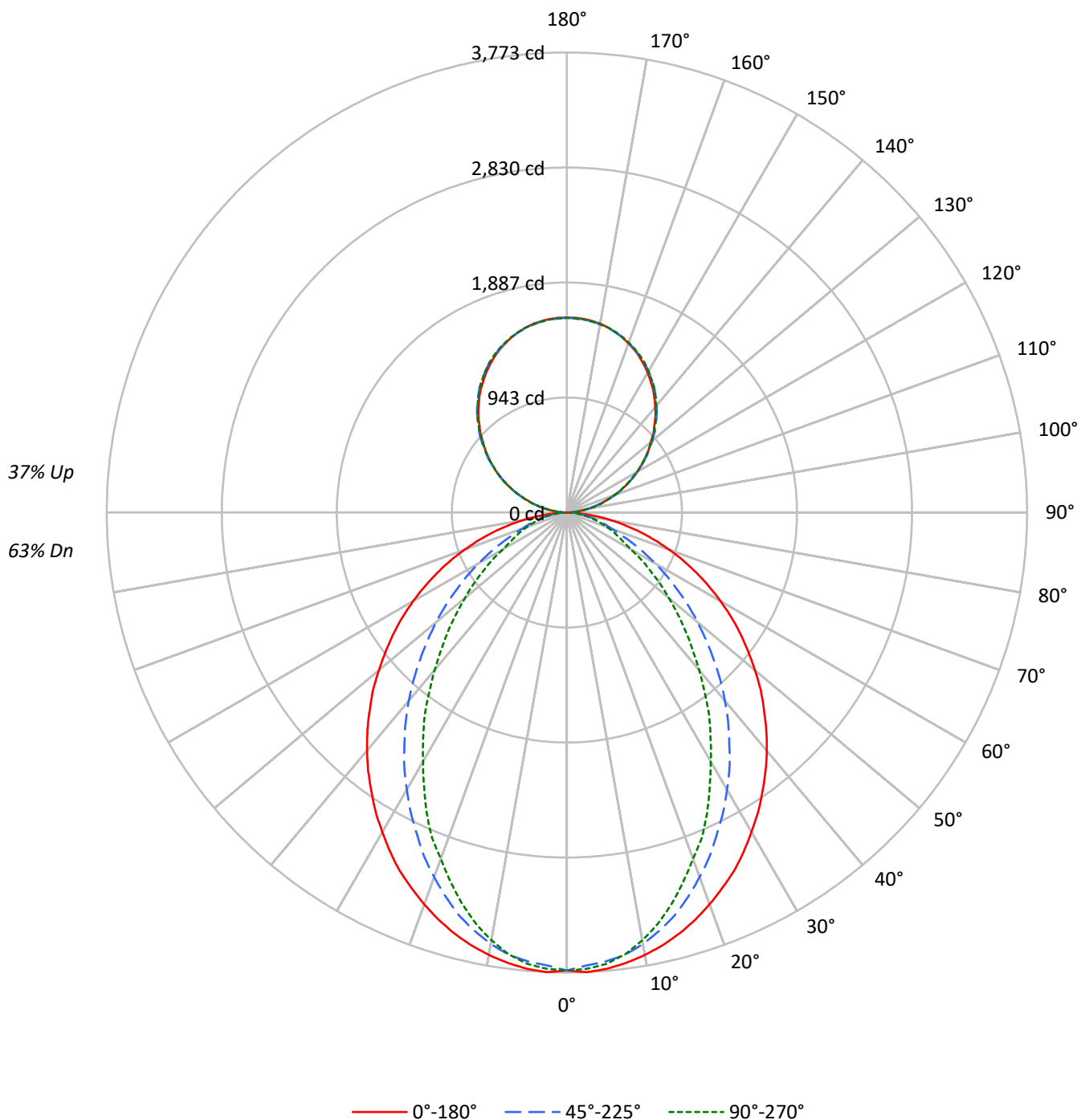
Lumens per Lamp: N/A
Luminaire Lumens: 12194.1 lumens
Efficiency: N/A
Efficacy: 96.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 126
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: P908786

CATALOG NUMBER: DFN2DIP-PN4F0-090D050US840-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P908786

CATALOG NUMBER: DFN2DIP-PN4F0-090D050US840-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
RCR																	
0	110	110	110	110	104	104	104	104	91	91	91		79	79	79		68
1	101	97	93	90	95	91	88	85	81	78	76		71	69	67		61
2	93	86	80	75	87	81	75	71	71	67	64		63	60	57		55
3	85	76	69	63	80	72	65	60	64	59	54		56	52	49		49
4	78	68	60	54	73	64	57	52	57	51	47		50	46	43		44
5	72	61	53	47	68	57	50	45	51	45	41		46	41	37		40
6	67	55	47	41	62	52	45	39	47	41	36		41	37	33		37
7	62	50	42	36	58	47	40	35	42	37	32		38	33	30		34
8	58	45	38	32	54	43	36	31	39	33	29		35	30	27		31
9	54	42	34	29	51	40	33	28	36	30	26		32	28	24		29
10	50	38	31	26	47	37	30	25	33	28	24		30	25	22		27

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2742	2742	2742
5°	2746	2699	2716
10°	2719	2646	2628
15°	2682	2559	2492
20°	2632	2439	2325
25°	2582	2304	2163
30°	2513	2166	1958
35°	2447	2017	1778
40°	2379	1863	1572
45°	2300	1692	1384
50°	2218	1520	1201
55°	2133	1336	1025
60°	2035	1143	844
65°	1921	947	761
70°	1784	764	689
75°	1611	674	628
80°	1361	567	547
85°	948	380	414

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2300 cd/sqm

TEST NUMBER: P908786

CATALOG NUMBER: DFN2DIP-PN4F0-090D050US840-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	352.1	2.9
10°-20°	966.5	7.9
20°-30°	1356.9	11.1
30°-40°	1479.1	12.1
40°-50°	1359.4	11.1
50°-60°	1067.6	8.8
60°-70°	694.9	5.7
70°-80°	357.7	2.9
80°-90°	95.9	0.8
90°-100°	98.8	0.8
100°-110°	314.0	2.6
110°-120°	537.3	4.4
120°-130°	706.6	5.8
130°-140°	793.2	6.5
140°-150°	777.8	6.4
150°-160°	652.5	5.4
160°-170°	432.7	3.5
170°-180°	151.2	1.2
0°-30°	2675.4	21.9
0°-40°	4154.5	34.1
0°-60°	6581.5	54.0
0°-90°	7730.0	63.4
90°-120°	950.1	7.8
90°-150°	3227.7	26.5
90°-180°	4464.0	36.6
0°-180°	12194.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3756	3756	3756	3756	3756	
5°	3756	3739	3695	3726	3716	356
15°	3573	3535	3420	3355	3321	1007
25°	3243	3134	2910	2771	2720	1492
35°	2794	2621	2322	2108	2033	1749
45°	2284	2057	1700	1458	1377	1764
55°	1737	1472	1105	901	836	1552
65°	1173	897	592	476	466	1163
75°	625	387	272	248	245	661
85°	146	75	64	64	64	168
90°	1	17	47	44	46	12
95°	70	84	86	86	84	78
105°	290	294	297	299	299	306
115°	539	547	544	543	539	533
125°	784	796	792	788	787	701
135°	1014	1029	1032	1031	1027	784
145°	1232	1241	1249	1250	1245	769
155°	1408	1412	1416	1423	1419	648
165°	1532	1530	1530	1540	1533	432
175°	1594	1590	1587	1597	1589	151
180°	1597	1597	1597	1597	1597	

TEST NUMBER: P908786

CATALOG NUMBER: DFN2DIP-PN4F0-090D050US840-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3756.4	3756.4	3756.4	3756.4	3756.4
2.5°	3773.4	3756.4	3718.8	3753.2	3746.3
5°	3756.4	3739.4	3695.1	3725.7	3715.6
7.5°	3725.7	3705.5	3657.9	3671.3	3654.3
10°	3685.0	3661.2	3593.4	3582.9	3562.7
12.5°	3634.1	3603.5	3511.5	3491.3	3453.7
15°	3572.8	3535.3	3419.9	3355.3	3321.4
17.5°	3501.4	3447.0	3304.1	3229.4	3175.0
20°	3419.9	3351.7	3181.8	3097.1	3022.0
22.5°	3331.5	3253.3	3056.0	2940.5	2889.7
25°	3243.2	3134.2	2909.9	2770.7	2719.5
27.5°	3137.9	3022.0	2773.9	2614.1	2535.9
30°	3025.7	2896.2	2624.2	2451.1	2359.1
32.5°	2916.7	2760.2	2481.7	2277.7	2192.5
35°	2794.5	2621.0	2322.0	2107.8	2032.8
37.5°	2675.4	2488.3	2172.3	1937.5	1852.8
40°	2549.6	2345.8	2015.8	1774.5	1686.2
42.5°	2420.4	2203.0	1859.6	1607.9	1523.1
45°	2284.5	2056.6	1699.8	1458.1	1376.6
47.5°	2155.4	1914.1	1546.9	1305.3	1230.6
50°	2012.6	1771.2	1397.2	1162.5	1091.4
52.5°	1873.0	1618.0	1254.5	1030.1	965.5
55°	1737.0	1471.9	1104.7	901.0	836.4
57.5°	1597.8	1325.9	972.4	781.9	727.5
60°	1454.9	1183.0	832.8	659.6	605.2
62.5°	1315.8	1043.8	713.8	550.8	523.7
65°	1172.9	897.4	591.5	476.1	465.6
67.5°	1036.9	761.3	476.1	418.0	407.9
70°	894.1	629.0	394.3	360.3	346.6
72.5°	758.1	506.3	329.6	302.6	295.8
75°	625.4	387.4	272.0	248.1	244.9
77.5°	493.0	275.2	214.2	200.6	193.7
80°	370.4	197.3	163.0	149.7	149.7
82.5°	258.2	132.7	112.2	105.3	105.3
85°	146.0	74.6	64.5	64.5	64.5
87.5°	54.4	27.1	27.1	23.8	23.8
90°	1.4	17.4	47.2	44.3	45.7
92.5°	29.9	40.4	41.9	43.3	43.3
95°	70.3	83.8	86.1	86.1	83.8
97.5°	116.9	129.5	134.8	134.8	134.8
100°	170.9	182.0	185.8	185.8	184.4
102.5°	227.7	235.9	241.2	242.7	241.2
105°	289.8	293.7	296.6	298.9	298.9
107.5°	351.4	357.2	357.2	358.2	351.4
110°	411.1	418.9	418.9	418.9	415.0

TEST NUMBER: P908786

CATALOG NUMBER: DFN2DIP-PN4F0-090D050US840-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	475.6	483.8	482.4	478.6	475.6
115°	539.2	546.9	544.5	543.1	539.2
117.5°	602.3	612.9	606.1	602.3	598.4
120°	665.8	676.4	665.8	665.8	661.5
122.5°	723.6	737.1	730.3	726.5	723.6
125°	784.3	796.3	792.4	788.1	786.7
127.5°	843.4	858.4	853.1	847.3	843.4
130°	898.9	916.2	913.7	910.9	905.5
132.5°	961.0	974.4	975.4	968.7	964.8
135°	1014.4	1029.3	1032.2	1030.8	1026.9
137.5°	1074.1	1086.1	1088.5	1087.5	1081.8
140°	1126.5	1138.6	1145.3	1145.3	1140.0
142.5°	1180.4	1192.6	1196.4	1197.8	1192.6
145°	1231.5	1241.1	1248.8	1250.3	1245.0
147.5°	1277.3	1289.3	1295.1	1297.5	1292.1
150°	1324.4	1332.6	1337.9	1342.2	1337.9
152.5°	1366.3	1374.5	1381.2	1386.5	1381.2
155°	1408.2	1412.0	1416.3	1423.1	1418.8
157.5°	1444.3	1447.1	1449.6	1459.3	1452.5
160°	1476.5	1479.5	1480.9	1489.0	1483.3
162.5°	1506.4	1506.4	1507.8	1517.0	1510.3
165°	1532.0	1530.5	1530.5	1540.1	1533.4
167.5°	1555.0	1550.6	1550.6	1560.3	1553.6
170°	1572.4	1568.5	1567.1	1576.7	1568.5
172.5°	1584.4	1580.5	1579.1	1588.7	1580.5
175°	1594.1	1590.1	1587.3	1596.9	1588.7
177.5°	1599.3	1595.5	1592.6	1600.7	1592.6
180°	1596.9	1596.9	1596.9	1596.9	1596.9

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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	11.82	12.78	12.66	13.63	14.70	7.79	8.74	8.63	9.60	10.67
	3H	13.51	14.37	14.37	15.23	16.33	8.99	9.84	9.84	10.71	11.80
	4H	14.13	14.93	15.00	15.81	16.91	9.44	10.25	10.31	11.12	12.23
	6H	14.56	15.30	15.44	16.18	17.30	9.77	10.51	10.65	11.39	12.51
	8H	14.69	15.40	15.58	16.29	17.41	9.87	10.57	10.76	11.47	12.59
	12H	14.76	15.43	15.65	16.32	17.47	9.91	10.59	10.81	11.48	12.62
4H	2H	11.86	12.66	12.73	13.54	14.64	8.40	9.20	9.28	10.08	11.19
	3H	13.70	14.37	14.59	15.27	16.40	9.76	10.43	10.65	11.34	12.46
	4H	14.40	15.01	15.30	15.91	17.06	10.32	10.92	11.21	11.83	12.98
	6H	14.92	15.45	15.84	16.37	17.53	10.74	11.27	11.66	12.19	13.34
	8H	15.10	15.59	16.02	16.51	17.68	10.88	11.36	11.79	12.28	13.45
	12H	15.21	15.65	16.14	16.58	17.75	10.95	11.39	11.88	12.33	13.49
8H	4H	14.38	14.87	15.29	15.79	16.95	10.61	11.10	11.52	12.02	13.18
	6H	14.95	15.35	15.89	16.32	17.48	11.13	11.54	12.07	12.50	13.66
	8H	15.17	15.53	16.12	16.48	17.66	11.32	11.68	12.27	12.64	13.82
	12H	15.32	15.63	16.27	16.58	17.81	11.45	11.76	12.40	12.71	13.94
12H	4H	14.33	14.77	15.27	15.71	16.88	10.62	11.06	11.55	12.00	13.17
	6H	14.93	15.28	15.88	16.24	17.42	11.18	11.54	12.13	12.49	13.67
	8H	15.15	15.47	16.11	16.42	17.65	11.40	11.71	12.35	12.66	13.89