

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: P922060

Luminaire Tested: DFN2DIP-PN3F0-030D070US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922060
REPORT IS A COMBINATION OF REPORTS P899567 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-030D070US940-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

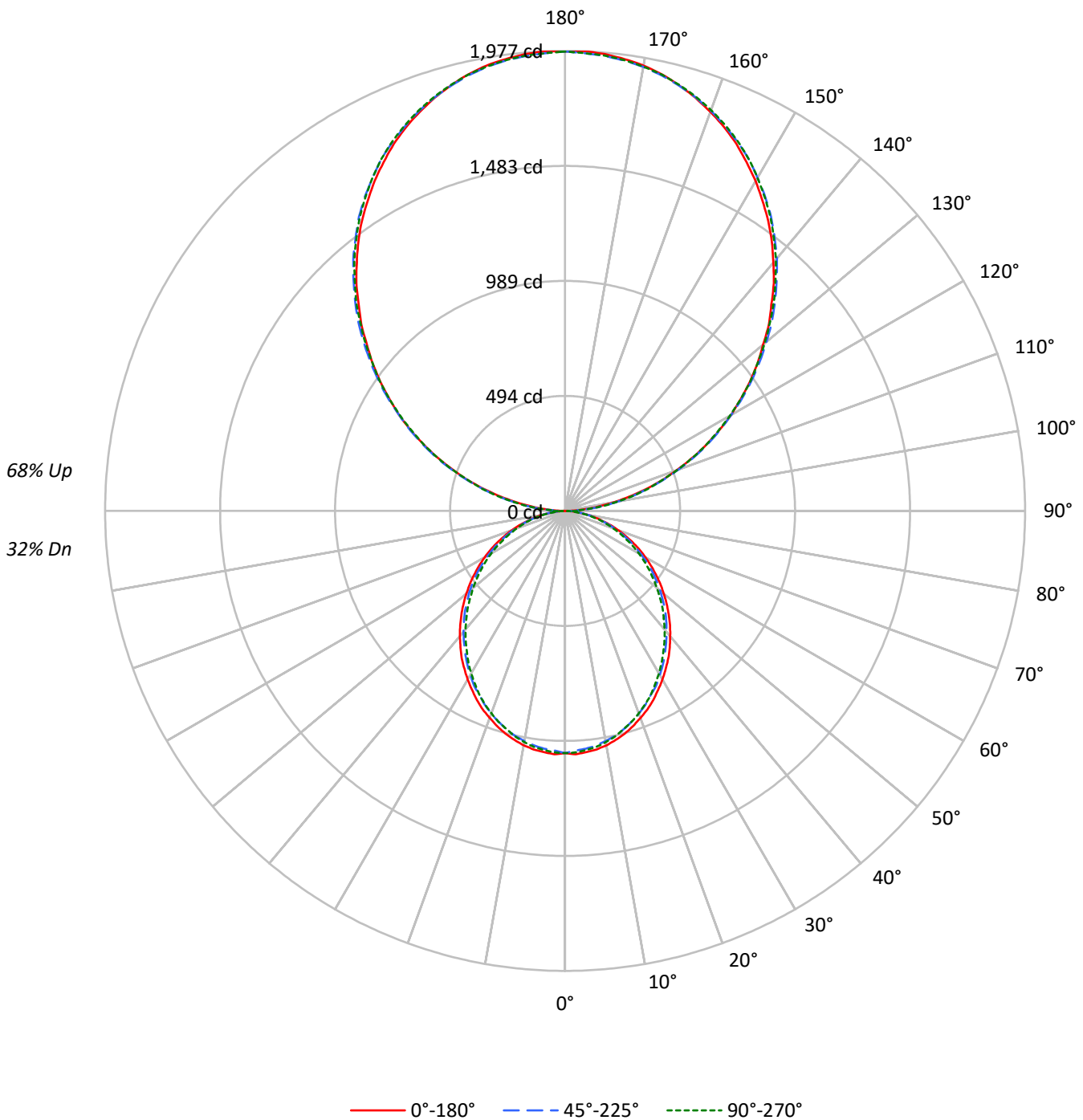
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8172.6 lumens
Efficiency: N/A
Efficacy: 104.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 78.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40	40	40	40	32
1	94	90	86	82	84	81	78	75	64	62	60	49	48	47	35	34	34	35	34	34	27
2	85	78	72	67	77	71	66	61	56	53	50	43	41	39	31	30	28	31	30	28	23
3	78	69	62	56	70	62	56	51	50	45	42	38	35	33	28	26	24	28	26	24	19
4	71	61	53	47	64	55	48	43	44	39	36	34	31	28	25	23	21	34	31	28	17
5	65	54	46	40	59	49	42	37	39	34	31	30	27	24	22	20	18	34	31	28	14
6	60	48	40	35	54	44	37	32	35	30	27	27	24	21	20	18	16	34	31	28	13
7	55	43	36	30	50	40	33	28	32	27	23	25	21	19	18	16	14	34	31	28	11
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	14	13	34	31	28	10
9	48	36	29	24	43	33	26	22	27	22	18	21	17	15	15	13	11	34	31	28	9
10	44	33	26	21	40	30	24	20	24	20	16	19	16	13	14	12	10	34	31	28	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1217	1217	1217
5°	1218	1199	1207
10°	1207	1182	1191
15°	1189	1162	1164
20°	1164	1134	1138
25°	1140	1101	1107
30°	1109	1070	1068
35°	1080	1033	1027
40°	1044	997	988
45°	1008	960	947
50°	969	921	901
55°	929	876	858
60°	882	823	809
65°	832	768	751
70°	767	700	689
75°	678	620	630
80°	570	516	520
85°	402	342	339

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1954 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.0	1.2
10°-20°	275.6	3.4
20°-30°	405.1	5.0
30°-40°	470.5	5.8
40°-50°	469.9	5.7
50°-60°	409.8	5.0
60°-70°	302.9	3.7
70°-80°	171.4	2.1
80°-90°	50.8	0.6
90°-100°	122.2	1.5
100°-110°	388.1	4.7
110°-120°	664.2	8.1
120°-130°	873.6	10.7
130°-140°	980.5	12.0
140°-150°	961.5	11.8
150°-160°	806.6	9.9
160°-170°	534.9	6.5
170°-180°	187.0	2.3
0°-30°	778.7	9.5
0°-40°	1249.2	15.3
0°-60°	2128.9	26.0
0°-90°	2654.0	32.5
90°-120°	1174.5	14.4
90°-150°	3990.1	48.8
90°-180°	5519.0	67.5
0°-180°	8172.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1041	1041	1041	1041	1041	
5°	1041	1037	1026	1034	1032	99
15°	991	985	972	976	971	279
25°	897	889	872	874	872	413
35°	774	764	748	742	737	483
45°	630	623	608	597	592	486
55°	476	470	458	446	442	426
65°	321	315	305	296	291	318
75°	168	166	161	155	157	179
85°	41	40	39	36	35	46
90°	2	21	58	55	56	8
95°	87	104	107	107	104	97
105°	358	363	367	370	370	378
115°	667	676	673	671	667	659
125°	970	984	980	974	972	866
135°	1254	1272	1276	1274	1269	969
145°	1522	1534	1544	1546	1539	951
155°	1741	1746	1751	1759	1754	801
165°	1894	1892	1892	1904	1896	534
175°	1970	1966	1962	1974	1964	187
180°	1974	1974	1974	1974	1974	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1040.9	1040.9	1040.9	1040.9	1040.9
2.5°	1047.0	1042.0	1030.9	1040.9	1039.0
5°	1040.9	1037.0	1025.9	1033.9	1032.0
7.5°	1033.9	1028.0	1016.9	1025.0	1023.0
10°	1023.0	1015.9	1004.0	1011.9	1009.0
12.5°	1007.9	1001.9	990.0	994.9	992.9
15°	990.9	985.0	971.9	975.9	970.9
17.5°	969.8	963.9	950.8	955.8	950.8
20°	946.8	940.8	926.8	929.8	925.9
22.5°	923.9	914.9	901.8	901.8	899.7
25°	896.8	888.9	871.8	873.8	871.8
27.5°	866.7	859.7	846.8	843.8	838.8
30°	836.8	828.8	813.8	810.7	806.7
32.5°	804.8	798.8	782.7	776.7	772.7
35°	773.7	763.7	747.7	741.6	736.6
37.5°	738.7	729.7	713.6	706.6	701.6
40°	702.7	694.6	678.6	669.7	665.7
42.5°	667.6	659.6	643.6	633.6	627.6
45°	629.6	622.6	607.5	596.6	592.5
47.5°	592.5	585.6	569.5	558.5	552.5
50°	553.5	548.5	534.5	520.5	515.5
52.5°	515.5	508.5	495.5	484.5	477.4
55°	476.5	470.5	458.4	446.5	441.5
57.5°	437.4	432.4	419.4	407.3	403.3
60°	398.3	394.4	380.4	369.3	366.4
62.5°	360.3	353.3	343.3	333.3	329.3
65°	321.4	315.3	305.3	296.3	291.3
67.5°	281.3	276.3	267.2	260.3	256.3
70°	244.2	240.2	231.2	224.2	220.3
72.5°	206.3	202.2	197.2	190.2	187.3
75°	168.1	166.2	161.1	155.2	157.2
77.5°	134.1	130.1	128.0	125.1	122.2
80°	100.1	99.1	97.0	94.1	92.1
82.5°	68.0	68.0	67.1	63.0	63.0
85°	41.0	40.0	39.1	36.0	35.0
87.5°	18.0	16.1	14.0	11.1	10.0
90°	1.8	21.4	58.3	54.8	56.5
92.5°	36.9	50.0	51.8	53.6	53.6
95°	86.9	103.5	106.6	106.6	103.5
97.5°	144.6	160.1	166.7	166.7	166.7
100°	211.2	225.0	229.7	229.7	227.9
102.5°	281.5	291.6	298.2	300.0	298.2
105°	358.3	363.0	366.6	369.6	369.6
107.5°	434.4	441.6	441.6	442.8	434.4
110°	508.3	517.8	517.8	517.8	513.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	588.0	598.2	596.4	591.6	588.0
115°	666.6	676.1	673.2	671.4	666.6
117.5°	744.5	757.6	749.3	744.5	739.8
120°	823.0	836.2	823.0	823.0	817.7
122.5°	894.5	911.1	902.9	898.0	894.5
125°	969.5	984.4	979.6	974.3	972.5
127.5°	1042.7	1061.1	1054.6	1047.5	1042.7
130°	1111.2	1132.6	1129.6	1126.1	1119.5
132.5°	1187.9	1204.6	1205.8	1197.5	1192.7
135°	1254.0	1272.4	1276.0	1274.2	1269.4
137.5°	1327.8	1342.6	1345.6	1344.4	1337.3
140°	1392.7	1407.6	1415.9	1415.9	1409.3
142.5°	1459.3	1474.2	1478.9	1480.7	1474.2
145°	1522.4	1534.3	1543.8	1545.6	1539.1
147.5°	1579.0	1593.8	1601.0	1603.9	1597.4
150°	1637.3	1647.3	1653.9	1659.3	1653.9
152.5°	1689.0	1699.2	1707.4	1714.0	1707.4
155°	1740.8	1745.5	1751.0	1759.3	1753.9
157.5°	1785.5	1789.0	1792.0	1803.9	1795.5
160°	1825.3	1828.9	1830.7	1840.8	1833.6
162.5°	1862.2	1862.2	1864.0	1875.3	1867.0
165°	1893.7	1891.9	1891.9	1903.9	1895.5
167.5°	1922.3	1917.0	1917.0	1928.9	1920.6
170°	1943.8	1939.0	1937.2	1949.1	1939.0
172.5°	1958.6	1953.8	1952.0	1964.0	1953.8
175°	1970.5	1965.8	1962.2	1974.1	1964.0
177.5°	1977.1	1972.3	1968.7	1978.9	1968.7
180°	1974.1	1974.1	1974.1	1974.1	1974.1



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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	6.02	6.75	7.12	7.84	9.34	5.58	6.31	6.68	7.40	8.90
	3H	7.67	8.32	8.77	9.42	10.94	7.19	7.83	8.29	8.93	10.45
	4H	8.25	8.86	9.36	9.96	11.49	7.76	8.38	8.87	9.48	11.00
	6H	8.63	9.20	9.76	10.30	11.84	8.14	8.71	9.27	9.82	11.35
	8H	8.73	9.27	9.86	10.39	11.92	8.24	8.78	9.37	9.90	11.43
	12H	8.77	9.28	9.90	10.40	11.95	8.28	8.79	9.41	9.90	11.45
4H	2H	6.47	7.08	7.59	8.18	9.71	6.11	6.73	7.23	7.83	9.36
	3H	8.31	8.82	9.44	9.95	11.49	7.91	8.42	9.04	9.55	11.09
	4H	9.02	9.49	10.15	10.60	12.16	8.60	9.07	9.73	10.19	11.75
	6H	9.52	9.92	10.65	11.06	12.61	9.09	9.50	10.23	10.64	12.19
	8H	9.66	10.04	10.80	11.17	12.73	9.23	9.61	10.37	10.74	12.31
	12H	9.72	10.07	10.88	11.21	12.78	9.29	9.63	10.44	10.77	12.34
8H	4H	9.20	9.57	10.33	10.71	12.27	8.83	9.20	9.96	10.34	11.90
	6H	9.81	10.13	10.97	11.30	12.86	9.44	9.75	10.60	10.93	12.49
	8H	10.03	10.30	11.19	11.46	13.04	9.65	9.92	10.81	11.07	12.65
	12H	10.15	10.39	11.32	11.54	13.16	9.75	9.99	10.92	11.14	12.76
12H	4H	9.17	9.52	10.33	10.66	12.23	8.81	9.16	9.97	10.30	11.87
	6H	9.84	10.11	11.00	11.27	12.85	9.48	9.75	10.64	10.90	12.49
	8H	10.07	10.31	11.24	11.46	13.08	9.70	9.94	10.87	11.09	12.71