

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: P928234

Luminaire Tested: DFN2DIP-HX4F0-050D110US927-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928234
REPORT IS A COMBINATION OF REPORTS P900948 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D110US927-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

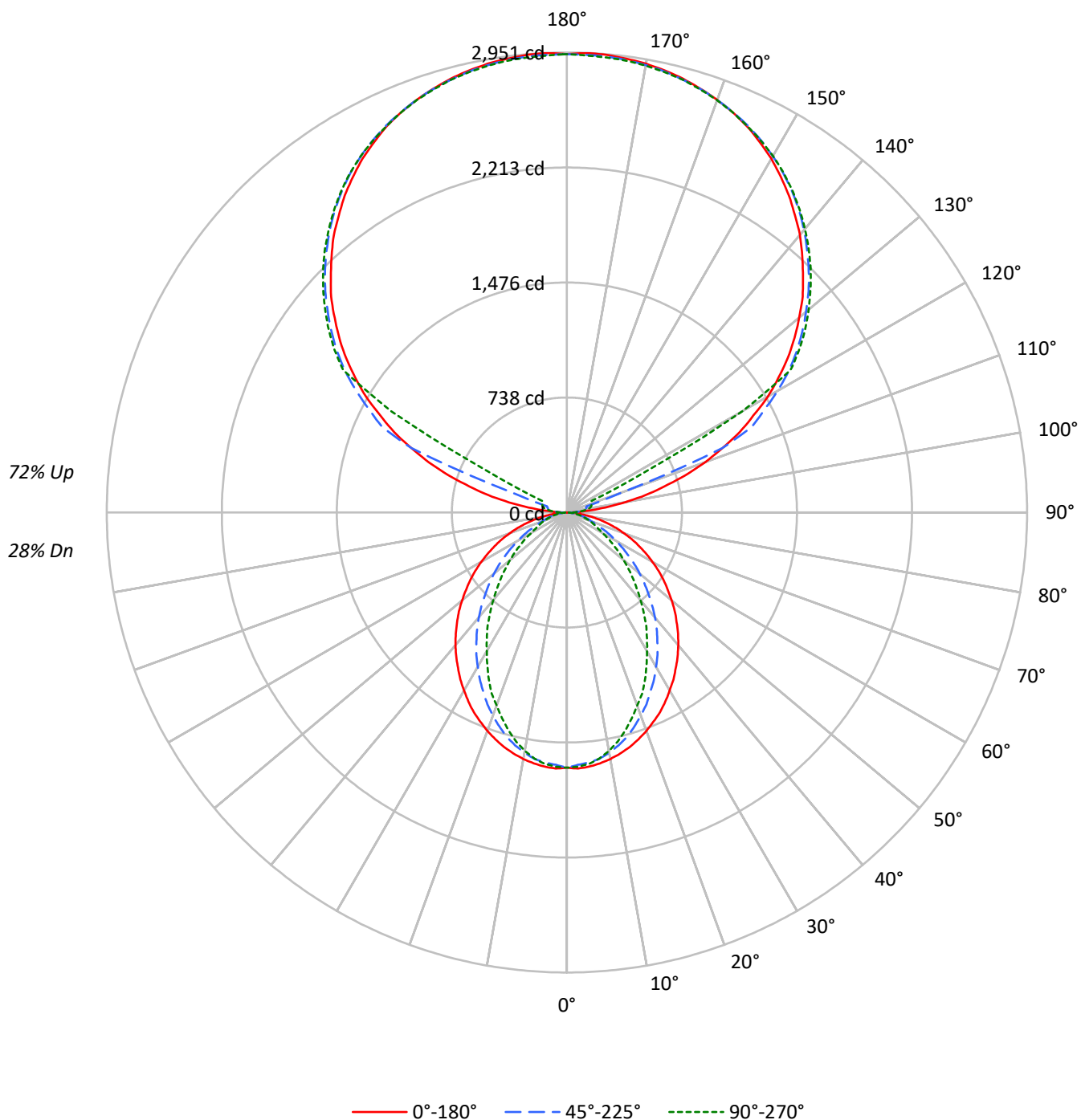
Lumens per Lamp: N/A
Luminaire Lumens: 11990.9 lumens
Efficiency: N/A
Efficacy: 91.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 130.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
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	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	63	61	59	47	46	44	32	32	31
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	29	27	26
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	26	24	23
4	71	61	53	48	63	55	49	44	43	39	35	33	30	28	23	21	20
5	65	54	47	41	58	49	42	37	39	34	31	30	26	24	21	19	17
6	60	49	41	35	54	44	37	33	35	30	27	27	24	21	19	17	15
7	55	44	36	31	50	40	33	28	32	27	24	24	21	19	17	15	14
8	51	40	32	27	46	36	30	25	29	24	21	22	19	17	16	14	12
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1217	1217	1217
5°	1219	1198	1205
10°	1207	1174	1166
15°	1191	1136	1106
20°	1169	1082	1031
25°	1146	1022	959
30°	1116	961	868
35°	1087	895	788
40°	1057	827	697
45°	1022	751	613
50°	986	674	532
55°	948	592	454
60°	904	507	374
65°	854	420	337
70°	794	339	305
75°	717	299	277
80°	607	251	241
85°	425	168	181

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1509 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.4	1.3
10°-20°	421.1	3.5
20°-30°	591.2	4.9
30°-40°	644.4	5.4
40°-50°	592.3	4.9
50°-60°	465.2	3.9
60°-70°	302.8	2.5
70°-80°	155.9	1.3
80°-90°	45.0	0.4
90°-100°	96.9	0.8
100°-110°	361.4	3.0
110°-120°	958.5	8.0
120°-130°	1589.8	13.3
130°-140°	1688.7	14.1
140°-150°	1569.5	13.1
150°-160°	1261.8	10.5
160°-170°	813.1	6.8
170°-180°	279.9	2.3
0°-30°	1165.7	9.7
0°-40°	1810.1	15.1
0°-60°	2867.6	23.9
0°-90°	3371.2	28.1
90°-120°	1416.9	11.8
90°-150°	6264.9	52.2
90°-180°	8620.0	71.9
0°-180°	11990.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1637	1637	1637	1637	1637	
5°	1637	1629	1610	1623	1619	155
15°	1557	1540	1490	1462	1447	439
25°	1413	1366	1268	1207	1185	650
35°	1218	1142	1012	918	886	762
45°	995	896	741	635	600	769
55°	757	641	481	392	364	676
65°	511	391	258	207	203	507
75°	272	169	118	108	107	288
85°	64	33	28	28	28	73
90°	2	26	42	53	57	11
95°	138	68	83	94	92	164
105°	647	711	130	153	162	691
115°	1223	1259	1313	328	175	1204
125°	1730	1757	1798	1813	1819	1543
135°	2140	2174	2193	2215	2211	1653
145°	2483	2481	2517	2532	2521	1553
155°	2734	2715	2740	2753	2736	1260
165°	2881	2868	2874	2889	2874	814
175°	2946	2932	2936	2951	2930	280
180°	2940	2940	2940	2940	2940	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1636.7	1636.7	1636.7	1636.7	1636.7
2.5°	1644.0	1636.7	1620.4	1635.2	1632.2
5°	1636.7	1629.3	1610.0	1623.3	1618.9
7.5°	1623.3	1614.5	1593.7	1599.6	1592.2
10°	1605.5	1595.2	1565.6	1561.1	1552.2
12.5°	1583.4	1570.1	1530.0	1521.2	1504.8
15°	1556.7	1540.4	1490.1	1462.0	1447.1
17.5°	1525.6	1501.9	1439.6	1407.1	1383.3
20°	1490.1	1460.4	1386.3	1349.4	1316.7
22.5°	1451.6	1417.4	1331.5	1281.2	1259.0
25°	1413.0	1365.6	1267.8	1207.2	1184.8
27.5°	1367.2	1316.7	1208.6	1139.0	1104.9
30°	1318.3	1261.9	1143.4	1067.9	1027.9
32.5°	1270.8	1202.7	1081.3	992.4	955.3
35°	1217.5	1142.0	1011.7	918.3	885.7
37.5°	1165.7	1084.2	946.5	844.2	807.3
40°	1110.9	1022.1	878.2	773.2	734.7
42.5°	1054.6	959.8	810.2	700.5	663.6
45°	995.4	896.1	740.6	635.3	599.8
47.5°	939.1	834.0	674.0	568.7	536.2
50°	876.9	771.7	608.8	506.5	475.5
52.5°	816.1	705.0	546.6	448.8	420.7
55°	756.8	641.3	481.3	392.5	364.4
57.5°	696.2	577.7	423.6	340.7	317.0
60°	633.9	515.4	362.8	287.4	263.7
62.5°	573.2	454.8	311.0	240.0	228.2
65°	511.0	391.0	257.7	207.4	202.9
67.5°	451.8	331.8	207.4	182.2	177.7
70°	389.6	274.0	171.8	157.0	151.0
72.5°	330.3	220.7	143.7	131.9	128.9
75°	272.5	168.8	118.5	108.1	106.7
77.5°	214.8	119.9	93.4	87.4	84.3
80°	161.4	85.9	71.0	65.2	65.2
82.5°	112.5	57.8	48.9	45.9	45.9
85°	63.7	32.6	28.1	28.1	28.1
87.5°	23.8	11.8	11.8	10.4	10.4
90°	2.1	25.5	42.5	53.3	57.3
92.5°	53.3	44.7	51.0	55.4	57.3
95°	138.2	68.0	82.8	93.7	91.5
97.5°	248.8	74.5	108.3	114.9	117.0
100°	376.7	85.1	121.3	138.2	142.5
102.5°	516.9	512.8	125.5	148.8	155.4
105°	646.7	710.7	129.9	153.1	161.7
107.5°	797.9	850.8	134.2	157.4	166.0
110°	942.6	987.1	372.4	159.7	168.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1078.8	1116.9	1080.8	163.7	170.3
115°	1223.2	1259.4	1312.7	327.7	174.6
117.5°	1348.9	1391.3	1427.7	1123.2	565.9
120°	1489.3	1521.1	1559.5	1585.0	1297.8
122.5°	1608.3	1642.4	1685.1	1697.7	1700.0
125°	1729.6	1757.4	1797.8	1812.7	1819.0
127.5°	1840.2	1870.0	1902.1	1923.3	1925.4
130°	1944.5	1978.7	2001.9	2025.4	2023.4
132.5°	2050.9	2078.7	2102.0	2121.1	2119.2
135°	2140.4	2174.4	2193.4	2214.9	2210.6
137.5°	2233.8	2259.3	2280.8	2302.0	2295.7
140°	2325.3	2342.4	2365.7	2384.9	2374.3
142.5°	2402.1	2416.9	2444.5	2461.5	2450.8
145°	2482.9	2480.6	2516.7	2531.7	2521.1
147.5°	2552.9	2546.6	2582.7	2593.3	2585.0
150°	2621.1	2606.2	2640.3	2653.0	2642.3
152.5°	2678.5	2661.5	2693.4	2706.3	2691.4
155°	2733.8	2714.8	2740.3	2753.0	2736.0
157.5°	2778.5	2761.5	2780.8	2795.7	2778.5
160°	2816.9	2804.0	2816.9	2829.5	2814.6
162.5°	2850.7	2838.1	2848.7	2863.6	2844.5
165°	2880.6	2867.9	2874.2	2889.1	2874.2
167.5°	2904.0	2891.2	2897.8	2912.7	2893.5
170°	2923.3	2910.4	2914.6	2929.6	2910.4
172.5°	2935.9	2923.3	2927.5	2942.4	2923.3
175°	2946.5	2931.6	2935.9	2950.8	2929.6
177.5°	2950.8	2935.9	2938.2	2953.1	2933.9
180°	2940.2	2940.2	2940.2	2940.2	2940.2

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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	5.33	6.01	6.46	7.13	8.68	1.31	1.98	2.44	3.10	4.66
	3H	7.00	7.61	8.14	8.73	10.30	2.48	3.09	3.62	4.22	5.79
	4H	7.60	8.18	8.75	9.30	10.88	2.93	3.50	4.08	4.63	6.21
	6H	8.02	8.55	9.17	9.68	11.26	3.24	3.77	4.40	4.90	6.49
	8H	8.14	8.64	9.30	9.79	11.37	3.33	3.83	4.49	4.98	6.56
	12H	8.20	8.67	9.36	9.81	11.41	3.37	3.85	4.53	4.99	6.59
4H	2H	5.33	5.91	6.49	7.04	8.61	1.88	2.46	3.04	3.59	5.16
	3H	7.15	7.63	8.31	8.78	10.37	3.22	3.70	4.38	4.85	6.44
	4H	7.84	8.28	9.00	9.42	11.03	3.76	4.21	4.93	5.35	6.95
	6H	8.34	8.72	9.51	9.89	11.48	4.18	4.55	5.34	5.72	7.32
	8H	8.52	8.87	9.68	10.02	11.64	4.30	4.66	5.47	5.81	7.43
	12H	8.60	8.92	9.79	10.09	11.71	4.36	4.68	5.55	5.85	7.47
8H	4H	7.79	8.14	8.96	9.30	10.91	4.03	4.39	5.20	5.54	7.16
	6H	8.35	8.64	9.54	9.84	11.45	4.55	4.84	5.73	6.04	7.65
	8H	8.57	8.82	9.76	10.00	11.63	4.74	4.99	5.93	6.17	7.80
	12H	8.70	8.93	9.90	10.10	11.76	4.85	5.08	6.05	6.25	7.91
12H	4H	7.74	8.06	8.92	9.22	10.84	4.03	4.35	5.21	5.52	7.14
	6H	8.33	8.58	9.52	9.76	11.39	4.60	4.85	5.79	6.03	7.66
	8H	8.54	8.77	9.74	9.94	11.60	4.80	5.03	6.00	6.20	7.86

END OF REPORT