

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: P918629

Luminaire Tested: DFN2DIP-4P3F0-060D030US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918629
REPORT IS A COMBINATION OF REPORTS P900568 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D030US935-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

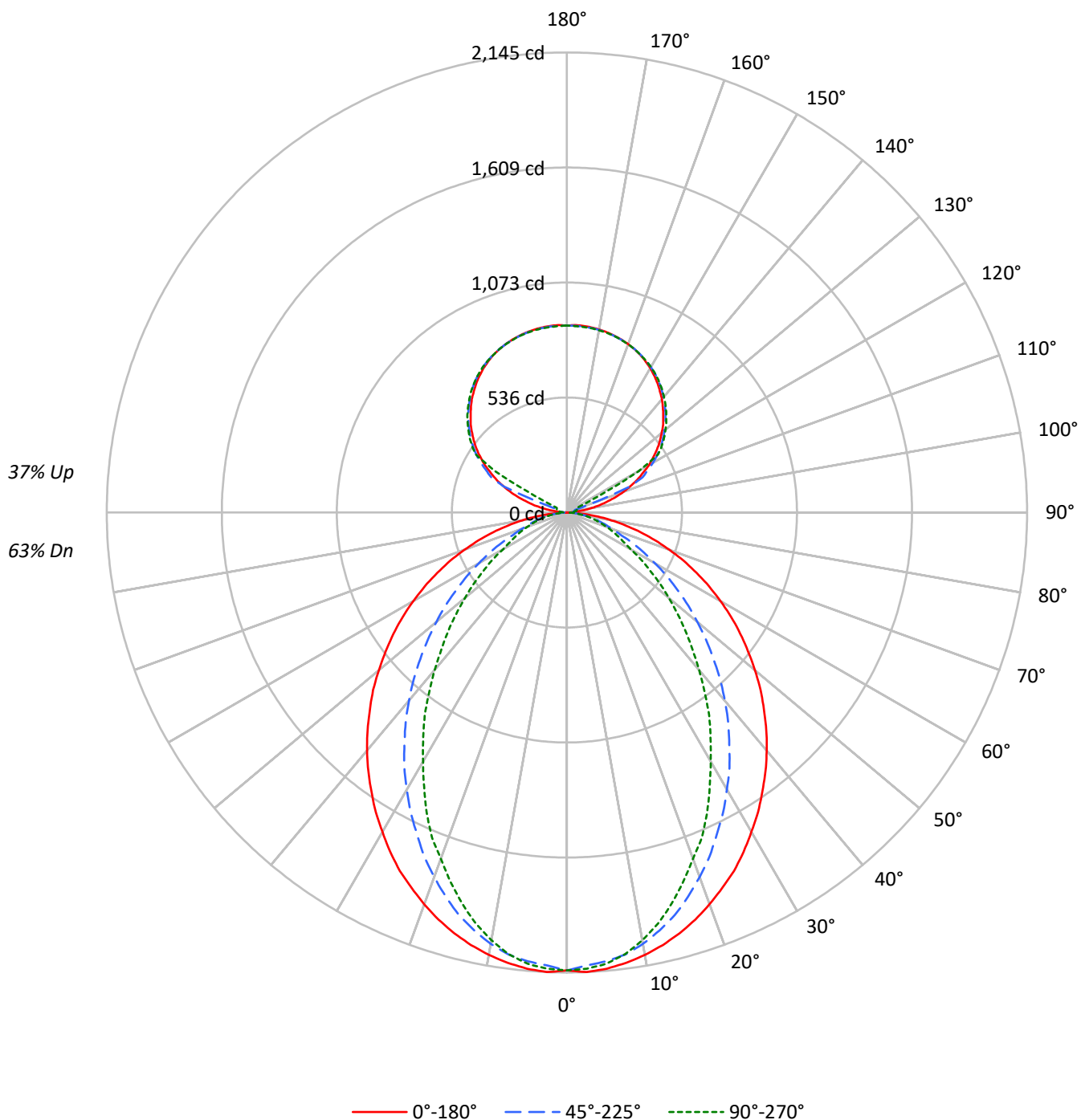
Lumens per Lamp: N/A
Luminaire Lumens: 6948.3 lumens
Efficiency: N/A
Efficacy: 82.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 84.3
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	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2433	2433	2433
5°	2436	2393	2409
10°	2410	2345	2330
15°	2375	2265	2208
20°	2330	2157	2059
25°	2283	2036	1915
30°	2221	1912	1732
35°	2161	1779	1572
40°	2098	1641	1388
45°	2027	1489	1221
50°	1952	1335	1059
55°	1874	1171	903
60°	1784	999	742
65°	1681	825	667
70°	1554	663	603
75°	1396	581	547
80°	1166	482	471
85°	791	314	350

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2027 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	200.1	2.9
10°-20°	549.3	7.9
20°-30°	771.2	11.1
30°-40°	840.7	12.1
40°-50°	772.7	11.1
50°-60°	606.8	8.7
60°-70°	395.0	5.7
70°-80°	203.3	2.9
80°-90°	53.4	0.8
90°-100°	28.7	0.4
100°-110°	107.2	1.5
110°-120°	284.2	4.1
120°-130°	471.3	6.8
130°-140°	500.7	7.2
140°-150°	465.3	6.7
150°-160°	374.1	5.4
160°-170°	241.1	3.5
170°-180°	83.0	1.2
0°-30°	1520.7	21.9
0°-40°	2361.4	34.0
0°-60°	3740.9	53.8
0°-90°	4392.6	63.2
90°-120°	420.1	6.0
90°-150°	1857.5	26.7
90°-180°	2556.0	36.8
0°-180°	6948.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2135	2135	2135	2135	2135	
5°	2135	2126	2100	2118	2112	202
15°	2031	2009	1944	1907	1888	572
25°	1843	1782	1654	1575	1546	848
35°	1588	1490	1320	1198	1155	994
45°	1298	1169	966	829	782	1003
55°	987	837	628	512	475	882
65°	667	510	336	271	265	661
75°	356	220	154	141	139	376
85°	83	42	37	37	37	95
90°	1	8	13	16	17	7
95°	41	20	24	28	27	49
105°	192	211	38	45	48	205
115°	363	373	389	97	52	357
125°	513	521	533	537	539	457
135°	635	645	650	657	655	490
145°	736	736	746	751	747	460
155°	810	805	812	816	811	373
165°	854	850	852	857	852	241
175°	874	869	870	875	869	83
180°	872	872	872	872	872	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2135.1	2135.1	2135.1	2135.1	2135.1
2.5°	2144.7	2135.1	2113.7	2133.2	2129.3
5°	2135.1	2125.5	2100.2	2117.7	2111.9
7.5°	2117.7	2106.2	2079.1	2086.7	2077.1
10°	2094.5	2080.9	2042.5	2036.5	2025.0
12.5°	2065.6	2048.1	1995.9	1984.4	1963.1
15°	2030.7	2009.4	1943.8	1907.1	1887.8
17.5°	1990.2	1959.2	1878.0	1835.6	1804.7
20°	1943.8	1905.0	1808.5	1760.3	1717.7
22.5°	1893.6	1849.1	1737.0	1671.4	1642.4
25°	1843.4	1781.5	1654.0	1574.9	1545.7
27.5°	1783.6	1717.7	1576.7	1485.8	1441.4
30°	1719.8	1646.1	1491.6	1393.2	1340.9
32.5°	1657.9	1568.9	1410.7	1294.6	1246.2
35°	1588.4	1489.8	1319.8	1198.0	1155.4
37.5°	1520.7	1414.3	1234.8	1101.3	1053.1
40°	1449.1	1333.3	1145.7	1008.6	958.4
42.5°	1375.8	1252.1	1057.0	913.9	865.7
45°	1298.5	1168.9	966.2	828.8	782.5
47.5°	1225.1	1088.0	879.3	741.9	699.5
50°	1143.9	1006.8	794.2	660.7	620.3
52.5°	1064.5	919.6	713.0	585.5	548.8
55°	987.3	836.6	627.9	512.1	475.4
57.5°	908.2	753.5	552.7	444.4	413.5
60°	827.0	672.4	473.4	375.0	344.0
62.5°	747.9	593.3	405.7	313.1	297.6
65°	666.7	510.1	336.2	270.6	264.7
67.5°	589.4	432.7	270.6	237.6	231.9
70°	508.2	357.5	224.0	204.8	197.0
72.5°	430.9	287.8	187.4	172.0	168.1
75°	355.5	220.2	154.5	141.0	139.2
77.5°	280.3	156.4	121.7	114.0	110.1
80°	210.5	112.1	92.6	85.1	85.1
82.5°	146.8	75.4	63.7	59.8	59.8
85°	83.0	42.4	36.7	36.7	36.7
87.5°	31.0	15.4	15.4	13.5	13.5
90°	0.6	7.6	12.6	15.8	17.0
92.5°	15.8	13.3	15.2	16.4	17.0
95°	41.0	20.1	24.5	27.8	27.1
97.5°	73.8	22.1	32.1	34.1	34.7
100°	111.7	25.2	36.0	41.0	42.3
102.5°	153.3	152.1	37.2	44.1	46.1
105°	191.7	210.7	38.5	45.4	48.0
107.5°	236.5	252.3	39.8	46.7	49.2
110°	279.5	292.7	110.4	47.4	49.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	319.9	331.1	320.5	48.6	50.5
115°	362.7	373.4	389.2	97.1	51.7
117.5°	399.9	412.5	423.3	333.0	167.8
120°	441.5	451.0	462.4	469.9	384.8
122.5°	476.8	487.0	499.6	503.3	504.0
125°	512.8	521.0	533.0	537.4	539.3
127.5°	545.6	554.4	564.0	570.2	570.8
130°	576.5	586.7	593.6	600.5	599.9
132.5°	608.0	616.3	623.2	628.9	628.3
135°	634.6	644.7	650.3	656.7	655.4
137.5°	662.3	669.9	676.2	682.5	680.6
140°	689.4	694.5	701.4	707.1	704.0
142.5°	712.2	716.6	724.8	729.8	726.7
145°	736.2	735.5	746.2	750.6	747.4
147.5°	756.9	755.0	765.8	768.9	766.4
150°	777.1	772.7	782.8	786.5	783.4
152.5°	794.1	789.1	798.6	802.4	798.0
155°	810.5	804.9	812.4	816.2	811.2
157.5°	823.8	818.8	824.5	828.9	823.8
160°	835.2	831.4	835.2	839.0	834.5
162.5°	845.2	841.5	844.6	849.0	843.3
165°	854.0	850.3	852.2	856.6	852.2
167.5°	861.0	857.2	859.1	863.6	857.9
170°	866.7	862.9	864.2	868.6	862.9
172.5°	870.5	866.7	868.0	872.4	866.7
175°	873.6	869.2	870.5	874.9	868.6
177.5°	874.9	870.5	871.2	875.5	869.9
180°	871.8	871.8	871.8	871.8	871.8

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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	11.35	12.31	12.20	13.16	14.24	7.32	8.27	8.16	9.13	10.20
	3H	13.04	13.89	13.89	14.76	15.86	8.51	9.36	9.36	10.23	11.33
	4H	13.65	14.45	14.52	15.33	16.44	8.96	9.76	9.83	10.64	11.75
	6H	14.07	14.81	14.96	15.69	16.82	9.28	10.02	10.16	10.90	12.02
	8H	14.20	14.90	15.09	15.80	16.93	9.37	10.07	10.26	10.97	12.10
	12H	14.26	14.93	15.16	15.83	16.97	9.42	10.08	10.31	10.98	12.13
4H	2H	11.39	12.19	12.26	13.06	14.17	7.92	8.73	8.80	9.60	10.71
	3H	13.22	13.89	14.11	14.80	15.92	9.28	9.94	10.16	10.85	11.98
	4H	13.91	14.52	14.81	15.42	16.58	9.82	10.43	10.72	11.33	12.49
	6H	14.43	14.95	15.34	15.88	17.04	10.24	10.77	11.16	11.69	12.85
	8H	14.61	15.09	15.52	16.02	17.18	10.37	10.86	11.29	11.78	12.95
	12H	14.70	15.14	15.64	16.08	17.26	10.44	10.88	11.37	11.82	12.99
8H	4H	13.89	14.38	14.81	15.30	16.47	10.11	10.60	11.03	11.52	12.69
	6H	14.45	14.86	15.40	15.82	16.99	10.63	11.03	11.57	11.99	13.16
	8H	14.67	15.02	15.62	15.98	17.16	10.81	11.17	11.76	12.12	13.31
	12H	14.81	15.12	15.76	16.07	17.30	10.93	11.24	11.88	12.19	13.43
12H	4H	13.85	14.29	14.78	15.23	16.40	10.12	10.56	11.05	11.50	12.67
	6H	14.43	14.79	15.38	15.74	16.92	10.67	11.03	11.63	11.99	13.17
	8H	14.65	14.97	15.61	15.91	17.15	10.88	11.20	11.84	12.14	13.38

END OF REPORT