

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: P922053

Luminaire Tested: DFN2DIP-PN3F0-030D050US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922053
REPORT IS A COMBINATION OF REPORTS P901059 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-030D050US940-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

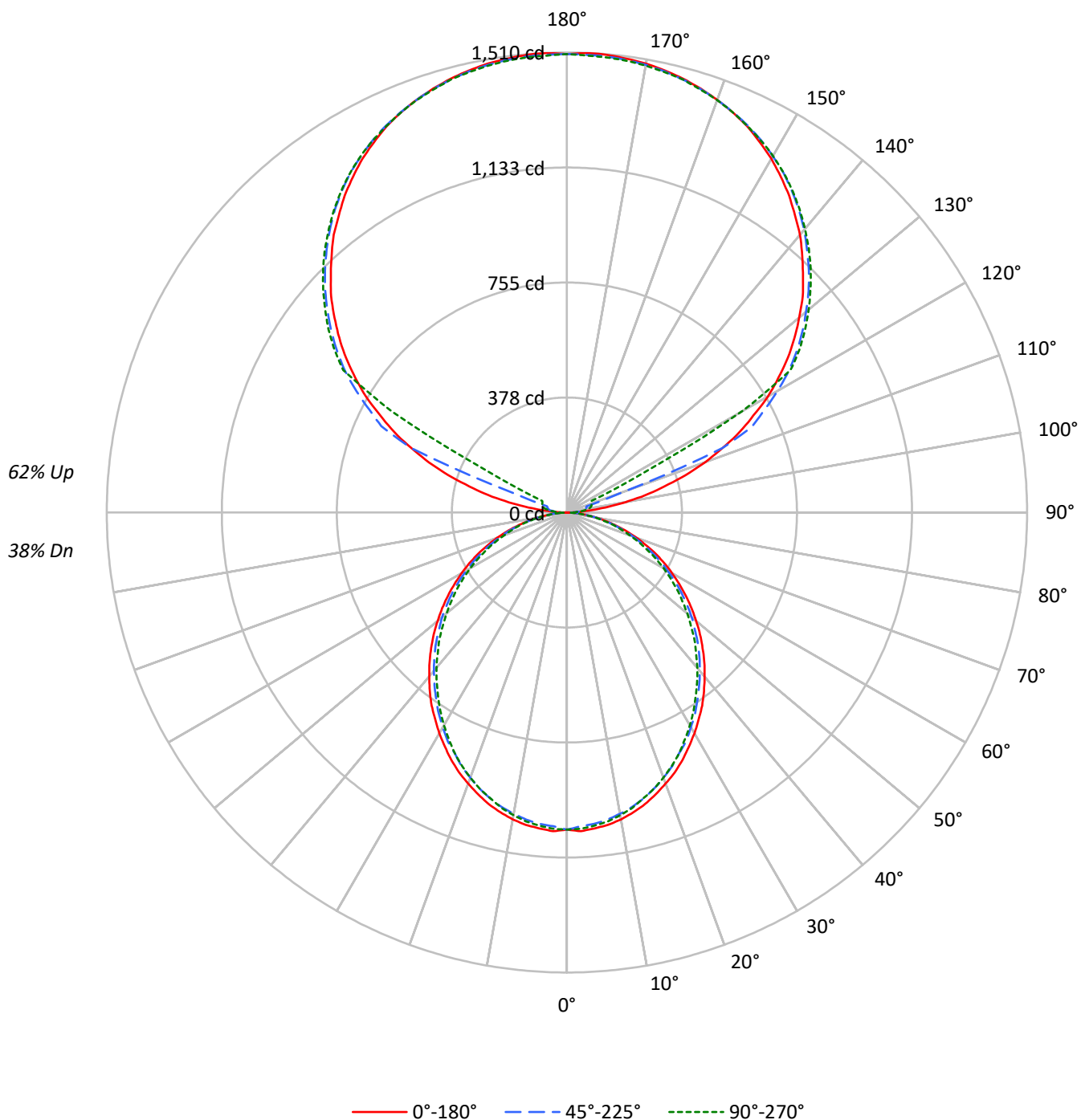
Lumens per Lamp: N/A
Luminaire Lumens: 7062.4 lumens
Efficiency: N/A
Efficacy: 114.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 61.6
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	104	104	104	104	94	94	94	94	76	76	76	60	60	60	45	45	45
1	95	91	87	83	86	82	79	76	67	65	63	53	51	50	39	39	38
2	86	79	73	68	78	72	67	63	59	55	52	46	44	42	35	33	32
3	79	70	62	57	71	63	57	52	52	47	44	41	38	35	31	29	27
4	72	62	54	48	65	56	49	44	46	41	37	36	33	30	27	25	23
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	22	20
6	61	49	41	35	55	45	38	33	37	32	28	29	26	23	22	20	18
7	56	44	36	31	51	40	34	29	33	28	24	27	23	20	20	18	16
8	52	40	32	27	47	37	30	25	30	25	22	24	21	18	19	16	14
9	48	36	29	24	44	33	27	23	28	23	19	22	19	16	17	15	13
10	45	33	26	22	41	31	24	20	26	21	17	21	17	14	16	13	12

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: 1014 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.0	1.4
10°-20°	275.6	3.9
20°-30°	405.1	5.7
30°-40°	470.5	6.7
40°-50°	469.9	6.7
50°-60°	409.8	5.8
60°-70°	302.9	4.3
70°-80°	171.4	2.4
80°-90°	47.9	0.7
90°-100°	49.6	0.7
100°-110°	185.0	2.6
110°-120°	490.6	6.9
120°-130°	813.6	11.5
130°-140°	864.3	12.2
140°-150°	803.2	11.4
150°-160°	645.8	9.1
160°-170°	416.1	5.9
170°-180°	143.2	2.0
0°-30°	778.7	11.0
0°-40°	1249.2	17.7
0°-60°	2128.9	30.1
0°-90°	2651.0	37.5
90°-120°	725.2	10.3
90°-150°	3206.2	45.4
90°-180°	4411.0	62.5
0°-180°	7062.4	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°	1	13	22	27	29	7
95°	71	35	42	48	47	84
105°	331	364	66	78	83	354
115°	626	644	672	168	89	616
125°	885	899	920	928	931	789
135°	1095	1113	1122	1134	1131	846
145°	1271	1270	1288	1296	1290	795
155°	1399	1389	1402	1409	1400	645
165°	1474	1468	1471	1478	1471	416
175°	1508	1500	1502	1510	1499	144
180°	1505	1505	1505	1505	1505	

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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°	1.1	13.0	21.8	27.3	29.3
92.5°	27.3	22.9	26.1	28.4	29.3
95°	70.7	34.8	42.4	48.0	46.8
97.5°	127.3	38.2	55.5	58.9	59.8
100°	192.8	43.6	62.1	70.7	72.9
102.5°	264.6	262.4	64.3	76.2	79.5
105°	331.0	363.7	66.4	78.4	82.8
107.5°	408.3	435.4	68.7	80.5	85.0
110°	482.4	505.2	190.6	81.7	86.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	552.1	571.6	553.1	83.8	87.1
115°	626.1	644.5	671.8	167.7	89.3
117.5°	690.3	712.0	730.7	574.8	289.6
120°	762.1	778.5	798.1	811.2	664.1
122.5°	823.0	840.5	862.4	868.9	870.0
125°	885.1	899.4	920.1	927.6	930.9
127.5°	941.7	957.0	973.5	984.3	985.3
130°	995.1	1012.6	1024.5	1036.5	1035.5
132.5°	1049.6	1063.8	1075.7	1085.6	1084.5
135°	1095.4	1112.9	1122.5	1133.5	1131.3
137.5°	1143.2	1156.3	1167.2	1178.1	1174.9
140°	1190.0	1198.8	1210.7	1220.5	1215.1
142.5°	1229.3	1237.0	1251.1	1259.7	1254.3
145°	1270.7	1269.5	1288.0	1295.7	1290.2
147.5°	1306.5	1303.2	1321.8	1327.2	1322.9
150°	1341.4	1333.8	1351.2	1357.7	1352.3
152.5°	1370.7	1362.1	1378.4	1385.0	1377.3
155°	1399.1	1389.4	1402.4	1408.9	1400.3
157.5°	1421.9	1413.3	1423.1	1430.7	1421.9
160°	1441.6	1435.0	1441.6	1448.0	1440.5
162.5°	1458.9	1452.5	1457.9	1465.5	1455.7
165°	1474.2	1467.8	1471.0	1478.5	1471.0
167.5°	1486.2	1479.6	1483.0	1490.6	1480.8
170°	1496.0	1489.4	1491.7	1499.2	1489.4
172.5°	1502.5	1496.0	1498.3	1505.8	1496.0
175°	1508.0	1500.3	1502.5	1510.1	1499.2
177.5°	1510.1	1502.5	1503.7	1511.3	1501.5
180°	1504.7	1504.7	1504.7	1504.7	1504.7

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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	6.64	7.40	7.70	8.46	9.90	6.20	6.96	7.26	8.02	9.46
	3H	8.29	8.97	9.35	10.04	11.49	7.80	8.48	8.87	9.55	11.01
	4H	8.86	9.51	9.94	10.58	12.05	8.38	9.03	9.46	10.10	11.56
	6H	9.25	9.85	10.34	10.92	12.40	8.77	9.36	9.85	10.43	11.91
	8H	9.35	9.92	10.45	11.01	12.48	8.86	9.43	9.96	10.52	11.99
	12H	9.40	9.93	10.49	11.02	12.51	8.90	9.44	10.00	10.52	12.02
4H	2H	7.08	7.73	8.17	8.80	10.26	6.73	7.38	7.82	8.45	9.91
	3H	8.93	9.47	10.03	10.57	12.05	8.53	9.07	9.62	10.17	11.65
	4H	9.64	10.13	10.74	11.22	12.72	9.22	9.72	10.32	10.81	12.30
	6H	10.14	10.57	11.25	11.68	13.17	9.72	10.14	10.83	11.26	12.75
	8H	10.29	10.68	11.39	11.79	13.29	9.86	10.26	10.97	11.36	12.87
	12H	10.35	10.71	11.47	11.83	13.34	9.91	10.27	11.04	11.39	12.90
8H	4H	9.82	10.22	10.93	11.32	12.83	9.45	9.85	10.56	10.95	12.46
	6H	10.44	10.77	11.57	11.92	13.42	10.07	10.40	11.20	11.54	13.04
	8H	10.66	10.94	11.79	12.07	13.59	10.28	10.56	11.41	11.69	13.21
	12H	10.78	11.03	11.92	12.16	13.72	10.38	10.63	11.52	11.76	13.32
12H	4H	9.80	10.16	10.93	11.28	12.79	9.44	9.80	10.56	10.92	12.43
	6H	10.47	10.76	11.60	11.88	13.41	10.11	10.39	11.24	11.52	13.04
	8H	10.70	10.95	11.84	12.08	13.64	10.33	10.58	11.47	11.71	13.27

END OF REPORT