

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: P928622

Luminaire Tested: DFN2DIP-HX4F0-070D090US930-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928622
REPORT IS A COMBINATION OF REPORTS P900916 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-070D090US930-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

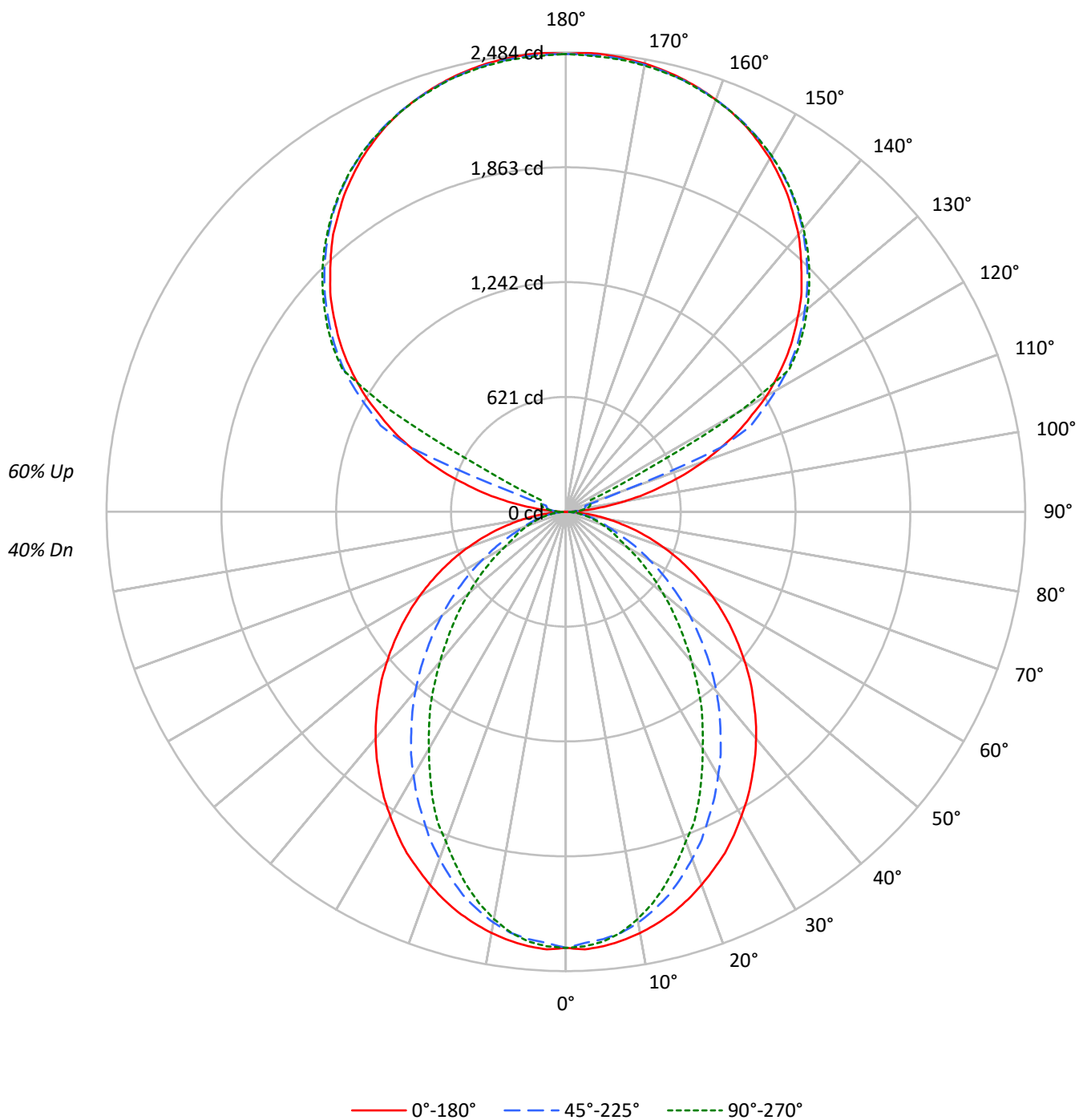
Lumens per Lamp: N/A
Luminaire Lumens: 12110.9 lumens
Efficiency: N/A
Efficacy: 90.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 134.2
Input Voltage (V):
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
RCR																					
0	105	105	105	105		95	95	95	95		78	78	78		62	62	62		47	47	47
1	96	92	88	85		87	84	81	78		69	67	65		55	53	52		42	41	40
2	88	81	75	70		80	74	69	64		61	57	54		49	46	44		38	36	35
3	80	71	64	59		73	65	59	54		54	49	46		43	40	38		34	32	30
4	74	63	56	50		67	58	51	46		48	43	39		39	35	33		30	28	26
5	68	56	49	43		61	52	45	40		43	38	34		35	31	28		27	25	23
6	62	51	43	37		57	47	40	35		39	34	30		32	28	25		25	22	20
7	58	46	38	33		52	42	35	31		35	30	26		29	25	22		23	20	18
8	54	42	34	29		49	38	32	27		32	27	24		27	23	20		21	18	16
9	50	38	31	26		45	35	29	24		30	25	21		24	21	18		20	17	15
10	47	35	28	23		43	32	26	22		27	22	19		23	19	16		18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1753	1753	1753
5°	1756	1726	1737
10°	1739	1692	1680
15°	1715	1636	1593
20°	1684	1559	1486
25°	1651	1473	1382
30°	1608	1384	1251
35°	1565	1289	1136
40°	1522	1191	1004
45°	1472	1082	884
50°	1420	971	767
55°	1366	853	654
60°	1303	730	539
65°	1231	605	485
70°	1143	488	439
75°	1034	431	399
80°	874	362	347
85°	611	242	261

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1472 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.0	1.8
10°-20°	606.6	5.0
20°-30°	851.7	7.0
30°-40°	928.4	7.7
40°-50°	853.3	7.0
50°-60°	670.1	5.5
60°-70°	436.2	3.6
70°-80°	224.5	1.9
80°-90°	61.7	0.5
90°-100°	81.6	0.7
100°-110°	304.3	2.5
110°-120°	807.0	6.7
120°-130°	1338.5	11.1
130°-140°	1421.8	11.7
140°-150°	1321.4	10.9
150°-160°	1062.4	8.8
160°-170°	684.6	5.7
170°-180°	235.6	1.9
0°-30°	1679.3	13.9
0°-40°	2607.7	21.5
0°-60°	4131.2	34.1
0°-90°	4853.6	40.1
90°-120°	1193.0	9.9
90°-150°	5274.7	43.6
90°-180°	7257.0	59.9
0°-180°	12110.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2358	2358	2358	2358	2358	
5°	2358	2347	2319	2339	2332	224
15°	2243	2219	2147	2106	2085	632
25°	2036	1967	1826	1739	1707	936
35°	1754	1645	1458	1323	1276	1098
45°	1434	1291	1067	915	864	1107
55°	1090	924	693	566	525	974
65°	736	563	371	299	292	730
75°	393	243	171	156	154	415
85°	92	47	40	40	40	105
90°	2	22	36	45	48	11
95°	116	57	70	79	77	138
105°	544	598	109	129	136	582
115°	1030	1060	1105	276	147	1014
125°	1456	1480	1514	1526	1532	1299
135°	1802	1831	1847	1865	1861	1392
145°	2090	2088	2119	2132	2123	1307
155°	2302	2286	2307	2318	2304	1061
165°	2425	2415	2420	2432	2420	685
175°	2481	2468	2472	2484	2466	236
180°	2476	2476	2476	2476	2476	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2357.9	2357.9	2357.9	2357.9	2357.9
2.5°	2368.5	2357.9	2334.3	2355.8	2351.5
5°	2357.9	2347.2	2319.4	2338.6	2332.3
7.5°	2338.6	2325.9	2296.1	2304.4	2293.8
10°	2313.1	2298.1	2255.5	2249.0	2236.3
12.5°	2281.1	2261.9	2204.2	2191.5	2167.9
15°	2242.6	2219.1	2146.6	2106.1	2084.9
17.5°	2197.8	2163.7	2074.0	2027.1	1992.9
20°	2146.6	2103.8	1997.2	1944.0	1896.9
22.5°	2091.2	2042.1	1918.2	1845.7	1813.9
25°	2035.7	1967.3	1826.5	1739.1	1707.0
27.5°	1969.6	1896.9	1741.2	1640.9	1591.8
30°	1899.2	1817.9	1647.2	1538.6	1480.9
32.5°	1830.8	1732.6	1557.8	1429.7	1376.2
35°	1754.0	1645.2	1457.5	1323.1	1276.0
37.5°	1679.4	1561.9	1363.6	1216.1	1163.0
40°	1600.3	1472.5	1265.3	1113.9	1058.4
42.5°	1519.3	1382.8	1167.2	1009.2	956.1
45°	1434.0	1290.9	1067.0	915.3	864.1
47.5°	1352.9	1201.5	971.0	819.3	772.5
50°	1263.2	1111.8	877.0	729.7	685.1
52.5°	1175.6	1015.6	787.4	646.5	606.0
55°	1090.3	923.9	693.4	565.5	525.0
57.5°	1002.9	832.2	610.4	490.8	456.6
60°	913.3	742.5	522.7	414.1	379.9
62.5°	825.8	655.2	448.0	345.7	328.7
65°	736.2	563.2	371.3	298.9	292.3
67.5°	650.9	477.9	298.9	262.3	256.1
70°	561.2	394.8	247.4	226.2	217.5
72.5°	475.9	317.8	206.9	190.0	185.7
75°	392.6	243.1	170.7	155.7	153.7
77.5°	309.5	172.7	134.5	125.8	121.6
80°	232.5	123.8	102.4	94.0	94.0
82.5°	162.1	83.3	70.4	66.1	66.1
85°	91.7	46.9	40.5	40.5	40.5
87.5°	34.1	17.0	17.0	14.9	14.9
90°	1.7	21.5	35.7	44.9	48.2
92.5°	44.9	37.7	43.0	46.6	48.2
95°	116.4	57.2	69.8	78.9	77.0
97.5°	209.5	62.8	91.3	96.7	98.5
100°	317.1	71.7	102.1	116.4	120.0
102.5°	435.2	431.8	105.7	125.3	130.8
105°	544.5	598.4	109.3	128.9	136.1
107.5°	671.7	716.4	113.0	132.5	139.8
110°	793.6	831.1	313.5	134.4	141.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	908.2	940.3	909.9	137.8	143.4
115°	1029.9	1060.3	1105.2	275.9	146.9
117.5°	1135.6	1171.4	1202.0	945.7	476.4
120°	1253.9	1280.7	1313.0	1334.5	1092.7
122.5°	1354.1	1382.8	1418.8	1429.3	1431.3
125°	1456.2	1479.6	1513.6	1526.2	1531.5
127.5°	1549.3	1574.4	1601.5	1619.3	1621.0
130°	1637.2	1665.9	1685.5	1705.2	1703.6
132.5°	1726.7	1750.1	1769.7	1785.9	1784.2
135°	1802.0	1830.7	1846.7	1864.8	1861.2
137.5°	1880.8	1902.2	1920.3	1938.2	1932.9
140°	1957.7	1972.2	1991.8	2007.9	1999.0
142.5°	2022.4	2035.0	2058.1	2072.4	2063.5
145°	2090.5	2088.5	2119.0	2131.6	2122.6
147.5°	2149.4	2144.1	2174.5	2183.5	2176.4
150°	2206.9	2194.3	2223.0	2233.6	2224.7
152.5°	2255.1	2240.8	2267.7	2278.5	2265.9
155°	2301.7	2285.7	2307.2	2317.9	2303.6
157.5°	2339.4	2325.1	2341.3	2353.8	2339.4
160°	2371.6	2360.8	2371.6	2382.3	2369.8
162.5°	2400.2	2389.5	2398.5	2411.0	2394.9
165°	2425.3	2414.6	2420.0	2432.5	2420.0
167.5°	2445.1	2434.2	2439.7	2452.3	2436.1
170°	2461.2	2450.4	2454.0	2466.5	2450.4
172.5°	2471.9	2461.2	2464.8	2477.4	2461.2
175°	2480.8	2468.2	2471.9	2484.4	2466.5
177.5°	2484.4	2471.9	2473.8	2486.3	2470.2
180°	2475.5	2475.5	2475.5	2475.5	2475.5

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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	8.10	8.85	9.14	9.90	11.31	4.07	4.82	5.11	5.87	7.28
	3H	9.77	10.44	10.82	11.50	12.93	5.25	5.93	6.31	6.98	8.41
	4H	10.37	11.01	11.44	12.07	13.51	5.70	6.34	6.77	7.40	8.83
	6H	10.79	11.38	11.87	12.44	13.89	6.02	6.61	7.10	7.67	9.12
	8H	10.92	11.48	12.00	12.55	13.99	6.11	6.67	7.19	7.75	9.19
	12H	10.98	11.51	12.06	12.58	14.04	6.15	6.68	7.24	7.75	9.22
4H	2H	8.11	8.74	9.18	9.80	11.24	4.66	5.30	5.73	6.35	7.79
	3H	9.93	10.46	11.01	11.54	12.99	6.00	6.53	7.08	7.62	9.06
	4H	10.62	11.11	11.70	12.18	13.65	6.55	7.03	7.63	8.11	9.58
	6H	11.13	11.55	12.22	12.65	14.11	6.96	7.38	8.06	8.48	9.94
	8H	11.31	11.70	12.40	12.78	14.26	7.09	7.48	8.19	8.57	10.05
	12H	11.40	11.75	12.51	12.85	14.34	7.16	7.51	8.27	8.61	10.09
8H	4H	10.58	10.97	11.67	12.06	13.54	6.82	7.21	7.92	8.30	9.78
	6H	11.15	11.47	12.26	12.60	14.07	7.34	7.66	8.46	8.79	10.27
	8H	11.36	11.64	12.48	12.76	14.25	7.53	7.81	8.65	8.93	10.42
	12H	11.50	11.75	12.62	12.86	14.39	7.65	7.90	8.77	9.01	10.54
12H	4H	10.53	10.88	11.64	11.99	13.47	6.82	7.18	7.93	8.28	9.76
	6H	11.12	11.40	12.24	12.52	14.01	7.39	7.67	8.51	8.79	10.28
	8H	11.34	11.59	12.46	12.70	14.23	7.60	7.85	8.72	8.96	10.49

END OF REPORT