

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: P924621

Luminaire Tested: DFN2DIP-HX4F0-100D050US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924621
REPORT IS A COMBINATION OF REPORTS P899330 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-100D050US950-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

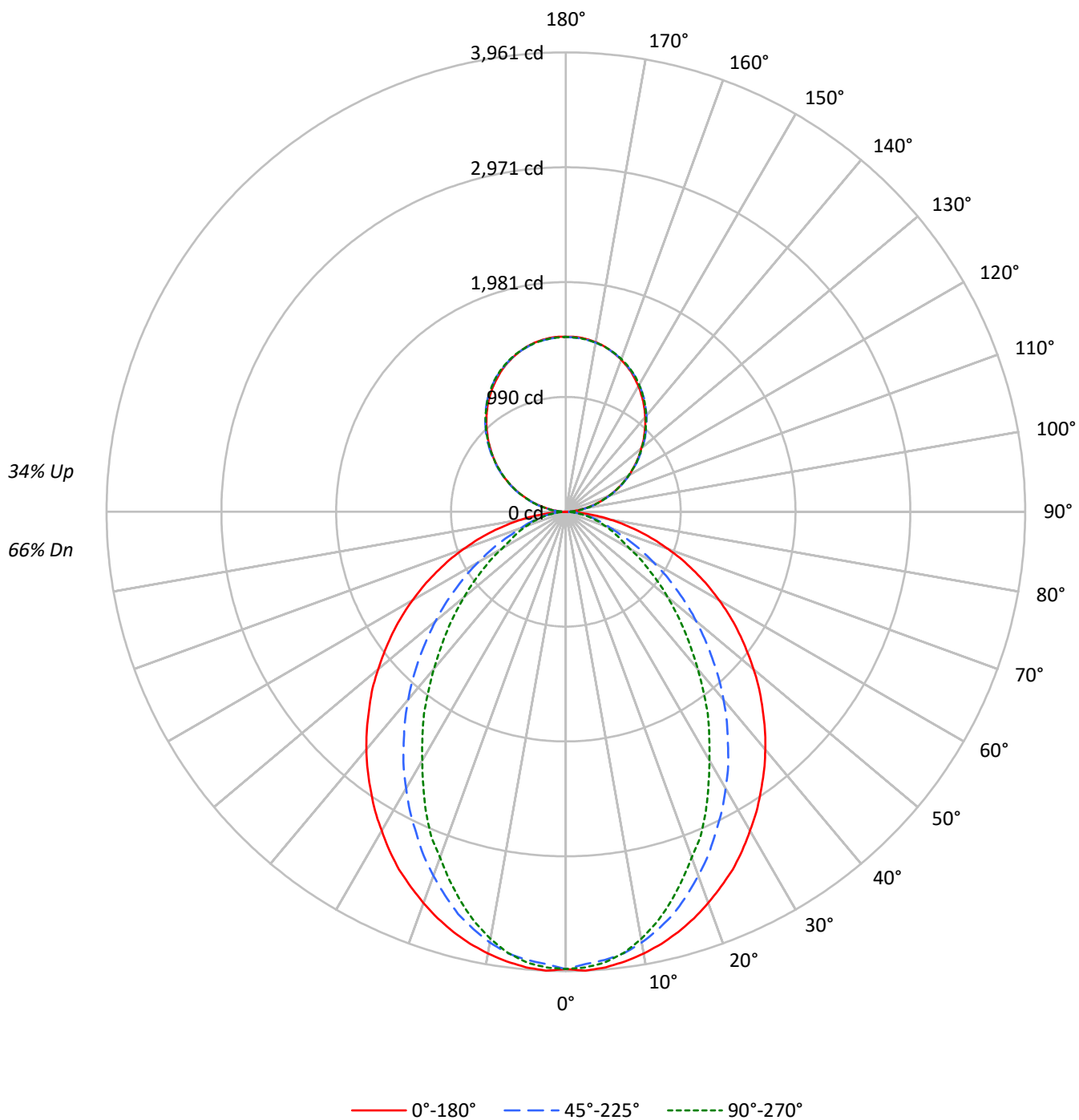
Lumens per Lamp: N/A
Luminaire Lumens: 12330.4 lumens
Efficiency: N/A
Efficacy: 96.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 128
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2932	2932	2932
5°	2937	2886	2904
10°	2908	2829	2810
15°	2868	2736	2664
20°	2815	2607	2484
25°	2761	2463	2311
30°	2689	2315	2092
35°	2618	2156	1899
40°	2545	1992	1678
45°	2461	1809	1478
50°	2374	1624	1282
55°	2284	1427	1094
60°	2179	1221	901
65°	2058	1012	811
70°	1912	816	734
75°	1728	720	668
80°	1462	605	580
85°	1022	405	437

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2461 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	369.5	3.0
10°-20°	1014.4	8.2
20°-30°	1424.2	11.6
30°-40°	1552.5	12.6
40°-50°	1426.9	11.6
50°-60°	1120.6	9.1
60°-70°	729.4	5.9
70°-80°	375.5	3.0
80°-90°	100.1	0.8
90°-100°	93.4	0.8
100°-110°	296.6	2.4
110°-120°	507.6	4.1
120°-130°	667.5	5.4
130°-140°	749.3	6.1
140°-150°	734.8	6.0
150°-160°	616.4	5.0
160°-170°	408.8	3.3
170°-180°	142.9	1.2
0°-30°	2808.2	22.8
0°-40°	4360.7	35.4
0°-60°	6908.2	56.0
0°-90°	8113.3	65.8
90°-120°	897.5	7.3
90°-150°	3049.2	24.7
90°-180°	4217.0	34.2
0°-180°	12330.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3943	3943	3943	3943	3943	
5°	3943	3925	3878	3911	3900	374
15°	3750	3711	3590	3522	3486	1057
25°	3404	3290	3054	2908	2854	1566
35°	2933	2751	2437	2212	2134	1836
45°	2398	2159	1784	1531	1445	1852
55°	1823	1545	1160	946	878	1629
65°	1231	942	621	500	489	1221
75°	656	407	285	260	257	694
85°	153	78	68	68	68	176
90°	1	16	45	42	43	12
95°	66	79	81	81	79	74
105°	274	277	280	282	282	289
115°	509	517	514	513	509	504
125°	741	752	749	744	743	662
135°	958	972	975	974	970	741
145°	1163	1172	1180	1181	1176	727
155°	1330	1334	1338	1344	1340	612
165°	1447	1446	1446	1455	1449	408
175°	1506	1502	1500	1509	1501	143
180°	1509	1509	1509	1509	1509	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3942.9	3942.9	3942.9	3942.9	3942.9
2.5°	3960.6	3942.9	3903.5	3939.4	3932.3
5°	3942.9	3925.0	3878.5	3910.7	3900.0
7.5°	3910.7	3889.5	3839.5	3853.5	3835.7
10°	3867.9	3842.9	3771.7	3760.8	3739.6
12.5°	3814.6	3782.3	3685.8	3664.6	3625.2
15°	3750.2	3710.8	3589.6	3521.9	3486.3
17.5°	3675.2	3618.0	3468.2	3389.8	3332.6
20°	3589.6	3518.1	3339.8	3250.9	3172.0
22.5°	3496.9	3414.7	3207.6	3086.6	3033.1
25°	3404.2	3289.9	3054.3	2908.2	2854.5
27.5°	3293.6	3172.0	2911.6	2743.9	2661.8
30°	3175.9	3039.9	2754.5	2572.8	2476.3
32.5°	3061.6	2897.2	2605.0	2390.7	2301.3
35°	2933.2	2751.1	2437.3	2212.4	2133.6
37.5°	2808.3	2611.8	2280.2	2033.7	1944.7
40°	2676.2	2462.3	2115.9	1862.6	1769.9
42.5°	2540.6	2312.3	1952.0	1687.7	1598.7
45°	2397.9	2158.6	1784.3	1530.6	1445.0
47.5°	2262.4	2009.1	1623.7	1370.0	1291.7
50°	2112.4	1859.2	1466.6	1220.2	1145.6
52.5°	1965.9	1698.3	1316.7	1081.2	1013.4
55°	1823.2	1545.0	1159.6	945.7	877.9
57.5°	1677.1	1391.6	1020.7	820.7	763.6
60°	1527.2	1241.7	874.2	692.4	635.3
62.5°	1381.0	1095.6	749.2	578.1	549.7
65°	1231.1	941.9	620.9	499.7	488.7
67.5°	1088.4	799.2	499.7	438.7	428.2
70°	938.4	660.3	413.7	378.2	363.9
72.5°	795.7	531.5	346.0	317.6	310.4
75°	656.4	406.6	285.4	260.4	257.0
77.5°	517.5	288.9	224.9	210.5	203.3
80°	388.8	207.1	171.1	157.1	157.1
82.5°	271.0	139.3	117.7	110.6	110.6
85°	153.3	78.3	67.7	67.7	67.7
87.5°	57.1	28.4	28.4	25.0	25.0
90°	1.3	16.4	44.6	41.9	43.2
92.5°	28.2	38.2	39.6	40.9	40.9
95°	66.4	79.2	81.4	81.4	79.2
97.5°	110.5	122.3	127.4	127.4	127.4
100°	161.4	171.9	175.5	175.5	174.2
102.5°	215.1	222.9	227.8	229.2	227.8
105°	273.8	277.4	280.2	282.4	282.4
107.5°	332.0	337.4	337.4	338.4	332.0
110°	388.4	395.7	395.7	395.7	392.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	449.3	457.1	455.7	452.1	449.3
115°	509.3	516.7	514.4	513.1	509.3
117.5°	569.0	579.0	572.6	569.0	565.3
120°	629.0	639.0	629.0	629.0	624.9
122.5°	683.5	696.3	689.9	686.3	683.5
125°	740.9	752.2	748.6	744.5	743.2
127.5°	796.8	810.9	805.9	800.4	796.8
130°	849.2	865.5	863.2	860.5	855.5
132.5°	907.8	920.5	921.5	915.1	911.5
135°	958.3	972.3	975.1	973.7	970.1
137.5°	1014.7	1026.0	1028.3	1027.4	1021.9
140°	1064.2	1075.6	1081.9	1081.9	1077.0
142.5°	1115.1	1126.6	1130.2	1131.5	1126.6
145°	1163.4	1172.5	1179.7	1181.1	1176.1
147.5°	1206.6	1218.0	1223.4	1225.7	1220.6
150°	1251.2	1258.9	1263.9	1268.0	1263.9
152.5°	1290.8	1298.5	1304.8	1309.8	1304.8
155°	1330.3	1333.9	1338.0	1344.4	1340.3
157.5°	1364.4	1367.1	1369.4	1378.5	1372.1
160°	1394.8	1397.6	1398.9	1406.7	1401.2
162.5°	1423.1	1423.1	1424.4	1433.1	1426.7
165°	1447.2	1445.8	1445.8	1454.9	1448.6
167.5°	1469.0	1464.9	1464.9	1474.0	1467.6
170°	1485.4	1481.8	1480.4	1489.5	1481.8
172.5°	1496.7	1493.1	1491.8	1500.8	1493.1
175°	1505.9	1502.2	1499.5	1508.6	1500.8
177.5°	1510.8	1507.2	1504.5	1512.2	1504.5
180°	1508.6	1508.6	1508.6	1508.6	1508.6

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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	12.24	13.22	13.06	14.06	15.09	8.22	9.20	9.03	10.03	11.06
	3H	13.93	14.81	14.76	15.65	16.71	9.42	10.29	10.25	11.14	12.20
	4H	14.55	15.38	15.40	16.23	17.29	9.88	10.70	10.72	11.55	12.62
	6H	14.98	15.74	15.84	16.60	17.68	10.21	10.97	11.07	11.83	12.91
	8H	15.11	15.83	15.98	16.71	17.79	10.30	11.03	11.17	11.90	12.98
	12H	15.18	15.87	16.05	16.74	17.84	10.35	11.04	11.22	11.91	13.02
4H	2H	12.28	13.11	13.13	13.96	15.03	8.83	9.66	9.68	10.51	11.58
	3H	14.13	14.81	14.99	15.69	16.78	10.20	10.88	11.06	11.77	12.85
	4H	14.82	15.45	15.70	16.33	17.44	10.75	11.38	11.63	12.26	13.37
	6H	15.35	15.89	16.24	16.79	17.90	11.18	11.72	12.07	12.62	13.74
	8H	15.53	16.03	16.42	16.93	18.05	11.31	11.82	12.21	12.72	13.84
	12H	15.63	16.08	16.54	17.00	18.13	11.39	11.84	12.30	12.76	13.89
8H	4H	14.80	15.30	15.70	16.20	17.33	11.04	11.55	11.94	12.44	13.57
	6H	15.38	15.79	16.29	16.73	17.86	11.57	11.98	12.49	12.93	14.05
	8H	15.59	15.96	16.52	16.89	18.04	11.76	12.13	12.69	13.06	14.21
	12H	15.74	16.06	16.67	16.99	18.18	11.89	12.21	12.82	13.14	14.33
12H	4H	14.76	15.21	15.67	16.13	17.26	11.06	11.51	11.97	12.43	13.56
	6H	15.35	15.72	16.28	16.65	17.80	11.62	11.99	12.55	12.92	14.06
	8H	15.58	15.90	16.51	16.83	18.02	11.84	12.16	12.77	13.09	14.28

END OF REPORT