

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: P915934

Luminaire Tested: DFN2DIP-4P4F0-030D080US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915934
REPORT IS A COMBINATION OF REPORTS P899139 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D080US930-FLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

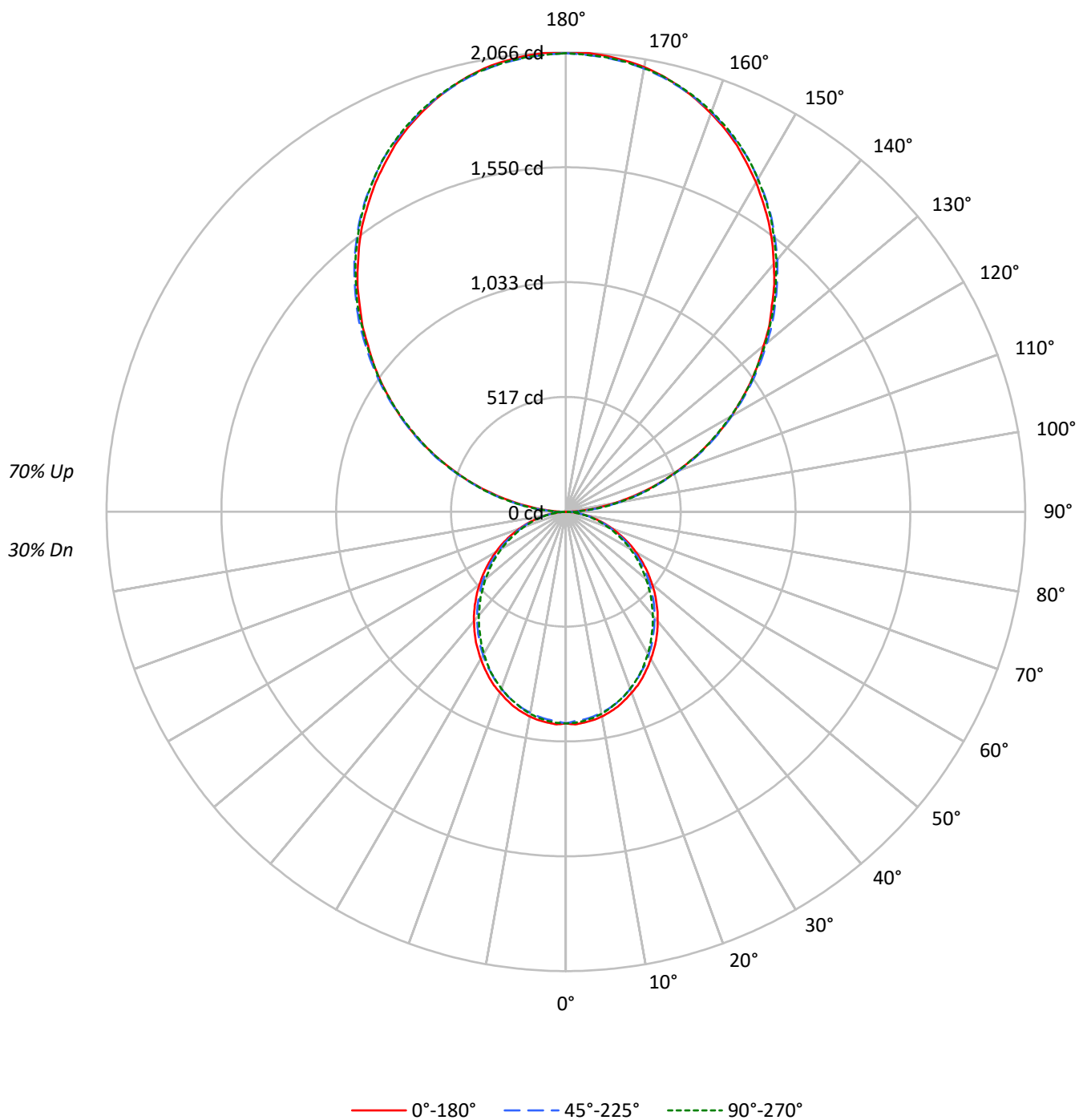
Lumens per Lamp: N/A
Luminaire Lumens: 8193.8 lumens
Efficiency: N/A
Efficacy: 81.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 101.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	32
2	85	78	72	67	76	70	65	61	55	52	49	42	39	37	29	28	27
3	77	68	61	56	69	61	55	51	49	44	41	37	34	32	26	24	23
4	71	60	53	47	63	54	48	43	43	38	35	33	30	27	23	21	19
5	65	54	46	40	58	48	42	37	38	34	30	29	26	23	21	19	17
6	60	48	40	34	53	43	37	32	35	30	26	26	23	20	19	17	15
7	55	43	35	30	49	39	32	28	31	26	23	24	20	18	17	15	13
8	51	39	32	26	46	35	29	24	28	24	20	22	18	16	16	13	12
9	47	35	28	23	42	32	26	22	26	21	18	20	17	14	14	12	11
10	44	32	25	21	40	29	23	19	24	19	16	18	15	13	13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	617	617	617
5°	618	609	613
10°	613	601	605
15°	605	591	592
20°	592	578	579
25°	580	561	564
30°	565	546	545
35°	551	529	524
40°	533	511	505
45°	516	493	485
50°	496	474	462
55°	476	452	441
60°	453	426	417
65°	428	399	388
70°	397	366	358
75°	353	327	330
80°	300	277	276
85°	218	190	186

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1562 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.6	1.1
10°-20°	252.0	3.1
20°-30°	370.4	4.5
30°-40°	430.2	5.3
40°-50°	429.7	5.2
50°-60°	374.6	4.6
60°-70°	277.0	3.4
70°-80°	156.7	1.9
80°-90°	47.2	0.6
90°-100°	127.6	1.6
100°-110°	405.6	4.9
110°-120°	694.1	8.5
120°-130°	912.8	11.1
130°-140°	1024.6	12.5
140°-150°	1004.7	12.3
150°-160°	842.8	10.3
160°-170°	558.9	6.8
170°-180°	195.4	2.4
0°-30°	712.0	8.7
0°-40°	1142.2	13.9
0°-60°	1946.5	23.8
0°-90°	2427.3	29.6
90°-120°	1227.3	15.0
90°-150°	4169.4	50.9
90°-180°	5766.0	70.4
0°-180°	8193.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	952	952	952	952	952	
5°	952	948	938	945	944	90
15°	906	901	889	892	888	255
25°	820	813	797	799	797	377
35°	707	698	684	678	674	442
45°	576	569	556	545	542	444
55°	436	430	419	408	404	390
65°	294	288	279	271	266	290
75°	154	152	147	142	144	164
85°	38	37	36	33	32	42
90°	2	22	61	57	59	8
95°	91	108	111	111	108	101
105°	374	379	383	386	386	395
115°	696	706	703	702	696	689
125°	1013	1029	1024	1018	1016	905
135°	1310	1330	1333	1332	1326	1013
145°	1591	1603	1613	1615	1608	994
155°	1819	1824	1830	1838	1833	837
165°	1979	1977	1977	1989	1981	558
175°	2059	2054	2050	2063	2052	196
180°	2063	2063	2063	2063	2063	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	951.7	951.7	951.7	951.7	951.7
2.5°	957.2	952.7	942.6	951.7	950.0
5°	951.7	948.1	938.0	945.3	943.5
7.5°	945.3	939.9	929.8	937.2	935.3
10°	935.3	928.9	917.9	925.2	922.5
12.5°	921.5	916.1	905.1	909.6	907.8
15°	906.0	900.6	888.6	892.3	887.7
17.5°	886.7	881.3	869.4	873.9	869.4
20°	865.7	860.2	847.4	850.1	846.5
22.5°	844.7	836.5	824.5	824.5	822.6
25°	819.9	812.7	797.1	798.9	797.1
27.5°	792.5	786.0	774.2	771.5	767.0
30°	765.1	757.7	744.0	741.3	737.6
32.5°	735.8	730.3	715.7	710.1	706.5
35°	707.4	698.3	683.6	678.1	673.5
37.5°	675.4	667.2	652.5	646.0	641.5
40°	642.5	635.1	620.4	612.3	608.6
42.5°	610.4	603.1	588.5	579.3	573.8
45°	575.7	569.2	555.5	545.4	541.8
47.5°	541.8	535.4	520.7	510.6	505.2
50°	506.1	501.5	488.7	475.9	471.3
52.5°	471.3	464.9	453.1	443.0	436.5
55°	435.7	430.2	419.1	408.2	403.7
57.5°	399.9	395.3	383.4	372.4	368.8
60°	364.2	360.6	347.8	337.7	335.0
62.5°	329.5	323.0	313.9	304.8	301.1
65°	293.8	288.3	279.2	270.9	266.4
67.5°	257.2	252.6	244.3	238.0	234.3
70°	223.3	219.6	211.4	205.0	201.4
72.5°	188.6	184.8	180.3	173.9	171.2
75°	153.7	152.0	147.3	141.9	143.7
77.5°	122.6	119.0	117.1	114.4	111.7
80°	91.6	90.6	88.7	86.0	84.2
82.5°	62.2	62.2	61.4	57.6	57.6
85°	37.5	36.6	35.7	32.9	32.0
87.5°	16.5	14.7	12.8	10.1	9.1
90°	1.9	22.4	61.0	57.2	59.1
92.5°	38.6	52.3	54.1	55.9	55.9
95°	90.8	108.2	111.3	111.3	108.2
97.5°	151.2	167.3	174.1	174.1	174.1
100°	220.8	235.1	240.0	240.0	238.1
102.5°	294.2	304.8	311.5	313.4	311.5
105°	374.4	379.4	383.1	386.2	386.2
107.5°	454.0	461.5	461.5	462.7	454.0
110°	531.1	541.0	541.0	541.0	536.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	614.4	625.0	623.1	618.2	614.4
115°	696.5	706.5	703.4	701.5	696.5
117.5°	778.0	791.7	782.9	778.0	773.0
120°	860.1	873.8	860.1	860.1	854.4
122.5°	934.7	952.1	943.4	938.4	934.7
125°	1013.0	1028.6	1023.6	1018.0	1016.2
127.5°	1089.6	1108.8	1102.0	1094.5	1089.6
130°	1161.1	1183.4	1180.3	1176.6	1169.8
132.5°	1241.3	1258.7	1260.0	1251.2	1246.3
135°	1310.3	1329.6	1333.3	1331.5	1326.5
137.5°	1387.4	1403.0	1406.1	1404.8	1397.3
140°	1455.2	1470.7	1479.4	1479.4	1472.6
142.5°	1524.9	1540.4	1545.4	1547.3	1540.4
145°	1590.8	1603.2	1613.1	1615.0	1608.2
147.5°	1649.8	1665.4	1672.8	1676.0	1669.2
150°	1710.8	1721.3	1728.2	1733.8	1728.2
152.5°	1764.9	1775.5	1784.2	1791.0	1784.2
155°	1819.0	1824.0	1829.6	1838.3	1832.7
157.5°	1865.6	1869.4	1872.5	1884.9	1876.2
160°	1907.3	1911.1	1912.9	1923.5	1916.0
162.5°	1945.9	1945.9	1947.7	1959.6	1950.8
165°	1978.8	1976.9	1976.9	1989.4	1980.7
167.5°	2008.7	2003.1	2003.1	2015.5	2006.8
170°	2031.1	2026.1	2024.2	2036.7	2026.1
172.5°	2046.6	2041.7	2039.8	2052.2	2041.7
175°	2059.0	2054.1	2050.3	2062.8	2052.2
177.5°	2065.9	2060.9	2057.2	2067.8	2057.2
180°	2062.8	2062.8	2062.8	2062.8	2062.8

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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	3.35	4.05	4.46	5.16	6.69	2.90	3.61	4.02	4.71	6.25
	3H	5.00	5.63	6.12	6.75	8.30	4.51	5.14	5.63	6.26	7.81
	4H	5.58	6.18	6.72	7.30	8.86	5.09	5.69	6.22	6.81	8.36
	6H	5.98	6.53	7.12	7.65	9.22	5.48	6.03	6.62	7.15	8.72
	8H	6.08	6.61	7.23	7.74	9.30	5.58	6.11	6.73	7.24	8.80
	12H	6.13	6.63	7.28	7.76	9.34	5.62	6.12	6.77	7.25	8.83
4H	2H	3.79	4.39	4.93	5.51	7.06	3.43	4.03	4.57	5.15	6.71
	3H	5.65	6.15	6.79	7.29	8.86	5.24	5.74	6.38	6.88	8.45
	4H	6.36	6.82	7.51	7.95	9.54	5.94	6.40	7.08	7.53	9.12
	6H	6.87	7.26	8.03	8.42	10.00	6.44	6.83	7.59	7.99	9.57
	8H	7.02	7.39	8.17	8.53	10.13	6.58	6.95	7.74	8.10	9.69
	12H	7.09	7.42	8.26	8.58	10.18	6.64	6.97	7.81	8.13	9.73
8H	4H	6.54	6.91	7.70	8.06	9.66	6.17	6.54	7.32	7.68	9.28
	6H	7.18	7.48	8.35	8.67	10.26	6.79	7.10	7.97	8.29	9.88
	8H	7.40	7.66	8.58	8.83	10.44	7.01	7.27	8.18	8.44	10.05
	12H	7.53	7.76	8.71	8.92	10.57	7.11	7.35	8.30	8.51	10.16
12H	4H	6.52	6.86	7.69	8.01	9.62	6.15	6.49	7.32	7.65	9.25
	6H	7.20	7.47	8.38	8.64	10.25	6.83	7.10	8.01	8.27	9.88
	8H	7.44	7.68	8.63	8.84	10.49	7.06	7.30	8.25	8.46	10.11