

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: P916254

Luminaire Tested: DFN2DIP-HX3F0-070D030US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916254
REPORT IS A COMBINATION OF REPORTS P899209 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D030US930-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

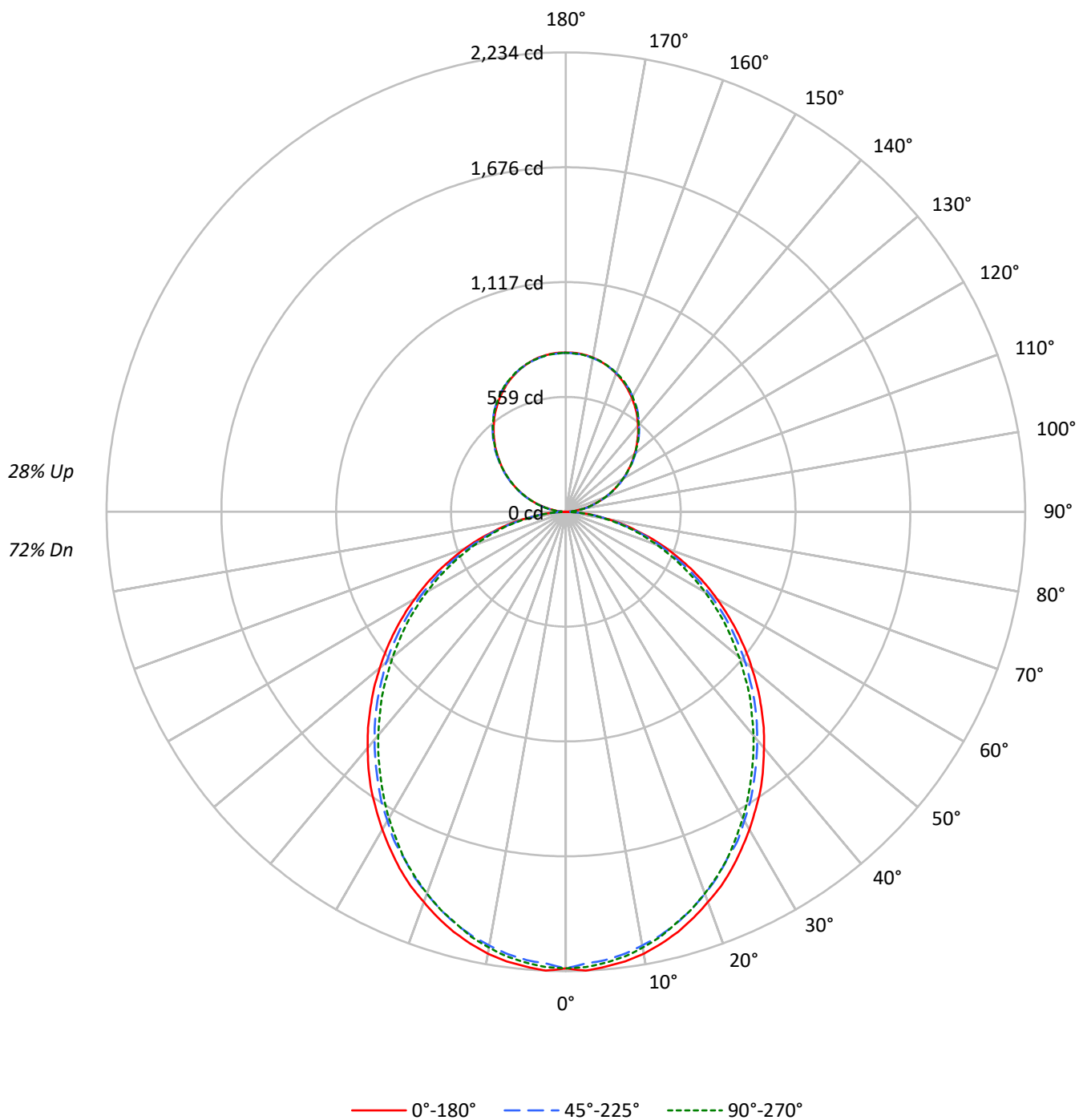
Lumens per Lamp: N/A
Luminaire Lumens: 7814.6 lumens
Efficiency: N/A
Efficacy: 84.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 92.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	112	112	112	112	107	107	107	107	96	96	96	86	86	86	77	77	77
1	103	98	94	91	97	93	90	87	84	81	79	76	74	72	68	66	65
2	94	86	80	74	89	82	76	71	74	69	65	66	63	60	60	57	55
3	85	76	68	62	81	72	65	60	65	60	55	59	54	51	53	49	46
4	78	67	59	52	74	64	56	51	58	52	47	52	48	44	47	43	40
5	72	60	51	45	68	57	49	44	52	46	41	47	42	38	43	38	35
6	66	54	45	39	63	51	44	38	47	40	36	43	37	33	39	34	31
7	62	49	41	35	58	47	39	34	43	36	32	39	34	30	35	31	27
8	57	44	36	31	54	43	35	30	39	33	28	36	30	26	33	28	25
9	53	41	33	28	51	39	32	27	36	30	25	33	28	24	30	26	22
10	50	37	30	25	47	36	29	24	33	27	23	30	25	22	28	24	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2572	2572	2572
5°	2575	2535	2552
10°	2553	2499	2516
15°	2515	2456	2461
20°	2463	2397	2404
25°	2411	2327	2339
30°	2347	2261	2256
35°	2285	2184	2169
40°	2210	2107	2086
45°	2135	2029	2000
50°	2053	1947	1902
55°	1967	1852	1811
60°	1870	1740	1707
65°	1764	1623	1583
70°	1628	1481	1451
75°	1441	1310	1326
80°	1215	1093	1092
85°	862	724	709

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2135 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.0	2.7
10°-20°	588.1	7.5
20°-30°	864.2	11.1
30°-40°	1003.7	12.8
40°-50°	1002.5	12.8
50°-60°	874.2	11.2
60°-70°	646.2	8.3
70°-80°	365.6	4.7
80°-90°	98.7	1.3
90°-100°	47.9	0.6
100°-110°	152.1	1.9
110°-120°	260.3	3.3
120°-130°	342.3	4.4
130°-140°	384.2	4.9
140°-150°	376.8	4.8
150°-160°	316.1	4.0
160°-170°	209.6	2.7
170°-180°	73.3	0.9
0°-30°	1661.3	21.3
0°-40°	2665.1	34.1
0°-60°	4541.7	58.1
0°-90°	5652.2	72.3
90°-120°	460.2	5.9
90°-150°	1563.5	20.0
90°-180°	2162.0	27.7
0°-180°	7814.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2221	2221	2221	2221	2221	
5°	2221	2212	2189	2206	2202	211
15°	2114	2101	2073	2082	2071	595
25°	1913	1896	1860	1864	1860	880
35°	1651	1629	1595	1582	1572	1031
45°	1343	1328	1296	1273	1264	1037
55°	1016	1004	978	952	942	909
65°	686	673	651	632	621	678
75°	359	355	344	331	335	383
85°	88	85	83	77	75	98
90°	1	8	23	21	22	7
95°	34	41	42	42	41	38
105°	140	142	144	145	145	148
115°	261	265	264	263	261	258
125°	380	386	384	382	381	339
135°	491	499	500	499	497	380
145°	597	601	605	606	603	373
155°	682	684	686	689	687	314
165°	742	741	741	746	743	209
175°	772	770	769	774	770	73
180°	774	774	774	774	774	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2220.6	2220.6	2220.6	2220.6	2220.6
2.5°	2233.6	2222.9	2199.3	2220.6	2216.6
5°	2220.6	2212.3	2188.7	2205.7	2201.6
7.5°	2205.7	2193.0	2169.4	2186.7	2182.4
10°	2182.4	2167.4	2141.8	2158.8	2152.5
12.5°	2150.2	2137.5	2111.9	2122.5	2118.2
15°	2114.0	2101.3	2073.4	2082.0	2071.3
17.5°	2069.1	2056.4	2028.5	2039.2	2028.5
20°	2019.9	2007.3	1977.3	1983.7	1975.3
22.5°	1971.0	1951.7	1923.9	1923.9	1919.5
25°	1913.3	1896.2	1860.0	1864.1	1860.0
27.5°	1849.1	1834.2	1806.5	1800.2	1789.5
30°	1785.3	1768.0	1736.1	1729.7	1721.1
32.5°	1716.8	1704.1	1669.9	1657.0	1648.4
35°	1650.7	1629.4	1595.1	1582.2	1571.6
37.5°	1575.9	1556.6	1522.4	1507.5	1496.8
40°	1499.1	1481.9	1447.6	1428.6	1420.0
42.5°	1424.3	1407.1	1373.1	1351.6	1338.9
45°	1343.2	1328.3	1296.1	1272.8	1264.1
47.5°	1264.1	1249.2	1215.0	1191.4	1178.8
50°	1180.8	1170.1	1140.2	1110.4	1099.7
52.5°	1099.7	1084.8	1057.1	1033.6	1018.6
55°	1016.5	1003.6	978.0	952.4	941.8
57.5°	933.2	922.5	894.6	869.0	860.5
60°	849.8	841.4	811.5	788.0	781.6
62.5°	768.7	753.7	732.5	711.2	702.5
65°	685.6	672.6	651.3	632.1	621.4
67.5°	600.1	589.3	570.2	555.3	546.7
70°	521.1	512.5	493.2	478.3	469.9
72.5°	439.9	431.4	420.7	405.8	399.4
75°	358.6	354.6	343.6	331.0	335.3
77.5°	286.2	277.5	273.2	266.8	260.6
80°	213.6	211.4	207.1	200.7	196.4
82.5°	145.2	145.2	143.2	134.6	134.6
85°	87.5	85.4	83.4	76.8	74.8
87.5°	38.5	34.2	29.9	23.6	21.3
90°	0.7	8.4	22.8	21.4	22.2
92.5°	14.4	19.6	20.3	21.0	21.0
95°	34.1	40.6	41.7	41.7	40.6
97.5°	56.7	62.7	65.3	65.3	65.3
100°	82.8	88.1	90.0	90.0	89.4
102.5°	110.3	114.3	116.8	117.6	116.8
105°	140.4	142.3	143.7	144.8	144.8
107.5°	170.2	173.0	173.0	173.5	170.2
110°	199.2	202.9	202.9	202.9	201.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	230.4	234.4	233.7	231.8	230.4
115°	261.2	264.9	263.7	263.1	261.2
117.5°	291.7	296.9	293.6	291.7	289.8
120°	322.5	327.7	322.5	322.5	320.4
122.5°	350.5	357.0	353.8	351.9	350.5
125°	379.9	385.7	383.8	381.7	381.1
127.5°	408.5	415.8	413.3	410.4	408.5
130°	435.4	443.8	442.6	441.2	438.6
132.5°	465.5	472.0	472.5	469.2	467.3
135°	491.4	498.6	500.0	499.3	497.4
137.5°	520.2	526.1	527.3	526.8	524.0
140°	545.7	551.5	554.8	554.8	552.2
142.5°	571.9	577.6	579.5	580.2	577.6
145°	596.6	601.2	605.0	605.6	603.1
147.5°	618.7	624.5	627.3	628.5	625.9
150°	641.6	645.6	648.1	650.2	648.1
152.5°	661.9	665.8	669.0	671.6	669.0
155°	682.2	684.0	686.1	689.3	687.3
157.5°	699.6	701.0	702.2	706.9	703.6
160°	715.3	716.6	717.4	721.3	718.5
162.5°	729.7	729.7	730.4	734.8	731.6
165°	742.1	741.4	741.4	746.0	742.7
167.5°	753.3	751.1	751.1	755.8	752.5
170°	761.7	759.8	759.1	763.8	759.8
172.5°	767.4	765.6	764.9	769.6	765.6
175°	772.2	770.3	768.9	773.6	769.6
177.5°	774.7	772.8	771.4	775.4	771.4
180°	773.6	773.6	773.6	773.6	773.6

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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	12.36	13.46	13.09	14.22	15.13	11.93	13.03	12.67	13.79	14.70
	3H	14.03	15.02	14.78	15.79	16.73	13.56	14.55	14.31	15.32	16.26
	4H	14.62	15.56	15.39	16.34	17.29	14.15	15.09	14.92	15.87	16.82
	6H	15.03	15.89	15.81	16.68	17.65	14.56	15.42	15.34	16.21	17.18
	8H	15.14	15.96	15.93	16.77	17.74	14.67	15.49	15.46	16.30	17.27
	12H	15.19	15.98	15.99	16.78	17.77	14.71	15.50	15.51	16.30	17.30
4H	2H	12.84	13.78	13.62	14.56	15.52	12.50	13.44	13.27	14.22	15.17
	3H	14.72	15.51	15.51	16.32	17.29	14.33	15.12	15.12	15.93	16.90
	4H	15.44	16.15	16.24	16.97	17.97	15.04	15.75	15.84	16.57	17.57
	6H	15.96	16.58	16.78	17.42	18.42	15.56	16.17	16.38	17.01	18.02
	8H	16.11	16.69	16.94	17.52	18.54	15.71	16.28	16.53	17.12	18.14
	12H	16.20	16.71	17.04	17.57	18.59	15.78	16.30	16.62	17.15	18.18
8H	4H	15.65	16.23	16.48	17.06	18.08	15.30	15.87	16.12	16.71	17.73
	6H	16.29	16.76	17.14	17.64	18.66	15.93	16.41	16.78	17.28	18.30
	8H	16.50	16.93	17.37	17.80	18.84	16.14	16.56	17.00	17.44	18.47
	12H	16.64	17.02	17.51	17.88	18.97	16.26	16.64	17.13	17.50	18.59
12H	4H	15.65	16.17	16.49	17.02	18.05	15.30	15.82	16.14	16.68	17.70
	6H	16.32	16.74	17.18	17.61	18.65	15.97	16.39	16.83	17.27	18.30
	8H	16.56	16.94	17.43	17.80	18.89	16.21	16.59	17.07	17.45	18.54