

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: P905294

Luminaire Tested: DFN2DIP-HX3F0-050D030US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905294
REPORT IS A COMBINATION OF REPORTS P899205 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D030US835-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

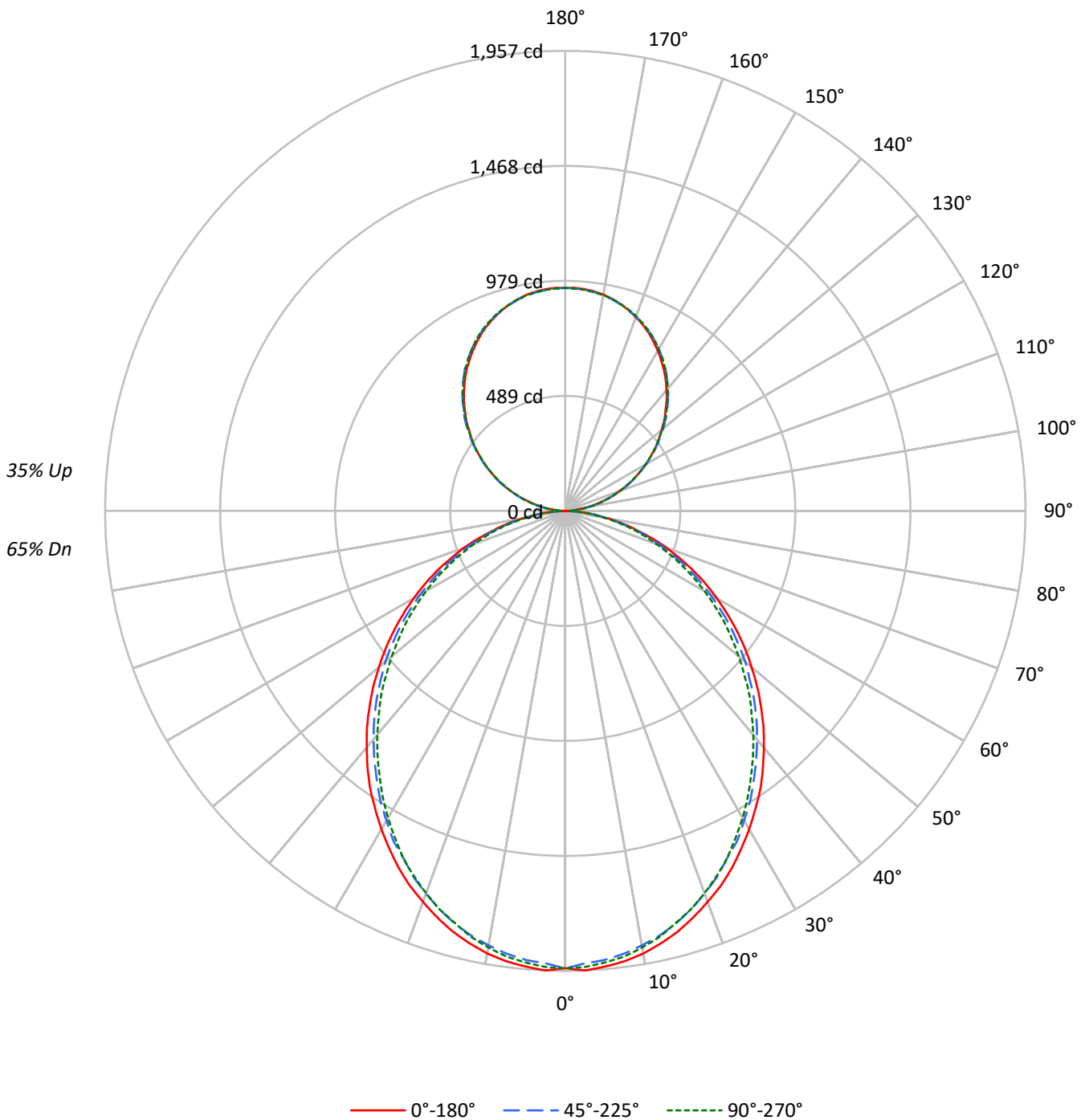
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7605.0 lumens
Efficiency: N/A
Efficacy: 112.3 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): 67.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	50	30	10	0
RCR																					
0	111	111	111	111	104	104	104	104	92	92	92	80	80	80	70	70	70	70	70	70	65
1	101	97	93	89	95	91	88	84	81	78	75	71	69	67	62	60	59	62	60	59	55
2	92	85	78	73	86	80	74	69	71	66	63	62	59	56	55	52	50	55	52	50	46
3	84	74	67	61	79	70	63	58	62	57	53	55	51	47	48	45	42	48	45	42	39
4	77	66	58	52	72	62	55	49	55	50	45	49	44	41	43	40	37	43	40	37	33
5	71	59	50	44	66	56	48	42	50	44	39	44	39	35	39	35	32	39	35	32	29
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	35	31	28	35	31	28	26
7	60	48	40	34	57	45	38	33	41	35	30	36	31	28	32	28	25	32	28	25	23
8	56	44	36	30	53	41	34	29	37	31	27	33	28	25	30	26	22	30	26	22	20
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	27	23	20	27	23	20	18
10	49	37	29	24	46	35	28	23	32	26	22	28	24	20	25	21	19	25	21	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2254	2254	2254
5°	2256	2221	2236
10°	2237	2189	2204
15°	2203	2152	2156
20°	2158	2100	2106
25°	2112	2038	2049
30°	2056	1981	1977
35°	2002	1914	1900
40°	1936	1846	1827
45°	1871	1777	1752
50°	1799	1706	1666
55°	1723	1623	1586
60°	1638	1524	1495
65°	1545	1422	1387
70°	1426	1298	1271
75°	1262	1148	1162
80°	1064	957	957
85°	755	633	621

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1871 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.1	2.4
10°-20°	515.2	6.8
20°-30°	757.2	10.0
30°-40°	879.4	11.6
40°-50°	878.3	11.5
50°-60°	765.8	10.1
60°-70°	566.1	7.4
70°-80°	320.3	4.2
80°-90°	87.2	1.1
90°-100°	58.7	0.8
100°-110°	186.5	2.5
110°-120°	319.2	4.2
120°-130°	419.8	5.5
130°-140°	471.2	6.2
140°-150°	462.1	6.1
150°-160°	387.7	5.1
160°-170°	257.1	3.4
170°-180°	89.9	1.2
0°-30°	1455.5	19.1
0°-40°	2334.9	30.7
0°-60°	3979.0	52.3
0°-90°	4952.7	65.1
90°-120°	564.5	7.4
90°-150°	1917.7	25.2
90°-180°	2652.0	34.9
0°-180°	7605.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1946	1946	1946	1946	1946	
5°	1946	1938	1918	1932	1929	185
15°	1852	1841	1816	1824	1815	522
25°	1676	1661	1630	1633	1630	771
35°	1446	1428	1398	1386	1377	903
45°	1177	1164	1136	1115	1108	908
55°	891	879	857	834	825	796
65°	601	589	571	554	544	594
75°	314	311	301	290	294	335
85°	77	75	73	67	66	85
90°	1	10	28	26	27	7
95°	42	50	51	51	50	46
105°	172	174	176	178	178	182
115°	320	325	324	323	320	317
125°	466	473	471	468	467	416
135°	603	612	613	612	610	466
145°	732	737	742	743	740	457
155°	837	839	842	846	843	385
165°	910	909	909	915	911	257
175°	947	945	943	949	944	90
180°	949	949	949	949	949	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1945.5	1945.5	1945.5	1945.5	1945.5
2.5°	1956.8	1947.5	1926.9	1945.5	1942.0
5°	1945.5	1938.2	1917.5	1932.4	1928.9
7.5°	1932.4	1921.3	1900.7	1915.8	1912.0
10°	1912.0	1898.9	1876.5	1891.3	1885.8
12.5°	1883.8	1872.7	1850.3	1859.6	1855.8
15°	1852.0	1840.9	1816.5	1824.1	1814.7
17.5°	1812.7	1801.6	1777.2	1786.5	1777.2
20°	1769.7	1758.6	1732.4	1737.9	1730.6
22.5°	1726.8	1709.9	1685.5	1685.5	1681.7
25°	1676.2	1661.3	1629.5	1633.1	1629.5
27.5°	1620.0	1606.9	1582.7	1577.1	1567.8
30°	1564.0	1549.0	1521.0	1515.4	1507.9
32.5°	1504.1	1493.0	1463.0	1451.7	1444.2
35°	1446.1	1427.5	1397.5	1386.2	1376.9
37.5°	1380.6	1363.8	1333.8	1320.7	1311.4
40°	1313.4	1298.3	1268.3	1251.6	1244.1
42.5°	1247.9	1232.8	1203.0	1184.1	1173.0
45°	1176.8	1163.7	1135.5	1115.1	1107.5
47.5°	1107.5	1094.4	1064.5	1043.8	1032.7
50°	1034.5	1025.2	999.0	972.8	963.4
52.5°	963.4	950.3	926.1	905.5	892.4
55°	890.6	879.3	856.8	834.4	825.1
57.5°	817.5	808.2	783.8	761.4	753.8
60°	744.5	737.2	711.0	690.3	684.8
62.5°	673.5	660.4	641.7	623.0	615.5
65°	600.6	589.3	570.6	553.8	544.4
67.5°	525.8	516.3	499.6	486.5	478.9
70°	456.5	449.0	432.1	419.0	411.7
72.5°	385.5	377.9	368.6	355.5	349.9
75°	314.2	310.6	301.1	290.0	293.8
77.5°	250.7	243.1	239.4	233.8	228.3
80°	187.2	185.2	181.4	175.9	172.1
82.5°	127.2	127.2	125.4	117.9	117.9
85°	76.6	74.8	73.0	67.3	65.5
87.5°	33.7	30.0	26.2	20.6	18.7
90°	0.9	10.3	28.0	26.3	27.2
92.5°	17.7	24.0	24.9	25.7	25.7
95°	41.8	49.8	51.2	51.2	49.8
97.5°	69.5	76.9	80.1	80.1	80.1
100°	101.5	108.1	110.4	110.4	109.6
102.5°	135.3	140.2	143.3	144.2	143.3
105°	172.2	174.5	176.2	177.6	177.6
107.5°	208.8	212.2	212.2	212.8	208.8
110°	244.3	248.9	248.9	248.9	246.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	282.6	287.5	286.6	284.3	282.6
115°	320.4	324.9	323.5	322.7	320.4
117.5°	357.8	364.1	360.1	357.8	355.5
120°	395.6	401.9	395.6	395.6	393.0
122.5°	429.9	437.9	433.9	431.6	429.9
125°	466.0	473.1	470.8	468.2	467.4
127.5°	501.1	510.0	506.9	503.4	501.1
130°	534.0	544.3	542.9	541.2	538.0
132.5°	570.9	578.9	579.5	575.5	573.2
135°	602.7	611.5	613.3	612.4	610.1
137.5°	638.1	645.3	646.7	646.2	642.7
140°	669.3	676.5	680.5	680.5	677.3
142.5°	701.4	708.5	710.8	711.7	708.5
145°	731.7	737.4	742.0	742.8	739.7
147.5°	758.9	766.0	769.4	770.9	767.7
150°	786.9	791.8	794.9	797.5	794.9
152.5°	811.8	816.6	820.6	823.8	820.6
155°	836.7	838.9	841.5	845.5	843.0
157.5°	858.1	859.8	861.3	867.0	863.0
160°	877.3	879.0	879.9	884.7	881.3
162.5°	895.0	895.0	895.9	901.3	897.3
165°	910.2	909.3	909.3	915.0	911.0
167.5°	923.9	921.3	921.3	927.0	923.0
170°	934.2	931.9	931.1	936.8	931.9
172.5°	941.3	939.1	938.2	943.9	939.1
175°	947.1	944.8	943.1	948.8	943.9
177.5°	950.2	947.9	946.2	951.1	946.2
180°	948.8	948.8	948.8	948.8	948.8



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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	11.34	12.36	12.16	13.19	14.23	10.91	11.93	11.73	12.77	13.80
	3H	13.00	13.92	13.83	14.76	15.83	12.54	13.45	13.36	14.30	15.36
	4H	13.59	14.46	14.44	15.31	16.39	13.13	13.99	13.97	14.84	15.92
	6H	14.00	14.79	14.85	15.65	16.74	13.53	14.32	14.38	15.18	16.27
	8H	14.10	14.86	14.97	15.74	16.83	13.63	14.39	14.50	15.27	16.36
	12H	14.15	14.87	15.02	15.75	16.86	13.68	14.40	14.55	15.27	16.39
4H	2H	11.82	12.68	12.67	13.53	14.61	11.47	12.34	12.32	13.19	14.27
	3H	13.69	14.41	14.55	15.30	16.39	13.30	14.02	14.16	14.91	16.00
	4H	14.40	15.06	15.28	15.94	17.06	14.00	14.66	14.87	15.54	16.66
	6H	14.92	15.49	15.81	16.40	17.52	14.51	15.08	15.40	15.99	17.11
	8H	15.07	15.60	15.96	16.50	17.64	14.66	15.19	15.55	16.10	17.23
	12H	15.15	15.62	16.06	16.55	17.69	14.73	15.21	15.64	16.13	17.27
8H	4H	14.61	15.14	15.50	16.04	17.18	14.25	14.78	15.14	15.68	16.82
	6H	15.24	15.68	16.16	16.62	17.76	14.88	15.32	15.80	16.26	17.40
	8H	15.45	15.84	16.38	16.78	17.93	15.09	15.48	16.02	16.42	17.57
	12H	15.59	15.93	16.52	16.86	18.06	15.21	15.55	16.14	16.48	17.68
12H	4H	14.60	15.08	15.51	16.00	17.14	14.25	14.73	15.16	15.65	16.79
	6H	15.27	15.66	16.20	16.59	17.75	14.92	15.31	15.85	16.25	17.40
	8H	15.51	15.85	16.44	16.78	17.99	15.16	15.50	16.09	16.43	17.63