

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: P928470

Luminaire Tested: DFN2DIP-HX4F0-120D070US927-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928470
REPORT IS A COMBINATION OF REPORTS P900890 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-120D070US927-RLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

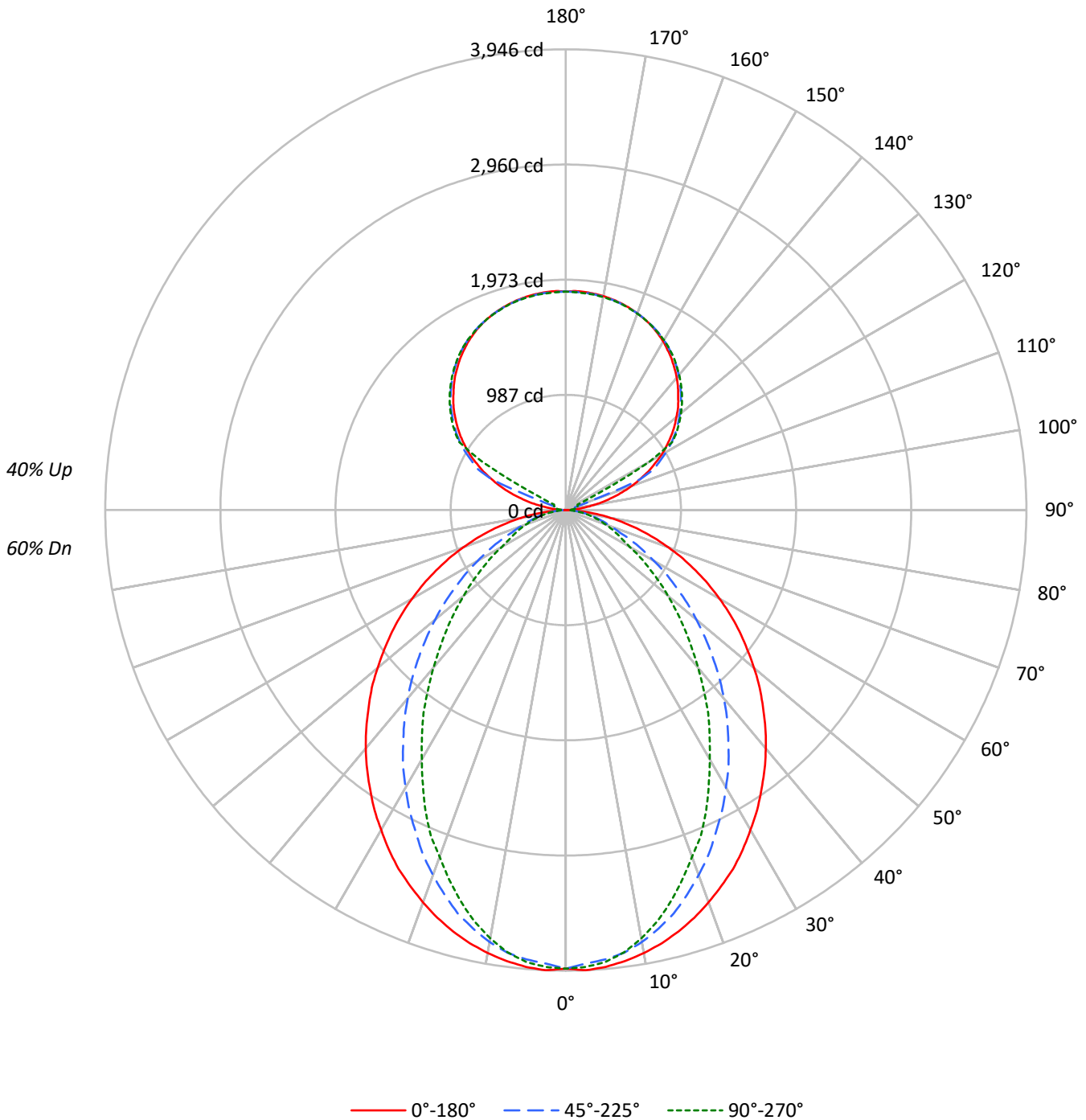
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13567.0 lumens
Efficiency: N/A
Efficacy: 76.1 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: General Diffuse

Input Watts (W): 178.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	109	109	109	109	102	102	102	102	89	89	89	76	76	76	65	65	65	60
1	101	96	93	89	94	90	87	84	79	76	74	68	66	65	58	57	56	51
2	92	85	79	74	86	80	74	70	70	66	62	60	58	55	52	50	48	44
3	84	75	68	62	79	71	64	59	62	57	53	54	50	47	47	44	42	38
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36	33
5	71	60	52	46	67	56	49	44	50	44	40	44	39	36	38	35	32	29
6	66	54	46	40	62	51	44	39	45	39	35	40	35	32	35	31	28	26
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	26	23
8	57	45	37	32	53	42	35	31	38	32	28	34	29	26	30	26	23	21
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21	19
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2921	2921	2921
5°	2926	2875	2893
10°	2897	2819	2799
15°	2857	2726	2654
20°	2805	2598	2475
25°	2751	2454	2303
30°	2679	2306	2084
35°	2608	2148	1892
40°	2536	1984	1672
45°	2452	1802	1472
50°	2365	1618	1277
55°	2275	1422	1090
60°	2171	1216	897
65°	2050	1008	808
70°	1905	813	731
75°	1722	717	666
80°	1457	602	578
85°	1019	404	435

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2452 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	368.1	2.7
10°-20°	1010.6	7.4
20°-30°	1418.9	10.5
30°-40°	1546.6	11.4
40°-50°	1421.5	10.5
50°-60°	1116.4	8.2
60°-70°	726.7	5.4
70°-80°	374.1	2.8
80°-90°	98.8	0.7
90°-100°	61.7	0.5
100°-110°	230.0	1.7
110°-120°	610.0	4.5
120°-130°	1011.7	7.5
130°-140°	1074.6	7.9
140°-150°	998.8	7.4
150°-160°	803.0	5.9
160°-170°	517.4	3.8
170°-180°	178.1	1.3
0°-30°	2797.6	20.6
0°-40°	4344.2	32.0
0°-60°	6882.2	50.7
0°-90°	8081.7	59.6
90°-120°	901.6	6.6
90°-150°	3986.8	29.4
90°-180°	5485.0	40.4
0°-180°	13567.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3928	3928	3928	3928	3928	
5°	3928	3910	3864	3896	3885	372
15°	3736	3697	3576	3509	3473	1053
25°	3391	3277	3043	2897	2844	1560
35°	2922	2741	2428	2204	2126	1829
45°	2389	2150	1778	1525	1440	1845
55°	1816	1539	1155	942	875	1623
65°	1226	938	619	498	487	1216
75°	654	405	284	260	256	692
85°	153	78	68	68	68	175
90°	1	16	27	34	36	13
95°	88	43	53	60	58	104
105°	412	452	83	97	103	440
115°	778	801	835	208	111	766
125°	1101	1118	1144	1154	1158	982
135°	1362	1384	1396	1409	1407	1052
145°	1580	1579	1602	1611	1604	988
155°	1740	1728	1744	1752	1741	802
165°	1833	1825	1829	1838	1829	518
175°	1875	1866	1868	1878	1864	178
180°	1871	1871	1871	1871	1871	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3928.0	3928.0	3928.0	3928.0	3928.0
2.5°	3945.7	3928.0	3888.8	3924.6	3917.4
5°	3928.0	3910.3	3863.9	3895.9	3885.4
7.5°	3895.9	3874.8	3825.0	3839.0	3821.2
10°	3853.3	3828.4	3757.5	3746.6	3725.5
12.5°	3800.1	3768.1	3671.9	3650.8	3611.6
15°	3736.0	3696.8	3576.1	3508.6	3473.2
17.5°	3661.3	3604.4	3455.0	3377.0	3320.1
20°	3576.1	3504.8	3327.2	3238.6	3160.1
22.5°	3483.7	3401.9	3195.6	3074.9	3021.7
25°	3391.3	3277.4	3042.8	2897.2	2843.7
27.5°	3281.2	3160.1	2900.6	2733.6	2651.7
30°	3163.9	3028.5	2744.1	2563.1	2466.9
32.5°	3050.0	2886.3	2595.1	2381.7	2292.7
35°	2922.2	2740.7	2428.0	2204.1	2125.6
37.5°	2797.7	2602.0	2271.5	2026.0	1937.4
40°	2666.0	2453.0	2107.9	1855.6	1763.2
42.5°	2531.0	2303.6	1944.6	1681.3	1592.7
45°	2388.8	2150.5	1777.5	1524.8	1439.5
47.5°	2253.8	2001.5	1617.6	1364.9	1286.8
50°	2104.5	1852.2	1461.1	1215.6	1141.3
52.5°	1958.5	1691.9	1311.7	1077.1	1009.6
55°	1816.4	1539.2	1155.2	942.1	874.6
57.5°	1670.7	1386.4	1016.8	817.7	760.7
60°	1521.4	1237.0	870.8	689.8	632.9
62.5°	1375.9	1091.5	746.4	575.9	547.6
65°	1226.5	938.4	618.6	497.9	486.9
67.5°	1084.3	796.1	497.9	437.1	426.6
70°	935.0	657.8	412.2	376.8	362.4
72.5°	792.8	529.5	344.7	316.4	309.3
75°	654.0	405.0	284.4	259.5	256.1
77.5°	515.6	287.7	224.1	209.7	202.5
80°	387.4	206.3	170.4	156.5	156.5
82.5°	270.1	138.8	117.3	110.1	110.1
85°	152.8	78.1	67.5	67.5	67.5
87.5°	56.9	28.3	28.3	24.9	24.9
90°	1.3	16.2	27.0	33.9	36.5
92.5°	33.9	28.4	32.5	35.2	36.5
95°	87.9	43.2	52.7	59.6	58.2
97.5°	158.3	47.4	69.0	73.2	74.4
100°	239.7	54.2	77.1	87.9	90.7
102.5°	328.9	326.4	79.9	94.7	98.8
105°	411.6	452.2	82.6	97.4	102.9
107.5°	507.7	541.5	85.4	100.2	105.7
110°	599.9	628.1	237.0	101.6	106.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	686.5	710.7	687.8	104.1	108.3
115°	778.5	801.4	835.3	208.5	111.1
117.5°	858.4	885.4	908.5	714.8	360.1
120°	947.7	968.0	992.5	1008.7	825.9
122.5°	1023.4	1045.1	1072.4	1080.4	1081.8
125°	1100.6	1118.3	1144.0	1153.5	1157.5
127.5°	1171.1	1190.0	1210.4	1224.0	1225.2
130°	1237.4	1259.1	1273.9	1288.9	1287.6
132.5°	1305.1	1322.8	1337.6	1349.8	1348.5
135°	1362.0	1383.7	1395.8	1409.4	1406.8
137.5°	1421.5	1437.8	1451.4	1465.0	1460.9
140°	1479.7	1490.6	1505.4	1517.6	1510.9
142.5°	1528.6	1538.1	1555.6	1566.3	1559.6
145°	1580.0	1578.6	1601.6	1611.1	1604.4
147.5°	1624.6	1620.6	1643.6	1650.3	1645.0
150°	1668.0	1658.5	1680.2	1688.2	1681.5
152.5°	1704.5	1693.7	1714.0	1722.1	1712.7
155°	1739.7	1727.6	1743.8	1751.9	1741.1
157.5°	1768.1	1757.4	1769.6	1779.1	1768.1
160°	1792.6	1784.4	1792.6	1800.6	1791.1
162.5°	1814.2	1806.1	1812.8	1822.3	1810.1
165°	1833.1	1825.1	1829.0	1838.5	1829.0
167.5°	1848.1	1839.8	1844.0	1853.5	1841.3
170°	1860.2	1852.1	1854.8	1864.3	1852.1
172.5°	1868.3	1860.2	1863.0	1872.4	1860.2
175°	1875.1	1865.6	1868.3	1877.8	1864.3
177.5°	1877.8	1868.3	1869.8	1879.3	1867.0
180°	1871.0	1871.0	1871.0	1871.0	1871.0



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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	11.72	12.64	12.60	13.53	14.66	7.69	8.61	8.57	9.50	10.63
	3H	13.41	14.22	14.30	15.13	16.28	8.89	9.71	9.78	10.61	11.77
	4H	14.02	14.79	14.93	15.70	16.87	9.35	10.12	10.25	11.03	12.19
	6H	14.45	15.16	15.36	16.07	17.25	9.67	10.38	10.59	11.30	12.48
	8H	14.58	15.25	15.50	16.18	17.36	9.77	10.44	10.69	11.38	12.55
	12H	14.64	15.28	15.57	16.21	17.41	9.81	10.46	10.74	11.38	12.59
4H	2H	11.75	12.52	12.66	13.43	14.60	8.30	9.07	9.21	9.98	11.15
	3H	13.59	14.23	14.51	15.17	16.35	9.66	10.30	10.58	11.24	12.42
	4H	14.28	14.87	15.22	15.80	17.01	10.21	10.80	11.15	11.73	12.94
	6H	14.81	15.31	15.75	16.27	17.47	10.64	11.14	11.58	12.10	13.31
	8H	14.98	15.45	15.93	16.41	17.63	10.77	11.24	11.72	12.19	13.41
	12H	15.08	15.51	16.05	16.48	17.70	10.84	11.26	11.81	12.23	13.46
8H	4H	14.26	14.73	15.21	15.68	16.90	10.50	10.97	11.45	11.92	13.14
	6H	14.83	15.22	15.80	16.21	17.43	11.02	11.41	12.00	12.41	13.63
	8H	15.05	15.39	16.03	16.37	17.61	11.22	11.56	12.20	12.54	13.78
	12H	15.19	15.49	16.18	16.47	17.75	11.34	11.64	12.33	12.62	13.91
12H	4H	14.21	14.64	15.18	15.61	16.83	10.51	10.93	11.48	11.90	13.13
	6H	14.81	15.15	15.79	16.13	17.37	11.07	11.42	12.06	12.40	13.64
	8H	15.03	15.33	16.02	16.31	17.59	11.29	11.59	12.27	12.57	13.85