

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: P918633

Luminaire Tested: DFN2DIP-4P3F0-060D040US935-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918633
REPORT IS A COMBINATION OF REPORTS P900578 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D040US935-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

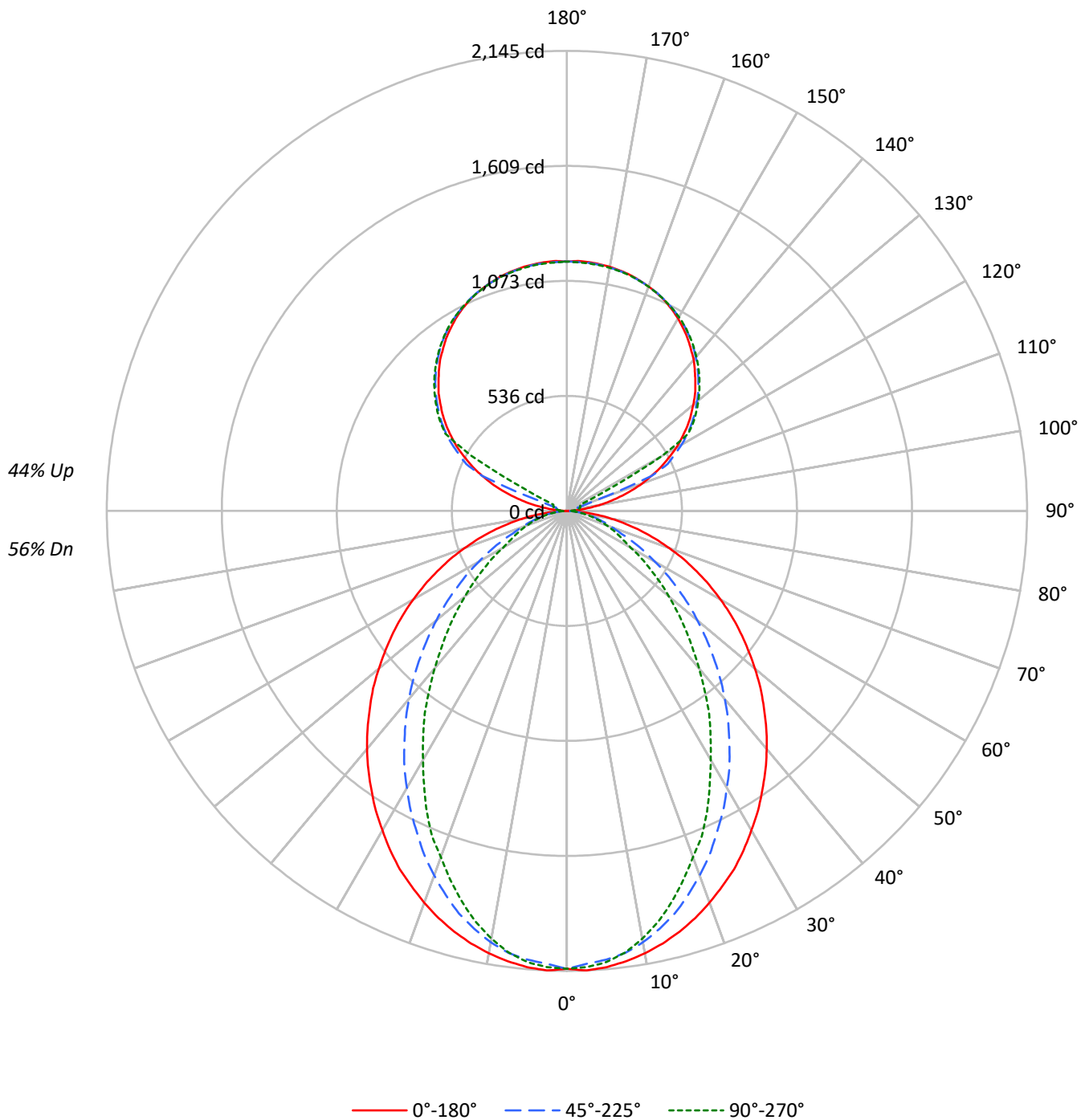
Lumens per Lamp: N/A
Luminaire Lumens: 7800.6 lumens
Efficiency: N/A
Efficacy: 85.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 91.8
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	109	109	109	109		101	101	101	101		87	87	87		74	74	74		62	62	62
1	100	96	92	88		93	89	86	83		77	75	72		66	64	63		56	54	53
2	91	84	78	73		85	79	73	69		68	64	61		58	56	53		50	48	46
3	84	74	67	62		78	70	63	58		61	56	52		52	49	46		44	42	40
4	77	66	59	53		71	62	55	50		54	49	45		47	43	40		40	37	35
5	71	59	51	46		66	56	49	43		49	43	39		42	38	35		36	33	31
6	65	54	46	40		61	50	43	38		44	39	34		39	34	31		33	30	27
7	61	49	41	35		56	46	39	34		40	35	30		35	31	27		30	27	24
8	56	44	37	31		52	42	35	30		37	31	27		32	28	25		28	25	22
9	53	41	33	28		49	38	32	27		34	28	25		30	25	22		26	23	20
10	49	37	30	25		46	35	29	24		31	26	22		28	23	20		24	21	18

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	2.6
10°-20°	549.3	7.0
20°-30°	771.2	9.9
30°-40°	840.7	10.8
40°-50°	772.7	9.9
50°-60°	606.8	7.8
60°-70°	395.0	5.1
70°-80°	203.3	2.6
80°-90°	53.9	0.7
90°-100°	38.3	0.5
100°-110°	142.9	1.8
110°-120°	378.9	4.9
120°-130°	628.5	8.1
130°-140°	667.6	8.6
140°-150°	620.4	8.0
150°-160°	498.8	6.4
160°-170°	321.4	4.1
170°-180°	110.6	1.4
0°-30°	1520.7	19.5
0°-40°	2361.4	30.3
0°-60°	3740.9	48.0
0°-90°	4393.1	56.3
90°-120°	560.1	7.2
90°-150°	2476.6	31.7
90°-180°	3407.0	43.7
0°-180°	7800.6	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	10	17	21	23	7
95°	55	27	33	37	36	65
105°	256	281	51	60	64	273
115°	484	498	519	130	69	476
125°	684	695	711	717	719	610
135°	846	860	867	876	874	654
145°	982	981	995	1001	997	614
155°	1081	1073	1083	1088	1082	498
165°	1139	1134	1136	1142	1136	322
175°	1165	1159	1161	1166	1158	111
180°	1162	1162	1162	1162	1162	

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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°	0.8	10.1	16.8	21.1	22.6
92.5°	21.1	17.7	20.1	21.9	22.6
95°	54.6	26.9	32.7	37.0	36.2
97.5°	98.4	29.4	42.9	45.5	46.2
100°	148.9	33.7	48.0	54.6	56.3
102.5°	204.3	202.8	49.6	58.8	61.4
105°	255.6	280.9	51.3	60.5	63.9
107.5°	315.4	336.4	53.0	62.3	65.6
110°	372.6	390.2	147.2	63.1	66.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	426.5	441.5	427.2	64.7	67.3
115°	483.5	497.8	518.9	129.5	69.1
117.5°	533.2	550.0	564.4	444.0	223.7
120°	588.8	601.3	616.5	626.6	513.1
122.5°	635.8	649.3	666.2	671.1	672.0
125°	683.7	694.7	710.7	716.6	719.1
127.5°	727.5	739.3	751.9	760.3	761.1
130°	768.7	782.2	791.3	800.6	799.9
132.5°	810.7	821.7	830.9	838.5	837.8
135°	846.1	859.6	867.1	875.5	873.9
137.5°	883.0	893.1	901.6	910.0	907.5
140°	919.2	926.0	935.2	942.8	938.6
142.5°	949.6	955.4	966.4	973.0	968.9
145°	981.5	980.7	994.9	1000.8	996.6
147.5°	1009.2	1006.7	1021.0	1025.2	1021.9
150°	1036.1	1030.3	1043.8	1048.8	1044.6
152.5°	1058.9	1052.1	1064.7	1069.8	1063.9
155°	1080.7	1073.2	1083.3	1088.3	1081.6
157.5°	1098.4	1091.7	1099.3	1105.2	1098.4
160°	1113.5	1108.4	1113.5	1118.5	1112.7
162.5°	1127.0	1122.0	1126.2	1132.0	1124.5
165°	1138.8	1133.8	1136.3	1142.1	1136.3
167.5°	1148.1	1142.9	1145.6	1151.4	1143.8
170°	1155.6	1150.6	1152.2	1158.1	1150.6
172.5°	1160.6	1155.6	1157.4	1163.2	1155.6
175°	1164.8	1158.9	1160.6	1166.5	1158.1
177.5°	1166.5	1160.6	1161.5	1167.4	1159.9
180°	1162.3	1162.3	1162.3	1162.3	1162.3

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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	10.77	11.66	11.68	12.58	13.76	6.73	7.62	7.64	8.54	9.72
	3H	12.45	13.24	13.37	14.17	15.38	7.92	8.71	8.84	9.64	10.85
	4H	13.06	13.81	13.99	14.74	15.96	8.37	9.12	9.30	10.05	11.27
	6H	13.48	14.17	14.43	15.11	16.34	8.69	9.37	9.63	10.32	11.55
	8H	13.61	14.26	14.56	15.22	16.44	8.78	9.43	9.73	10.39	11.62
	12H	13.67	14.29	14.63	15.24	16.49	8.82	9.44	9.78	10.39	11.64
4H	2H	10.80	11.54	11.74	12.48	13.70	7.33	8.08	8.27	9.02	10.23
	3H	12.63	13.25	13.58	14.21	15.44	8.68	9.30	9.63	10.27	11.50
	4H	13.32	13.88	14.28	14.84	16.10	9.23	9.79	10.19	10.75	12.01
	6H	13.83	14.32	14.80	15.30	16.56	9.64	10.13	10.61	11.11	12.37
	8H	14.00	14.46	14.98	15.44	16.70	9.77	10.22	10.74	11.20	12.47
	12H	14.10	14.51	15.09	15.50	16.78	9.83	10.24	10.82	11.24	12.51
8H	4H	13.29	13.74	14.26	14.72	15.99	9.51	9.96	10.48	10.94	12.21
	6H	13.85	14.22	14.85	15.24	16.51	10.02	10.39	11.02	11.42	12.68
	8H	14.06	14.39	15.07	15.40	16.69	10.21	10.54	11.21	11.55	12.83
	12H	14.20	14.49	15.21	15.49	16.82	10.32	10.61	11.33	11.62	12.95
12H	4H	13.24	13.65	14.23	14.65	15.92	9.51	9.92	10.51	10.92	12.19
	6H	13.82	14.16	14.83	15.16	16.45	10.07	10.40	11.08	11.41	12.69
	8H	14.04	14.33	15.05	15.34	16.67	10.27	10.57	11.29	11.57	12.90