

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: P908787

Luminaire Tested: DFN2DIP-PN4F0-090D050US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908787
REPORT IS A COMBINATION OF REPORTS P901158 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-090D050US840-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

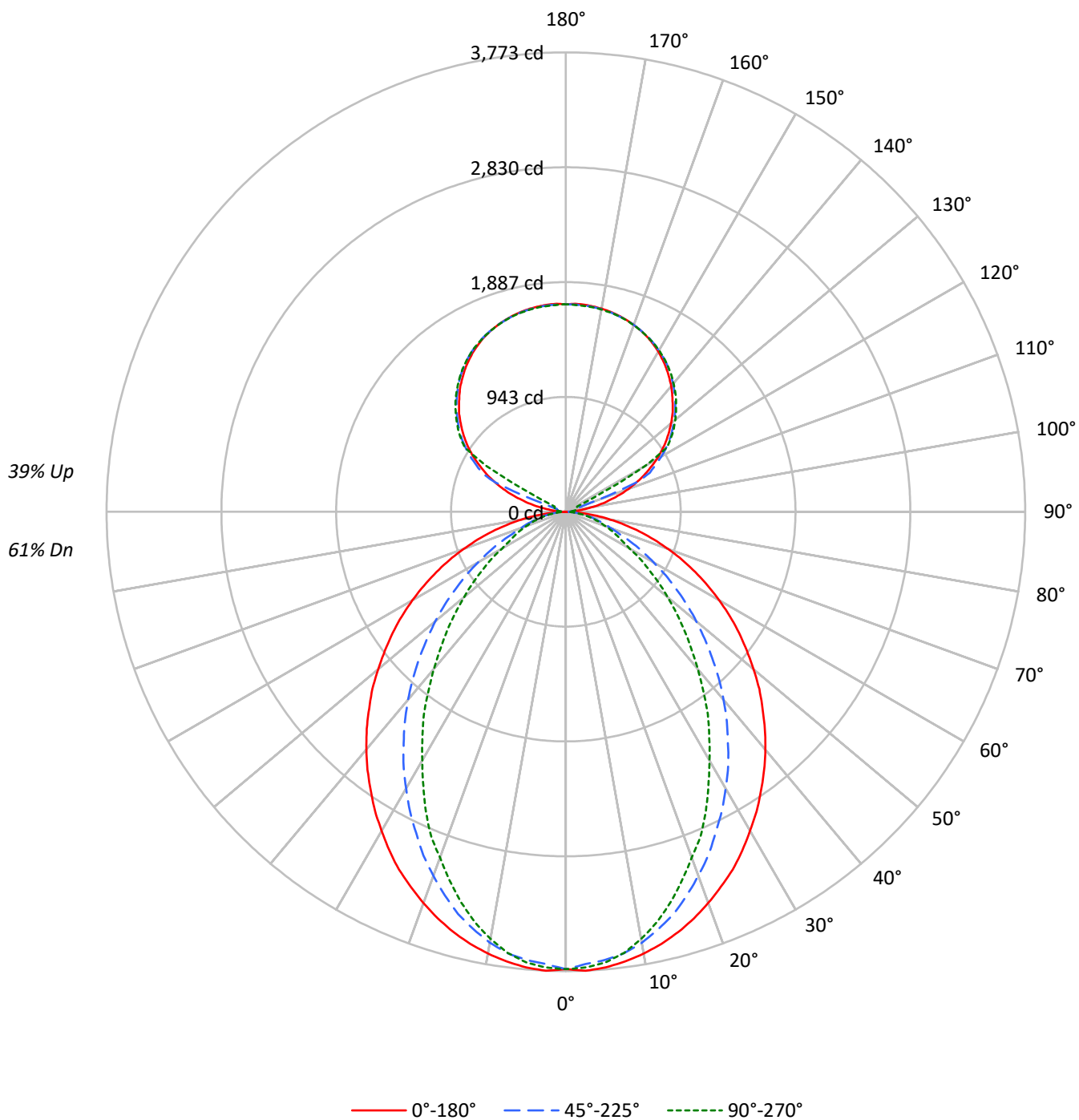
Lumens per Lamp: N/A
Luminaire Lumens: 12724.3 lumens
Efficiency: N/A
Efficacy: 101.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

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

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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	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66
1	101	97	93	90	94	91	87	84	79	77	75	69	67	65	59	58	57
2	92	85	79	74	86	80	75	70	70	66	63	61	58	56	53	51	49
3	85	75	68	62	79	71	65	59	62	58	53	55	51	48	47	45	42
4	78	67	59	53	73	63	56	51	56	50	46	49	45	41	43	40	37
5	72	60	52	46	67	57	50	44	50	45	40	44	40	36	39	35	33
6	66	54	46	41	62	51	44	39	46	40	35	40	36	32	35	32	29
7	61	49	41	36	57	47	39	34	42	36	32	37	32	29	33	29	26
8	57	45	37	32	53	43	36	31	38	32	28	34	29	26	30	26	23
9	53	41	34	29	50	39	32	28	35	30	26	31	27	23	28	24	21
10	50	38	31	26	47	36	30	25	33	27	23	29	25	21	26	22	20

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

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	352.1	2.8
10°-20°	966.5	7.6
20°-30°	1356.9	10.7
30°-40°	1479.1	11.6
40°-50°	1359.4	10.7
50°-60°	1067.6	8.4
60°-70°	694.9	5.5
70°-80°	357.7	2.8
80°-90°	94.3	0.7
90°-100°	56.2	0.4
100°-110°	209.5	1.6
110°-120°	555.6	4.4
120°-130°	921.4	7.2
130°-140°	978.8	7.7
140°-150°	909.7	7.1
150°-160°	731.3	5.7
160°-170°	471.2	3.7
170°-180°	162.2	1.3
0°-30°	2675.4	21.0
0°-40°	4154.5	32.6
0°-60°	6581.5	51.7
0°-90°	7728.5	60.7
90°-120°	821.2	6.5
90°-150°	3631.1	28.5
90°-180°	4996.0	39.3
0°-180°	12724.3	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	15	25	31	33	12
95°	80	39	48	54	53	95
105°	375	412	75	89	94	401
115°	709	730	761	190	101	698
125°	1002	1019	1042	1051	1054	894
135°	1240	1260	1271	1284	1281	958
145°	1439	1438	1459	1467	1461	900
155°	1584	1574	1588	1596	1586	730
165°	1670	1662	1666	1674	1666	472
175°	1708	1699	1702	1710	1698	163
180°	1704	1704	1704	1704	1704	

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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°	1.2	14.7	24.6	30.9	33.2
92.5°	30.9	26.0	29.6	32.1	33.2
95°	80.1	39.4	48.1	54.3	53.0
97.5°	144.2	43.2	62.8	66.7	67.8
100°	218.3	49.4	70.3	80.1	82.6
102.5°	299.6	297.2	72.8	86.2	90.1
105°	374.9	411.9	75.2	88.8	93.7
107.5°	462.4	493.1	77.8	91.2	96.2
110°	546.3	572.1	215.8	92.5	97.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	625.2	647.3	626.4	94.9	98.7
115°	709.0	729.9	760.8	190.0	101.2
117.5°	781.7	806.4	827.5	651.0	328.0
120°	863.1	881.6	903.8	918.7	752.1
122.5°	932.1	951.9	976.6	984.0	985.3
125°	1002.4	1018.6	1042.0	1050.6	1054.3
127.5°	1066.5	1083.8	1102.5	1114.7	1115.9
130°	1127.0	1146.8	1160.2	1173.9	1172.8
132.5°	1188.7	1204.8	1218.2	1229.4	1228.2
135°	1240.5	1260.3	1271.2	1283.7	1281.2
137.5°	1294.6	1309.5	1321.9	1334.2	1330.6
140°	1347.7	1357.7	1371.1	1382.2	1376.1
142.5°	1392.2	1400.9	1416.8	1426.6	1420.5
145°	1439.1	1437.7	1458.6	1467.3	1461.2
147.5°	1479.7	1475.9	1496.9	1503.1	1498.2
150°	1519.1	1510.6	1530.2	1537.6	1531.5
152.5°	1552.4	1542.6	1561.1	1568.5	1559.8
155°	1584.5	1573.5	1588.2	1595.6	1585.8
157.5°	1610.3	1600.5	1611.6	1620.3	1610.3
160°	1632.6	1625.2	1632.6	1639.9	1631.3
162.5°	1652.2	1645.0	1651.0	1659.7	1648.6
165°	1669.5	1662.2	1665.9	1674.5	1665.9
167.5°	1683.1	1675.7	1679.5	1688.1	1677.0
170°	1694.3	1686.8	1689.3	1697.9	1686.8
172.5°	1701.6	1694.3	1696.8	1705.4	1694.3
175°	1707.8	1699.1	1701.6	1710.2	1697.9
177.5°	1710.2	1701.6	1702.9	1711.5	1700.4
180°	1704.0	1704.0	1704.0	1704.0	1704.0

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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	11.61	12.53	12.47	13.42	14.53	7.57	8.50	8.44	9.38	10.49
	3H	13.29	14.12	14.17	15.01	16.15	8.77	9.60	9.65	10.49	11.63
	4H	13.91	14.69	14.80	15.59	16.74	9.22	10.00	10.12	10.90	12.05
	6H	14.34	15.06	15.24	15.96	17.12	9.55	10.27	10.46	11.17	12.34
	8H	14.47	15.15	15.38	16.08	17.24	9.64	10.33	10.56	11.25	12.41
	12H	14.53	15.19	15.45	16.10	17.29	9.69	10.34	10.61	11.26	12.44
4H	2H	11.64	12.42	12.54	13.32	14.46	8.18	8.96	9.08	9.86	11.01
	3H	13.48	14.13	14.39	15.06	16.22	9.54	10.19	10.45	11.12	12.28
	4H	14.18	14.77	15.10	15.69	16.88	10.09	10.68	11.01	11.61	12.80
	6H	14.70	15.21	15.63	16.16	17.35	10.52	11.03	11.45	11.98	13.17
	8H	14.88	15.35	15.81	16.30	17.50	10.65	11.12	11.59	12.07	13.27
	12H	14.98	15.41	15.93	16.37	17.58	10.72	11.15	11.67	12.11	13.32
8H	4H	14.15	14.63	15.09	15.57	16.77	10.38	10.86	11.32	11.80	13.00
	6H	14.72	15.12	15.69	16.10	17.30	10.90	11.30	11.87	12.28	13.48
	8H	14.94	15.29	15.91	16.26	17.48	11.10	11.44	12.07	12.42	13.64
	12H	15.09	15.39	16.06	16.36	17.63	11.22	11.53	12.20	12.49	13.76
12H	4H	14.11	14.53	15.06	15.50	16.70	10.39	10.82	11.35	11.78	12.99
	6H	14.70	15.05	15.67	16.02	17.24	10.95	11.30	11.93	12.28	13.50
	8H	14.93	15.23	15.90	16.20	17.47	11.17	11.48	12.15	12.44	13.71

END OF REPORT