

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: P908399

Luminaire Tested: DFN2DIP-PN2F0-060D050US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908399
REPORT IS A COMBINATION OF REPORTS P901020 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-060D050US840-RLLONL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

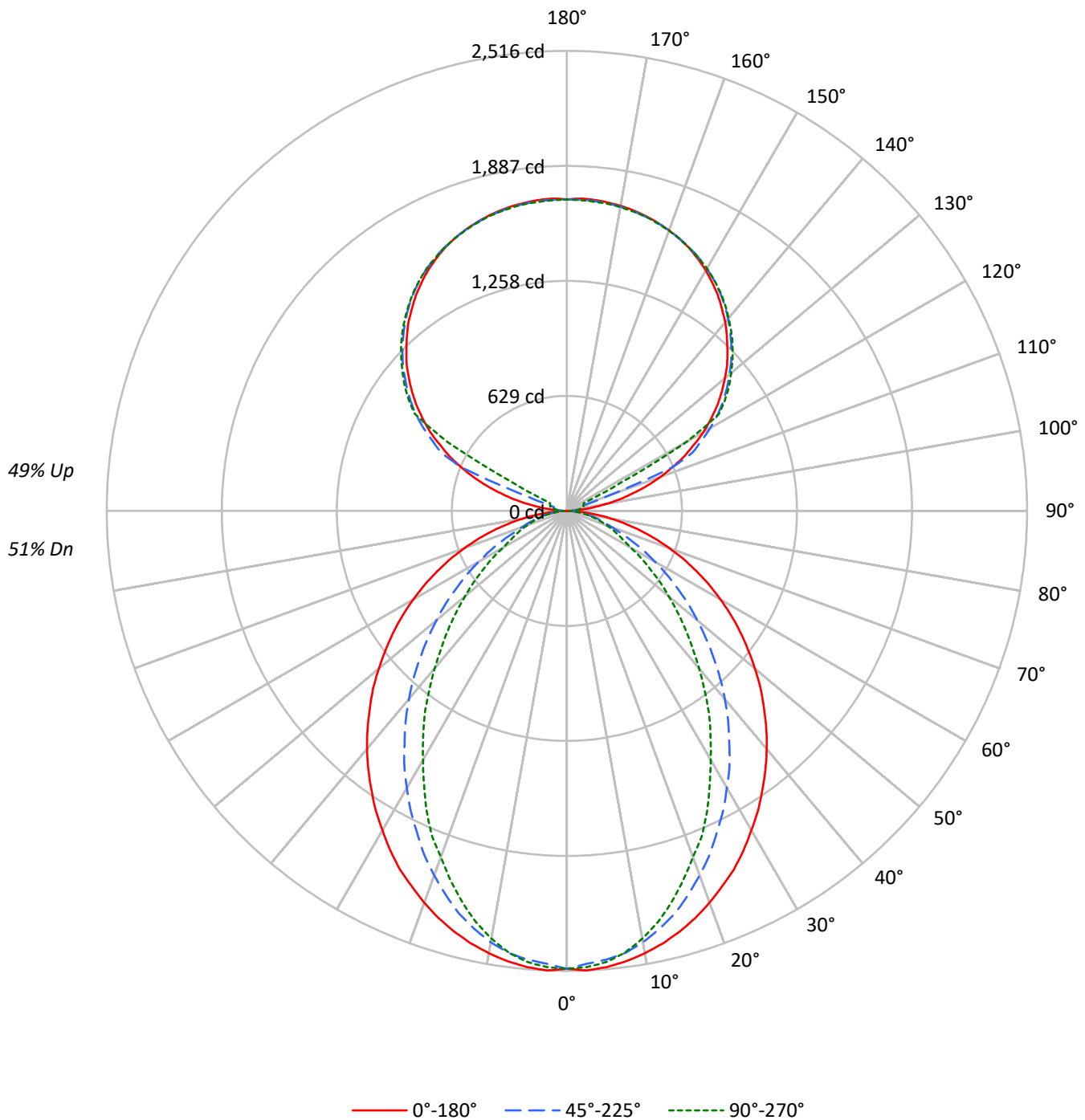
Lumens per Lamp: N/A
Luminaire Lumens: 10149.2 lumens
Efficiency: N/A
Efficacy: 95.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 105.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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
RCR																	
0	107	107	107	107	99	99	99	99	84	84	84		70	70	70		57
1	98	94	91	87	91	87	84	81	74	72	70		62	61	59		51
2	90	83	77	72	83	77	72	67	66	62	59		55	52	50		45
3	82	73	66	61	76	68	62	57	58	54	50		49	46	43		41
4	76	65	58	52	70	61	54	49	52	47	43		44	40	37		37
5	70	58	50	45	64	54	47	42	47	41	37		40	36	33		33
6	64	53	45	39	59	49	42	37	42	37	33		36	32	29		30
7	60	48	40	34	55	45	38	33	39	33	29		33	29	26		28
8	55	43	36	31	51	41	34	29	35	30	26		30	26	23		26
9	52	40	32	27	48	37	31	26	32	27	23		28	24	21		24
10	48	36	29	25	45	34	28	24	30	25	21		26	22	19		22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5424	5424	5424
5°	5424	5326	5364
10°	5361	5210	5181
15°	5279	5027	4904
20°	5173	4779	4567
25°	5064	4503	4242
30°	4920	4221	3832
35°	4779	3919	3471
40°	4635	3607	3060
45°	4469	3264	2688
50°	4297	2918	2324
55°	4116	2550	1975
60°	3906	2167	1618
65°	3663	1779	1448
70°	3369	1417	1299
75°	3000	1227	1166
80°	2467	997	987
85°	1614	619	700

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4469 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.7	2.3
10°-20°	644.3	6.3
20°-30°	904.6	8.9
30°-40°	986.1	9.7
40°-50°	906.3	8.9
50°-60°	711.7	7.0
60°-70°	463.3	4.6
70°-80°	238.5	2.3
80°-90°	63.9	0.6
90°-100°	56.2	0.6
100°-110°	209.5	2.1
110°-120°	555.6	5.5
120°-130°	921.4	9.1
130°-140°	978.8	9.6
140°-150°	909.7	9.0
150°-160°	731.3	7.2
160°-170°	471.2	4.6
170°-180°	162.2	1.6
0°-30°	1783.6	17.6
0°-40°	2769.6	27.3
0°-60°	4387.7	43.2
0°-90°	5153.3	50.8
90°-120°	821.2	8.1
90°-150°	3631.1	35.8
90°-180°	4996.0	49.2
0°-180°	10149.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2504	2504	2504	2504	2504	
5°	2504	2493	2463	2484	2477	237
15°	2382	2357	2280	2237	2214	671
25°	2162	2090	1940	1847	1813	994
35°	1863	1747	1548	1405	1355	1166
45°	1523	1371	1133	972	918	1176
55°	1158	981	736	601	558	1035
65°	782	598	394	317	310	775
75°	417	258	181	165	163	441
85°	97	50	43	43	43	112
90°	1	15	25	31	33	10
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°	2504.3	2504.3	2504.3	2504.3	2504.3
2.5°	2515.6	2504.3	2479.2	2502.0	2497.5
5°	2504.3	2493.0	2463.4	2483.9	2477.1
7.5°	2483.9	2470.3	2438.6	2447.5	2436.2
10°	2456.6	2440.7	2395.6	2388.6	2375.1
12.5°	2422.8	2402.3	2341.0	2327.5	2302.5
15°	2381.9	2356.8	2279.9	2236.9	2214.2
17.5°	2334.3	2297.9	2202.7	2152.9	2116.7
20°	2279.9	2234.4	2121.2	2064.7	2014.7
22.5°	2221.0	2168.8	2037.3	1960.4	1926.4
25°	2162.1	2089.5	1940.0	1847.1	1813.0
27.5°	2091.9	2014.7	1849.3	1742.7	1690.6
30°	2017.1	1930.8	1749.5	1634.1	1572.8
32.5°	1944.5	1840.2	1654.6	1518.4	1461.7
35°	1863.0	1747.4	1548.0	1405.1	1355.1
37.5°	1783.6	1658.8	1448.2	1291.7	1235.2
40°	1699.7	1563.9	1343.8	1183.0	1124.1
42.5°	1613.7	1468.6	1239.7	1071.9	1015.4
45°	1523.0	1371.0	1133.3	972.1	917.8
47.5°	1436.9	1276.1	1031.3	870.2	820.4
50°	1341.7	1180.8	931.5	775.0	727.6
52.5°	1248.6	1078.6	836.3	686.7	643.7
55°	1158.0	981.3	736.5	600.7	557.5
57.5°	1065.2	883.8	648.2	521.3	484.9
60°	970.0	788.7	555.2	439.8	403.4
62.5°	877.2	695.9	475.8	367.2	349.1
65°	781.9	598.2	394.4	317.4	310.4
67.5°	691.3	507.6	317.4	278.7	272.0
70°	596.0	419.3	262.8	240.2	231.1
72.5°	505.4	337.6	219.7	201.8	197.1
75°	417.0	258.2	181.3	165.4	163.3
77.5°	328.7	183.5	142.8	133.7	129.2
80°	246.9	131.5	108.7	99.8	99.8
82.5°	172.2	88.5	74.7	70.2	70.2
85°	97.4	49.8	43.0	43.0	43.0
87.5°	36.4	18.1	18.1	15.9	15.9
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	12.98	13.81	13.93	14.78	16.04	8.95	9.78	9.90	10.75	12.01
	3H	14.63	15.38	15.60	16.36	17.65	10.12	10.87	11.09	11.84	13.13
	4H	15.23	15.94	16.21	16.92	18.21	10.56	11.26	11.54	12.24	13.54
	6H	15.64	16.29	16.63	17.27	18.58	10.86	11.51	11.86	12.50	13.81
	8H	15.75	16.37	16.75	17.37	18.68	10.95	11.56	11.95	12.57	13.87
	12H	15.81	16.40	16.81	17.39	18.72	10.98	11.57	11.99	12.57	13.89
4H	2H	12.99	13.70	13.98	14.68	15.97	9.53	10.24	10.52	11.22	12.51
	3H	14.80	15.39	15.80	16.40	17.70	10.86	11.45	11.86	12.46	13.77
	4H	15.47	16.01	16.48	17.01	18.35	11.40	11.93	12.40	12.94	14.27
	6H	15.97	16.43	16.99	17.46	18.79	11.80	12.26	12.81	13.28	14.61
	8H	16.13	16.57	17.15	17.58	18.93	11.92	12.35	12.93	13.37	14.71
	12H	16.22	16.61	17.25	17.64	18.99	11.97	12.36	13.01	13.40	14.74
8H	4H	15.44	15.87	16.46	16.89	18.23	11.66	12.09	12.68	13.11	14.46
	6H	15.98	16.34	17.02	17.40	18.74	12.16	12.51	13.20	13.58	14.92
	8H	16.19	16.50	17.24	17.55	18.91	12.34	12.65	13.39	13.70	15.06
	12H	16.31	16.59	17.36	17.63	19.03	12.44	12.72	13.50	13.76	15.16
12H	4H	15.39	15.78	16.43	16.81	18.16	11.67	12.05	12.70	13.09	14.44
	6H	15.96	16.27	17.01	17.32	18.68	12.20	12.52	13.25	13.56	14.92
	8H	16.16	16.44	17.22	17.48	18.88	12.40	12.67	13.45	13.72	15.12