

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: P919586

Luminaire Tested: DFN2DIP-PN4F0-060D040US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919586
REPORT IS A COMBINATION OF REPORTS P899614 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-060D040US935-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

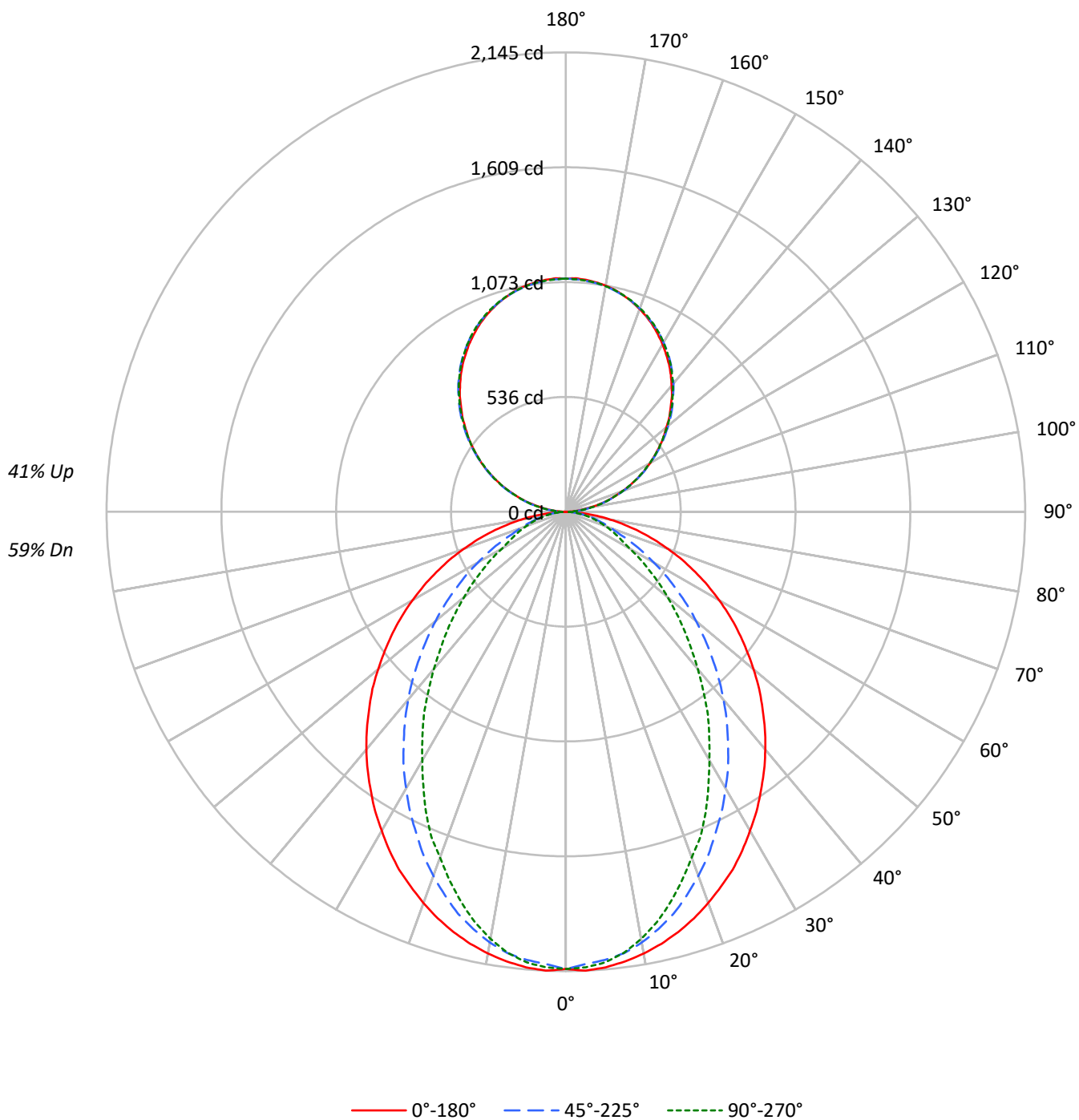
Lumens per Lamp: N/A
Luminaire Lumens: 7439.0 lumens
Efficiency: N/A
Efficacy: 87.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 84.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	102	102	102	102	88	88	88		76	76	76		64
1	100	96	92	89	94	90	87	84	78	76	74		68	66	64		58
2	92	85	79	74	86	79	74	70	69	65	62		60	57	55		52
3	84	75	68	62	78	70	64	59	62	57	53		54	50	47		46
4	77	67	59	53	72	63	56	51	55	50	46		48	44	41		42
5	71	60	52	46	66	56	49	44	50	44	40		44	39	36		38
6	66	54	46	40	61	51	44	39	45	39	35		40	35	32		35
7	61	49	41	36	57	46	39	34	41	35	31		36	32	28		32
8	57	45	37	32	53	42	35	30	38	32	28		33	29	25		29
9	53	41	34	29	50	39	32	27	35	29	25		31	26	23		27
10	50	38	31	26	47	36	29	25	32	27	23		29	24	21		25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1559	1559	1559
5°	1561	1534	1544
10°	1546	1504	1494
15°	1524	1455	1416
20°	1496	1386	1321
25°	1467	1310	1230
30°	1429	1231	1113
35°	1391	1147	1011
40°	1352	1059	893
45°	1307	962	787
50°	1261	864	683
55°	1213	759	583
60°	1156	650	480
65°	1092	538	432
70°	1014	434	392
75°	916	383	357
80°	773	322	311
85°	539	216	235

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1307 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	200.1	2.7
10°-20°	549.3	7.4
20°-30°	771.2	10.4
30°-40°	840.7	11.3
40°-50°	772.7	10.4
50°-60°	606.8	8.2
60°-70°	395.0	5.3
70°-80°	203.3	2.7
80°-90°	55.0	0.7
90°-100°	67.4	0.9
100°-110°	214.2	2.9
110°-120°	366.5	4.9
120°-130°	482.0	6.5
130°-140°	541.0	7.3
140°-150°	530.5	7.1
150°-160°	445.0	6.0
160°-170°	295.1	4.0
170°-180°	103.2	1.4
0°-30°	1520.7	20.4
0°-40°	2361.4	31.7
0°-60°	3740.9	50.3
0°-90°	4394.2	59.1
90°-120°	648.0	8.7
90°-150°	2201.5	29.6
90°-180°	3045.0	40.9
0°-180°	7439.0	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	12	32	30	31	7
95°	48	57	59	59	57	53
105°	198	200	202	204	204	209
115°	368	373	371	370	368	364
125°	535	543	540	538	537	478
135°	692	702	704	703	700	535
145°	840	846	852	853	849	525
155°	960	963	966	971	968	442
165°	1045	1044	1044	1050	1046	295
175°	1087	1085	1083	1089	1084	103
180°	1089	1089	1089	1089	1089	

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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°	0.9	11.8	32.2	30.2	31.2
92.5°	20.3	27.6	28.6	29.5	29.5
95°	48.0	57.2	58.8	58.8	57.2
97.5°	79.8	88.3	92.0	92.0	92.0
100°	116.6	124.2	126.7	126.7	125.8
102.5°	155.3	160.9	164.5	165.5	164.5
105°	197.7	200.3	202.2	203.9	203.9
107.5°	239.7	243.7	243.7	244.3	239.7
110°	280.4	285.7	285.7	285.7	283.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	324.4	330.0	329.0	326.4	324.4
115°	367.7	373.1	371.3	370.4	367.7
117.5°	410.8	418.0	413.5	410.8	408.2
120°	454.2	461.3	454.2	454.2	451.2
122.5°	493.5	502.7	498.2	495.5	493.5
125°	534.9	543.1	540.5	537.5	536.6
127.5°	575.3	585.5	581.9	577.9	575.3
130°	613.0	624.9	623.3	621.3	617.7
132.5°	655.4	664.6	665.3	660.6	658.1
135°	691.9	702.1	704.0	703.0	700.4
137.5°	732.6	740.8	742.4	741.7	737.9
140°	768.4	776.6	781.2	781.2	777.6
142.5°	805.2	813.4	816.0	817.0	813.4
145°	840.0	846.5	851.8	852.8	849.2
147.5°	871.2	879.3	883.3	884.9	881.3
150°	903.4	909.0	912.6	915.5	912.6
152.5°	931.9	937.5	942.1	945.7	942.1
155°	960.4	963.1	966.0	970.7	967.7
157.5°	985.2	987.0	988.7	995.3	990.7
160°	1007.1	1009.1	1010.0	1015.6	1011.7
162.5°	1027.4	1027.4	1028.5	1034.7	1030.1
165°	1044.9	1043.9	1043.9	1050.4	1045.9
167.5°	1060.7	1057.6	1057.6	1064.3	1059.6
170°	1072.5	1069.8	1068.8	1075.4	1069.8
172.5°	1080.6	1078.1	1077.0	1083.7	1078.1
175°	1087.3	1084.6	1082.6	1089.2	1083.7
177.5°	1090.9	1088.2	1086.2	1091.8	1086.2
180°	1089.2	1089.2	1089.2	1089.2	1089.2

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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	9.50	10.41	10.38	11.31	12.45	5.47	6.38	6.35	7.27	8.41
	3H	11.19	12.00	12.08	12.91	14.07	6.66	7.48	7.56	8.38	9.55
	4H	11.80	12.57	12.71	13.48	14.66	7.12	7.89	8.03	8.80	9.97
	6H	12.23	12.94	13.15	13.86	15.04	7.44	8.15	8.36	9.07	10.26
	8H	12.36	13.03	13.29	13.97	15.16	7.54	8.21	8.47	9.15	10.33
	12H	12.43	13.07	13.36	14.00	15.21	7.58	8.22	8.52	9.15	10.36
4H	2H	9.53	10.30	10.44	11.21	12.38	6.07	6.84	6.99	7.75	8.93
	3H	11.37	12.01	12.29	12.95	14.14	7.43	8.07	8.36	9.01	10.20
	4H	12.07	12.65	13.00	13.59	14.80	7.98	8.57	8.92	9.50	10.72
	6H	12.59	13.09	13.54	14.05	15.27	8.41	8.91	9.36	9.87	11.09
	8H	12.77	13.24	13.72	14.19	15.42	8.54	9.01	9.49	9.96	11.19
	12H	12.87	13.29	13.84	14.26	15.50	8.61	9.03	9.58	10.00	11.24
8H	4H	12.04	12.51	12.99	13.46	14.69	8.27	8.74	9.22	9.70	10.92
	6H	12.61	13.00	13.59	14.00	15.22	8.79	9.18	9.77	10.18	11.41
	8H	12.83	13.17	13.82	14.16	15.41	8.99	9.33	9.97	10.31	11.56
	12H	12.98	13.28	13.96	14.26	15.55	9.11	9.41	10.10	10.39	11.68
12H	4H	12.00	12.42	12.97	13.39	14.62	8.28	8.70	9.25	9.68	10.91
	6H	12.59	12.93	13.57	13.92	15.16	8.84	9.19	9.83	10.17	11.42
	8H	12.81	13.11	13.80	14.10	15.39	9.06	9.36	10.05	10.34	11.63