

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: P921976

Luminaire Tested: DFN2DIP-PN2F0-030D050US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921976
REPORT IS A COMBINATION OF REPORTS P899493 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-030D050US940-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

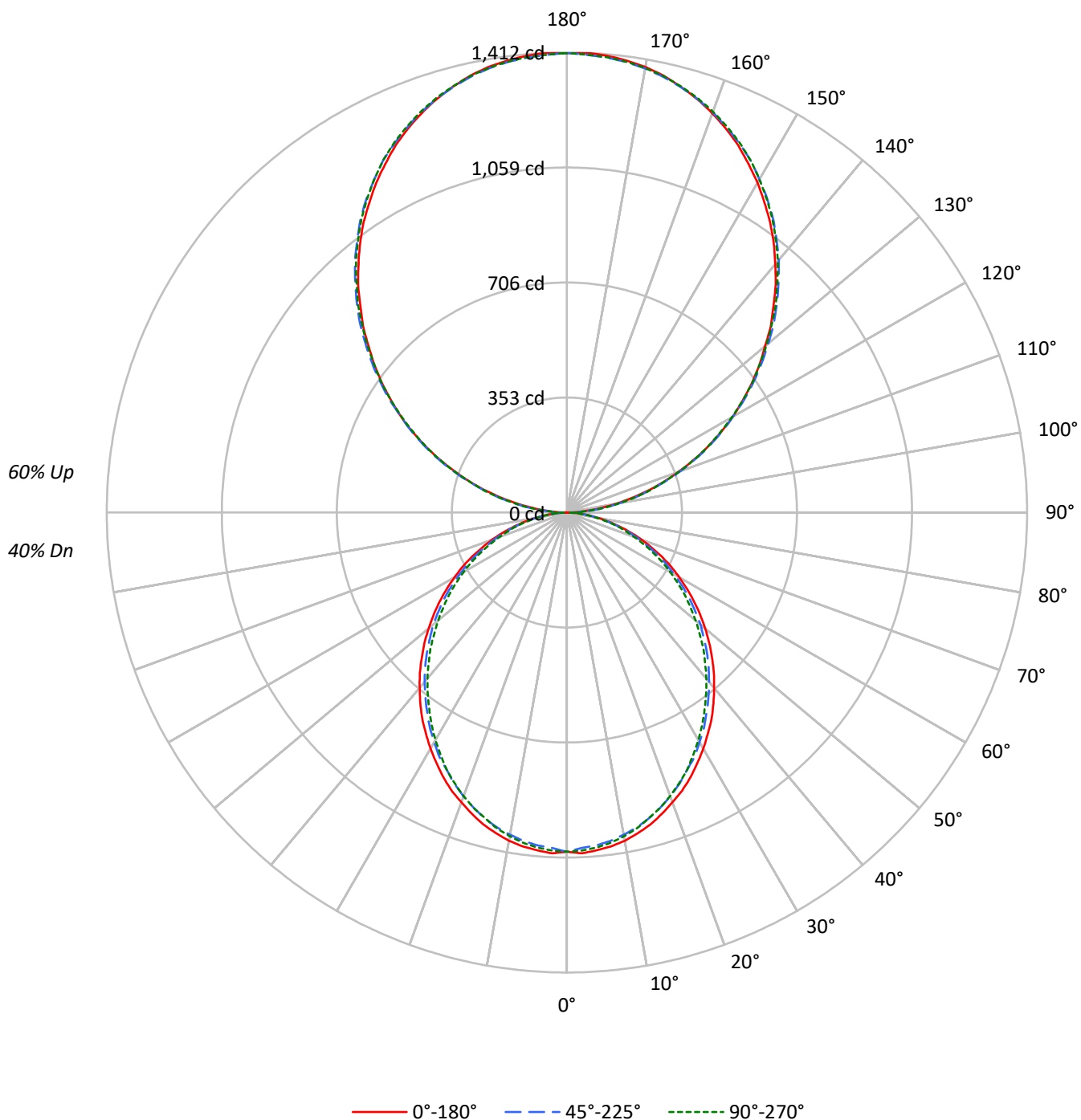
Lumens per Lamp: N/A
Luminaire Lumens: 6594.2 lumens
Efficiency: N/A
Efficacy: 95.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 69
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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	50	30	10
RCR																				
0	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	47	47	47
1	96	91	87	84	87	83	80	77	68	66	64	54	53	51	42	41	40	40	40	34
2	87	80	74	69	79	73	68	63	60	56	53	48	45	43	37	35	33	33	33	28
3	79	70	63	57	72	64	58	53	53	48	44	42	39	36	32	30	28	28	28	24
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	29	27	25	25	25	21
5	67	55	47	41	60	51	44	38	42	37	33	34	30	27	26	23	21	21	21	18
6	61	49	41	36	56	45	38	33	38	32	28	30	27	24	24	21	19	19	19	16
7	57	45	37	31	51	41	34	29	34	29	25	28	24	21	22	19	17	17	17	14
8	52	40	33	28	48	37	30	26	31	26	22	25	21	18	20	17	15	15	15	13
9	49	37	29	24	44	34	27	23	28	23	20	23	19	17	18	16	14	14	14	11
10	46	34	27	22	41	31	25	20	26	21	18	21	18	15	17	14	12	12	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2254	2254	2254
5°	2254	2218	2235
10°	2233	2184	2201
15°	2196	2143	2151
20°	2148	2088	2099
25°	2100	2024	2040
30°	2041	1963	1965
35°	1985	1893	1887
40°	1916	1822	1812
45°	1848	1750	1735
50°	1773	1674	1647
55°	1693	1587	1564
60°	1604	1485	1470
65°	1506	1377	1359
70°	1380	1247	1239
75°	1209	1090	1123
80°	1000	890	911
85°	679	563	570

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1902 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.0	1.5
10°-20°	275.6	4.2
20°-30°	405.1	6.1
30°-40°	470.5	7.1
40°-50°	469.9	7.1
50°-60°	409.8	6.2
60°-70°	302.9	4.6
70°-80°	171.4	2.6
80°-90°	49.2	0.7
90°-100°	87.3	1.3
100°-110°	277.2	4.2
110°-120°	474.5	7.2
120°-130°	624.0	9.5
130°-140°	700.4	10.6
140°-150°	686.8	10.4
150°-160°	576.1	8.7
160°-170°	382.1	5.8
170°-180°	133.5	2.0
0°-30°	778.7	11.8
0°-40°	1249.2	18.9
0°-60°	2128.9	32.3
0°-90°	2652.4	40.2
90°-120°	838.9	12.7
90°-150°	2850.1	43.2
90°-180°	3942.0	59.8
0°-180°	6594.2	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	15	42	39	40	6
95°	62	74	76	76	74	69
105°	256	259	262	264	264	270
115°	476	483	481	480	476	471
125°	692	703	700	696	695	619
135°	896	909	911	910	907	692
145°	1087	1096	1103	1104	1099	679
155°	1243	1247	1251	1257	1253	572
165°	1353	1351	1351	1360	1354	382
175°	1408	1404	1402	1410	1403	134
180°	1410	1410	1410	1410	1410	

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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°	1.2	15.3	41.6	39.1	40.4
92.5°	26.4	35.7	37.0	38.3	38.3
95°	62.1	74.0	76.1	76.1	74.0
97.5°	103.3	114.3	119.0	119.0	119.0
100°	150.9	160.7	164.1	164.1	162.8
102.5°	201.1	208.3	212.9	214.3	212.9
105°	255.9	259.3	261.9	263.9	263.9
107.5°	310.3	315.4	315.4	316.3	310.3
110°	363.0	369.9	369.9	369.9	366.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	420.0	427.2	426.0	422.6	420.0
115°	476.1	483.0	480.8	479.6	476.1
117.5°	531.8	541.2	535.2	531.8	528.4
120°	587.9	597.3	587.9	587.9	584.1
122.5°	638.9	650.9	644.9	641.5	638.9
125°	692.5	703.1	699.7	695.9	694.6
127.5°	744.8	758.0	753.3	748.1	744.8
130°	793.7	809.0	806.8	804.3	799.6
132.5°	848.6	860.4	861.3	855.3	851.9
135°	895.7	908.8	911.4	910.2	906.8
137.5°	948.4	959.0	961.2	960.3	955.2
140°	994.7	1005.4	1011.3	1011.3	1006.7
142.5°	1042.3	1053.0	1056.4	1057.7	1053.0
145°	1087.4	1095.9	1102.7	1104.0	1099.3
147.5°	1127.8	1138.4	1143.5	1145.7	1140.9
150°	1169.5	1176.7	1181.3	1185.2	1181.3
152.5°	1206.5	1213.7	1219.6	1224.3	1219.6
155°	1243.4	1246.8	1250.6	1256.6	1252.8
157.5°	1275.3	1277.8	1280.0	1288.5	1282.5
160°	1303.8	1306.4	1307.6	1314.8	1309.7
162.5°	1330.2	1330.2	1331.4	1339.5	1333.6
165°	1352.7	1351.4	1351.4	1359.9	1354.0
167.5°	1373.1	1369.2	1369.2	1377.8	1371.8
170°	1388.4	1385.0	1383.8	1392.2	1385.0
172.5°	1399.0	1395.6	1394.4	1402.8	1395.6
175°	1407.6	1404.1	1401.6	1410.1	1402.8
177.5°	1412.2	1408.8	1406.2	1413.5	1406.2
180°	1410.1	1410.1	1410.1	1410.1	1410.1

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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	9.00	9.78	10.04	10.82	12.23	8.56	9.34	9.60	10.39	11.79
	3H	10.63	11.33	11.68	12.39	13.81	10.15	10.85	11.20	11.91	13.33
	4H	11.20	11.87	12.26	12.92	14.35	10.72	11.39	11.78	12.44	13.87
	6H	11.58	12.19	12.65	13.25	14.70	11.10	11.71	12.17	12.77	14.21
	8H	11.68	12.26	12.75	13.33	14.77	11.19	11.77	12.27	12.85	14.29
	12H	11.72	12.27	12.79	13.34	14.80	11.22	11.78	12.30	12.84	14.31
4H	2H	9.44	10.10	10.51	11.16	12.59	9.09	9.75	10.16	10.81	12.24
	3H	11.28	11.83	12.35	12.91	14.35	10.88	11.43	11.95	12.51	13.95
	4H	11.97	12.48	13.05	13.55	15.02	11.56	12.06	12.64	13.14	14.60
	6H	12.46	12.90	13.55	13.99	15.45	12.04	12.48	13.13	13.57	15.03
	8H	12.60	13.01	13.69	14.09	15.57	12.18	12.58	13.26	13.67	15.15
	12H	12.66	13.03	13.76	14.13	15.61	12.23	12.59	13.33	13.70	15.18
8H	4H	12.15	12.56	13.24	13.64	15.12	11.78	12.19	12.87	13.28	14.75
	6H	12.75	13.09	13.86	14.22	15.69	12.38	12.72	13.49	13.85	15.32
	8H	12.96	13.25	14.08	14.37	15.86	12.58	12.87	13.70	13.99	15.48
	12H	13.07	13.33	14.19	14.44	15.97	12.68	12.94	13.80	14.04	15.57
12H	4H	12.13	12.50	13.23	13.60	15.08	11.77	12.14	12.87	13.24	14.72
	6H	12.78	13.07	13.89	14.18	15.68	12.42	12.71	13.53	13.82	15.31
	8H	13.00	13.26	14.12	14.37	15.90	12.63	12.89	13.75	14.00	15.53