

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: P902266

Luminaire Tested: DFN2DIP-4P3F0-060D050US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902266
REPORT IS A COMBINATION OF REPORTS P899067 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D050US830-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

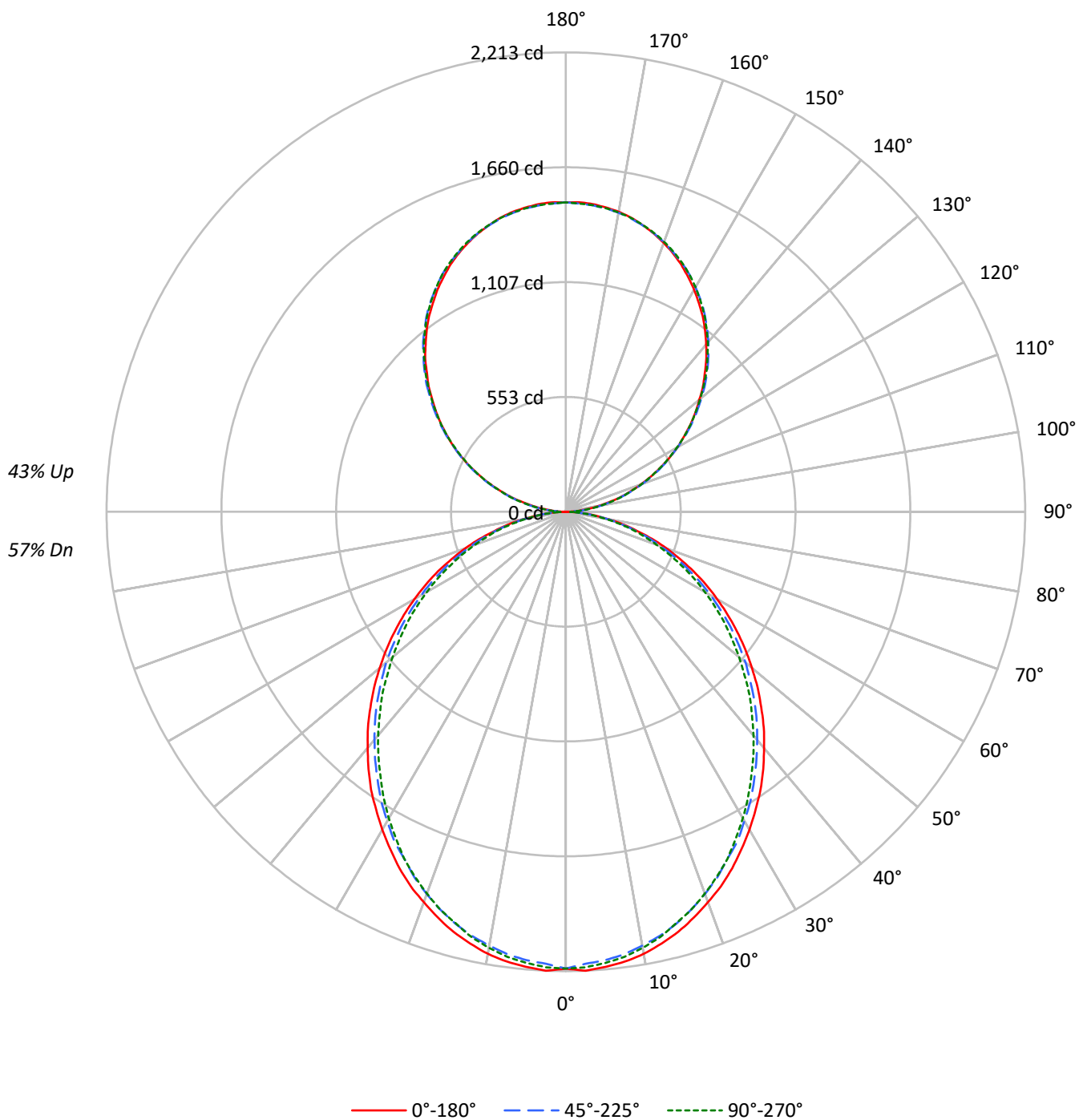
Lumens per Lamp: N/A
Luminaire Lumens: 9769.4 lumens
Efficiency: N/A
Efficacy: 97.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 100.2
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
RCR																	
0	109	109	109	109	101	101	101	101	87	87	87		75	75	75		63
1	99	95	91	88	92	89	85	82	77	74	72		66	64	62		56
2	91	83	77	72	84	78	72	67	67	63	60		58	55	52		49
3	83	73	66	60	77	68	62	56	59	54	50		51	47	44		43
4	76	65	57	51	70	61	53	48	53	47	43		46	41	38		39
5	69	58	49	43	64	54	47	41	47	41	37		41	36	33		35
6	64	52	44	38	59	49	41	36	43	37	32		37	32	29		32
7	59	47	39	33	55	44	37	32	39	33	28		34	29	25		29
8	55	43	35	29	51	40	33	28	35	29	25		31	26	23		27
9	51	39	31	26	48	37	30	25	32	27	23		28	24	20		25
10	48	36	28	24	45	34	27	23	30	24	21		26	22	19		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2508	2508	2508
5°	2510	2471	2489
10°	2488	2436	2454
15°	2450	2394	2401
20°	2399	2337	2346
25°	2348	2269	2283
30°	2285	2205	2203
35°	2225	2130	2118
40°	2151	2055	2038
45°	2078	1979	1955
50°	1997	1899	1860
55°	1912	1807	1772
60°	1817	1698	1671
65°	1712	1584	1552
70°	1579	1446	1424
75°	1395	1280	1304
80°	1173	1068	1078
85°	825	708	706

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2078 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.1	2.1
10°-20°	582.7	6.0
20°-30°	856.4	8.8
30°-40°	994.6	10.2
40°-50°	993.4	10.2
50°-60°	866.2	8.9
60°-70°	640.3	6.6
70°-80°	362.3	3.7
80°-90°	99.9	1.0
90°-100°	92.2	0.9
100°-110°	293.0	3.0
110°-120°	501.5	5.1
120°-130°	659.5	6.8
130°-140°	740.3	7.6
140°-150°	725.9	7.4
150°-160°	609.0	6.2
160°-170°	403.9	4.1
170°-180°	141.2	1.4
0°-30°	1646.2	16.9
0°-40°	2640.9	27.0
0°-60°	4500.5	46.1
0°-90°	5602.9	57.4
90°-120°	886.7	9.1
90°-150°	3012.5	30.8
90°-180°	4167.0	42.7
0°-180°	9769.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2200	2200	2200	2200	2200	
5°	2200	2192	2169	2186	2182	209
15°	2095	2082	2055	2063	2053	590
25°	1896	1879	1843	1847	1843	872
35°	1636	1615	1581	1568	1557	1021
45°	1331	1316	1284	1261	1253	1027
55°	1007	994	969	944	933	901
65°	679	667	646	626	616	672
75°	355	351	340	328	332	379
85°	87	85	83	76	74	97
90°	1	16	44	41	43	9
95°	66	78	80	80	78	73
105°	270	274	277	279	279	285
115°	503	510	508	507	503	498
125°	732	743	740	736	734	654
135°	947	961	963	962	958	732
145°	1149	1158	1166	1167	1162	718
155°	1314	1318	1322	1328	1324	605
165°	1430	1428	1428	1438	1431	403
175°	1488	1484	1482	1490	1483	141
180°	1490	1490	1490	1490	1490	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2200.5	2200.5	2200.5	2200.5	2200.5
2.5°	2213.3	2202.7	2179.3	2200.5	2196.4
5°	2200.5	2192.2	2168.8	2185.7	2181.6
7.5°	2185.7	2173.1	2149.8	2166.8	2162.6
10°	2162.6	2147.8	2122.3	2139.2	2132.9
12.5°	2130.7	2118.1	2092.7	2103.3	2099.0
15°	2094.7	2082.2	2054.6	2063.1	2052.6
17.5°	2050.3	2037.8	2010.2	2020.6	2010.2
20°	2001.6	1989.0	1959.4	1965.7	1957.4
22.5°	1953.1	1934.0	1906.4	1906.4	1902.1
25°	1895.8	1879.1	1843.0	1847.1	1843.0
27.5°	1832.3	1817.5	1790.1	1783.9	1773.3
30°	1769.1	1751.9	1720.3	1714.0	1705.4
32.5°	1701.2	1688.7	1654.7	1641.9	1633.4
35°	1635.7	1614.6	1580.6	1567.8	1557.3
37.5°	1561.6	1542.5	1508.6	1493.7	1483.2
40°	1485.4	1468.4	1434.5	1415.7	1407.1
42.5°	1411.4	1394.3	1360.7	1339.4	1326.7
45°	1331.1	1316.2	1284.3	1261.2	1252.6
47.5°	1252.6	1237.8	1204.0	1180.6	1168.0
50°	1170.1	1159.5	1129.9	1100.2	1089.7
52.5°	1089.7	1074.9	1047.4	1024.2	1009.4
55°	1007.3	994.5	969.1	943.8	933.2
57.5°	924.7	914.2	886.6	861.2	852.6
60°	842.1	833.8	804.2	780.8	774.5
62.5°	761.7	746.9	725.8	704.6	696.2
65°	679.3	666.6	645.5	626.3	615.8
67.5°	594.6	583.9	565.1	550.3	541.7
70°	516.3	507.8	488.7	473.9	465.6
72.5°	435.9	427.4	416.9	402.1	395.8
75°	355.3	351.4	340.5	328.0	332.2
77.5°	283.5	275.0	270.7	264.5	258.2
80°	211.7	209.4	205.2	198.9	194.6
82.5°	143.9	143.9	141.9	133.4	133.4
85°	86.6	84.6	82.6	76.1	74.1
87.5°	38.2	33.9	29.6	23.4	21.1
90°	1.3	16.2	44.0	41.4	42.7
92.5°	27.9	37.7	39.1	40.4	40.4
95°	65.6	78.2	80.4	80.4	78.2
97.5°	109.1	120.8	125.8	125.8	125.8
100°	159.5	169.8	173.4	173.4	172.1
102.5°	212.5	220.2	225.1	226.5	225.1
105°	270.5	274.1	276.8	279.0	279.0
107.5°	328.0	333.4	333.4	334.3	328.0
110°	383.7	391.0	391.0	391.0	387.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	443.9	451.6	450.3	446.7	443.9
115°	503.2	510.5	508.2	506.9	503.2
117.5°	562.1	572.0	565.7	562.1	558.6
120°	621.4	631.3	621.4	621.4	617.4
122.5°	675.3	688.0	681.6	678.1	675.3
125°	732.0	743.2	739.6	735.6	734.2
127.5°	787.2	801.2	796.3	790.8	787.2
130°	839.0	855.1	852.8	850.2	845.2
132.5°	896.9	909.5	910.4	904.1	900.5
135°	946.8	960.6	963.4	962.1	958.5
137.5°	1002.5	1013.7	1016.0	1015.0	1009.7
140°	1051.4	1062.7	1068.9	1068.9	1064.0
142.5°	1101.7	1113.0	1116.6	1117.9	1113.0
145°	1149.4	1158.4	1165.5	1167.0	1162.0
147.5°	1192.1	1203.3	1208.7	1211.0	1206.0
150°	1236.1	1243.8	1248.7	1252.7	1248.7
152.5°	1275.3	1282.9	1289.1	1294.1	1289.1
155°	1314.3	1317.9	1321.9	1328.2	1324.2
157.5°	1348.0	1350.7	1352.9	1362.0	1355.7
160°	1378.1	1380.8	1382.1	1389.8	1384.4
162.5°	1406.0	1406.0	1407.3	1415.9	1409.6
165°	1429.8	1428.4	1428.4	1437.5	1431.2
167.5°	1451.3	1447.3	1447.3	1456.3	1450.0
170°	1467.5	1464.0	1462.6	1471.6	1464.0
172.5°	1478.8	1475.2	1473.9	1482.8	1475.2
175°	1487.8	1484.1	1481.5	1490.4	1482.8
177.5°	1492.7	1489.1	1486.4	1494.0	1486.4
180°	1490.4	1490.4	1490.4	1490.4	1490.4

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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	11.08	12.02	11.98	12.93	14.09	10.64	11.57	11.53	12.48	13.65
	3H	12.75	13.58	13.65	14.50	15.69	12.26	13.09	13.16	14.01	15.20
	4H	13.33	14.12	14.25	15.05	16.25	12.84	13.63	13.76	14.56	15.75
	6H	13.73	14.46	14.66	15.39	16.60	13.23	13.96	14.16	14.89	16.10
	8H	13.84	14.53	14.78	15.48	16.69	13.34	14.03	14.27	14.98	16.19
	12H	13.89	14.55	14.83	15.49	16.73	13.38	14.04	14.32	14.98	16.22
4H	2H	11.55	12.34	12.47	13.27	14.46	11.20	11.99	12.12	12.91	14.11
	3H	13.42	14.08	14.35	15.03	16.24	13.01	13.67	13.94	14.63	15.84
	4H	14.13	14.73	15.07	15.68	16.92	13.71	14.31	14.65	15.26	16.50
	6H	14.64	15.16	15.60	16.14	17.38	14.21	14.73	15.17	15.71	16.94
	8H	14.79	15.28	15.75	16.25	17.50	14.36	14.84	15.32	15.81	17.06
	12H	14.87	15.31	15.85	16.29	17.55	14.42	14.86	15.40	15.84	17.10
8H	4H	14.33	14.81	15.29	15.78	17.03	13.95	14.44	14.91	15.41	16.66
	6H	14.96	15.36	15.94	16.37	17.62	14.57	14.97	15.56	15.99	17.23
	8H	15.17	15.53	16.17	16.53	17.80	14.78	15.14	15.78	16.14	17.40
	12H	15.31	15.62	16.30	16.61	17.92	14.90	15.21	15.89	16.20	17.51
12H	4H	14.32	14.75	15.30	15.74	17.00	13.95	14.39	14.93	15.37	16.63
	6H	14.98	15.34	15.98	16.34	17.61	14.61	14.97	15.61	15.97	17.23
	8H	15.23	15.54	16.22	16.53	17.85	14.85	15.16	15.84	16.15	17.47