

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: P918981

Luminaire Tested: DFN2DIP-HX3F0-060D090US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918981
REPORT IS A COMBINATION OF REPORTS P899292 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D090US935-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

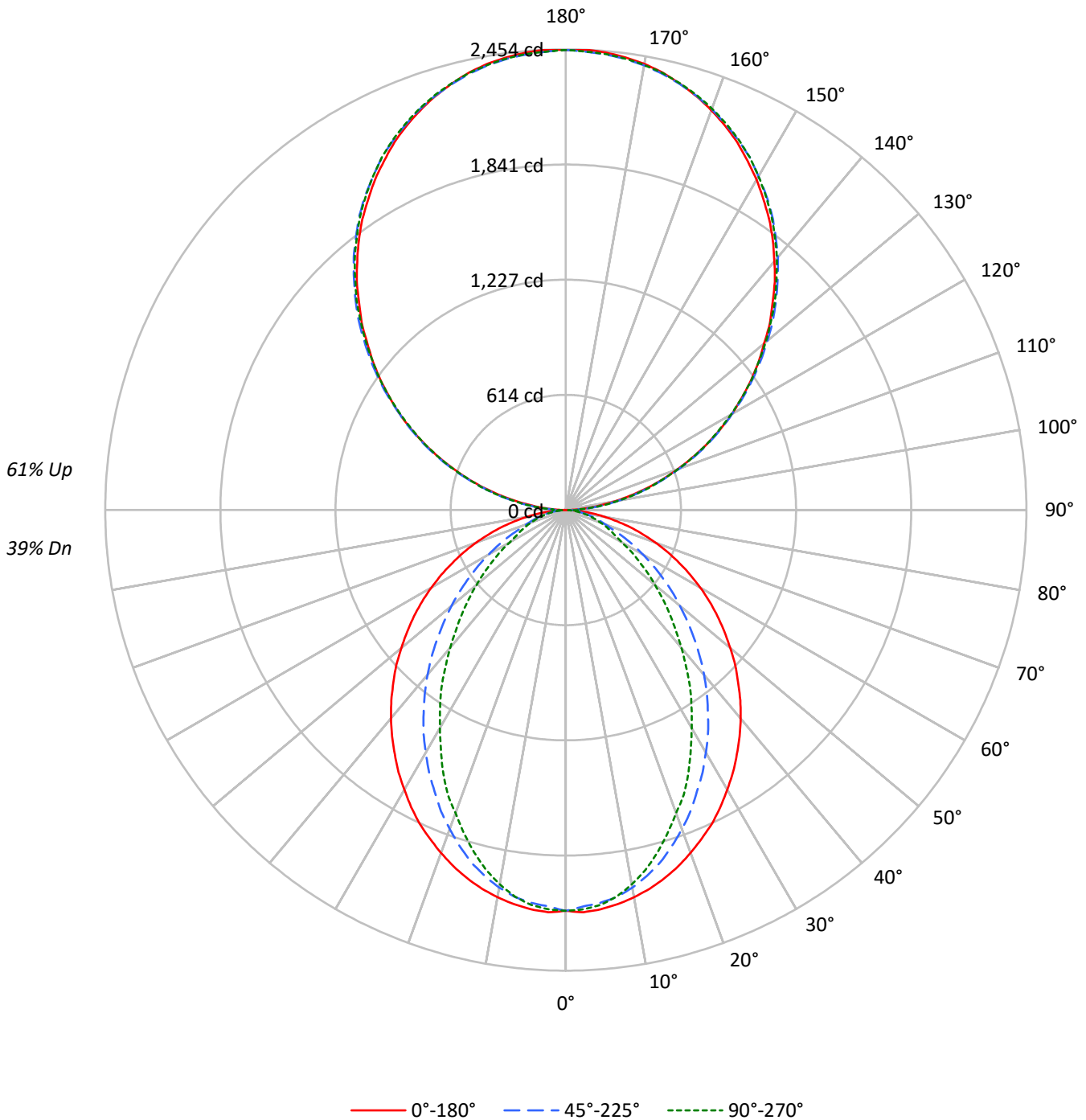
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11248.9 lumens
Efficiency: N/A
Efficacy: 88.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 127.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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				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	50	30	10	0
RCR																					
0	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46	39			
1	96	92	88	85	87	83	80	78	68	66	64	54	53	51	41	40	40	34			
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34	29			
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29	25			
4	73	63	55	50	66	58	51	46	48	43	39	38	35	32	30	27	26	22			
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	24	22	19			
6	62	51	43	37	56	46	40	35	39	33	30	31	28	25	25	22	20	17			
7	57	46	38	33	52	42	35	30	35	30	26	29	25	22	22	20	18	15			
8	53	41	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16	14			
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15	12			
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13	11			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2473	2473	2473
5°	2476	2432	2448
10°	2450	2383	2367
15°	2415	2302	2243
20°	2370	2192	2091
25°	2323	2069	1944
30°	2260	1943	1758
35°	2199	1807	1594
40°	2136	1667	1408
45°	2064	1512	1238
50°	1989	1356	1073
55°	1911	1189	914
60°	1820	1015	751
65°	1715	838	675
70°	1588	673	608
75°	1428	589	551
80°	1197	489	473
85°	818	318	348

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2307 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	200.1	1.8
10°-20°	549.3	4.9
20°-30°	771.2	6.9
30°-40°	840.7	7.5
40°-50°	772.7	6.9
50°-60°	606.8	5.4
60°-70°	395.0	3.5
70°-80°	203.3	1.8
80°-90°	58.9	0.5
90°-100°	151.6	1.3
100°-110°	481.8	4.3
110°-120°	824.6	7.3
120°-130°	1084.4	9.6
130°-140°	1217.2	10.8
140°-150°	1193.6	10.6
150°-160°	1001.3	8.9
160°-170°	664.0	5.9
170°-180°	232.1	2.1
0°-30°	1520.7	13.5
0°-40°	2361.4	21.0
0°-60°	3740.9	33.3
0°-90°	4398.0	39.1
90°-120°	1458.0	13.0
90°-150°	4953.4	44.0
90°-180°	6851.0	60.9
0°-180°	11248.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2135	2135	2135	2135	2135	
5°	2135	2126	2100	2118	2112	202
15°	2031	2009	1944	1907	1888	572
25°	1843	1782	1654	1575	1546	848
35°	1588	1490	1320	1198	1155	994
45°	1298	1169	966	829	782	1003
55°	987	837	628	512	475	882
65°	667	510	336	271	265	661
75°	356	220	154	141	139	376
85°	83	42	37	37	37	95
90°	2	27	72	68	70	11
95°	108	128	132	132	128	120
105°	445	451	455	459	459	469
115°	828	839	836	833	828	818
125°	1204	1222	1216	1209	1207	1076
135°	1557	1580	1584	1582	1576	1203
145°	1890	1905	1916	1919	1911	1181
155°	2161	2167	2174	2184	2177	995
165°	2351	2349	2349	2364	2353	663
175°	2446	2440	2436	2451	2438	232
180°	2451	2451	2451	2451	2451	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2135.1	2135.1	2135.1	2135.1	2135.1
2.5°	2144.7	2135.1	2113.7	2133.2	2129.3
5°	2135.1	2125.5	2100.2	2117.7	2111.9
7.5°	2117.7	2106.2	2079.1	2086.7	2077.1
10°	2094.5	2080.9	2042.5	2036.5	2025.0
12.5°	2065.6	2048.1	1995.9	1984.4	1963.1
15°	2030.7	2009.4	1943.8	1907.1	1887.8
17.5°	1990.2	1959.2	1878.0	1835.6	1804.7
20°	1943.8	1905.0	1808.5	1760.3	1717.7
22.5°	1893.6	1849.1	1737.0	1671.4	1642.4
25°	1843.4	1781.5	1654.0	1574.9	1545.7
27.5°	1783.6	1717.7	1576.7	1485.8	1441.4
30°	1719.8	1646.1	1491.6	1393.2	1340.9
32.5°	1657.9	1568.9	1410.7	1294.6	1246.2
35°	1588.4	1489.8	1319.8	1198.0	1155.4
37.5°	1520.7	1414.3	1234.8	1101.3	1053.1
40°	1449.1	1333.3	1145.7	1008.6	958.4
42.5°	1375.8	1252.1	1057.0	913.9	865.7
45°	1298.5	1168.9	966.2	828.8	782.5
47.5°	1225.1	1088.0	879.3	741.9	699.5
50°	1143.9	1006.8	794.2	660.7	620.3
52.5°	1064.5	919.6	713.0	585.5	548.8
55°	987.3	836.6	627.9	512.1	475.4
57.5°	908.2	753.5	552.7	444.4	413.5
60°	827.0	672.4	473.4	375.0	344.0
62.5°	747.9	593.3	405.7	313.1	297.6
65°	666.7	510.1	336.2	270.6	264.7
67.5°	589.4	432.7	270.6	237.6	231.9
70°	508.2	357.5	224.0	204.8	197.0
72.5°	430.9	287.8	187.4	172.0	168.1
75°	355.5	220.2	154.5	141.0	139.2
77.5°	280.3	156.4	121.7	114.0	110.1
80°	210.5	112.1	92.6	85.1	85.1
82.5°	146.8	75.4	63.7	59.8	59.8
85°	83.0	42.4	36.7	36.7	36.7
87.5°	31.0	15.4	15.4	13.5	13.5
90°	2.2	26.6	72.4	67.9	70.2
92.5°	45.8	62.1	64.3	66.5	66.5
95°	107.9	128.5	132.2	132.2	128.5
97.5°	179.5	198.7	206.9	206.9	206.9
100°	262.3	279.3	285.2	285.2	283.0
102.5°	349.5	362.0	370.1	372.4	370.1
105°	444.8	450.6	455.1	458.8	458.8
107.5°	539.3	548.2	548.2	549.7	539.3
110°	630.9	642.8	642.8	642.8	636.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	730.0	742.5	740.3	734.4	730.0
115°	827.5	839.3	835.6	833.4	827.5
117.5°	924.3	940.6	930.2	924.3	918.3
120°	1021.8	1038.0	1021.8	1021.8	1015.1
122.5°	1110.4	1131.2	1120.8	1114.9	1110.4
125°	1203.6	1222.0	1216.2	1209.4	1207.3
127.5°	1294.4	1317.3	1309.2	1300.4	1294.4
130°	1379.4	1406.0	1402.3	1397.8	1389.7
132.5°	1474.7	1495.4	1496.8	1486.5	1480.7
135°	1556.7	1579.6	1584.1	1581.8	1576.0
137.5°	1648.3	1666.8	1670.5	1669.0	1660.2
140°	1728.9	1747.3	1757.6	1757.6	1749.5
142.5°	1811.6	1830.1	1836.0	1838.2	1830.1
145°	1890.0	1904.7	1916.5	1918.7	1910.6
147.5°	1960.1	1978.6	1987.4	1991.1	1983.1
150°	2032.6	2045.1	2053.2	2059.9	2053.2
152.5°	2096.8	2109.4	2119.7	2127.9	2119.7
155°	2161.1	2167.0	2173.7	2184.0	2177.4
157.5°	2216.5	2220.9	2224.6	2239.4	2229.0
160°	2266.0	2270.5	2272.7	2285.2	2276.3
162.5°	2311.8	2311.8	2314.0	2328.1	2317.7
165°	2351.0	2348.7	2348.7	2363.5	2353.2
167.5°	2386.4	2379.8	2379.8	2394.5	2384.2
170°	2413.0	2407.1	2404.9	2419.7	2407.1
172.5°	2431.5	2425.6	2423.4	2438.2	2425.6
175°	2446.3	2440.3	2435.9	2450.7	2438.2
177.5°	2454.4	2448.5	2444.0	2456.6	2444.0
180°	2450.7	2450.7	2450.7	2450.7	2450.7



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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	9.14	9.88	10.19	10.94	12.36	5.11	5.86	6.16	6.91	8.33
	3H	10.80	11.47	11.86	12.53	13.97	6.29	6.96	7.35	8.02	9.46
	4H	11.40	12.03	12.47	13.10	14.54	6.73	7.37	7.81	8.43	9.88
	6H	11.81	12.39	12.89	13.46	14.92	7.05	7.63	8.13	8.70	10.16
	8H	11.93	12.49	13.02	13.57	15.02	7.13	7.69	8.22	8.77	10.22
	12H	11.99	12.51	13.08	13.59	15.07	7.17	7.70	8.26	8.77	10.25
4H	2H	9.14	9.78	10.22	10.84	12.29	5.69	6.33	6.77	7.39	8.84
	3H	10.96	11.48	12.04	12.57	14.03	7.03	7.56	8.12	8.65	10.11
	4H	11.64	12.12	12.73	13.20	14.68	7.57	8.06	8.66	9.14	10.62
	6H	12.14	12.56	13.24	13.66	15.13	7.98	8.40	9.08	9.50	10.97
	8H	12.31	12.70	13.41	13.79	15.28	8.11	8.49	9.21	9.59	11.08
	12H	12.40	12.75	13.51	13.86	15.35	8.16	8.51	9.28	9.62	11.12
8H	4H	11.60	11.99	12.70	13.08	14.57	7.84	8.23	8.94	9.32	10.81
	6H	12.15	12.47	13.28	13.61	15.10	8.35	8.67	9.47	9.81	11.29
	8H	12.37	12.64	13.49	13.76	15.27	8.54	8.82	9.66	9.94	11.44
	12H	12.49	12.74	13.63	13.86	15.40	8.65	8.89	9.78	10.01	11.55
12H	4H	11.55	11.90	12.66	13.01	14.50	7.84	8.19	8.96	9.30	10.79
	6H	12.13	12.41	13.26	13.53	15.03	8.40	8.68	9.52	9.80	11.30
	8H	12.34	12.59	13.47	13.70	15.25	8.60	8.85	9.73	9.96	11.50