

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: P905210

Luminaire Tested: DFN2DIP-HX2F0-050D030US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905210
REPORT IS A COMBINATION OF REPORTS P899167 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-050D030US835-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

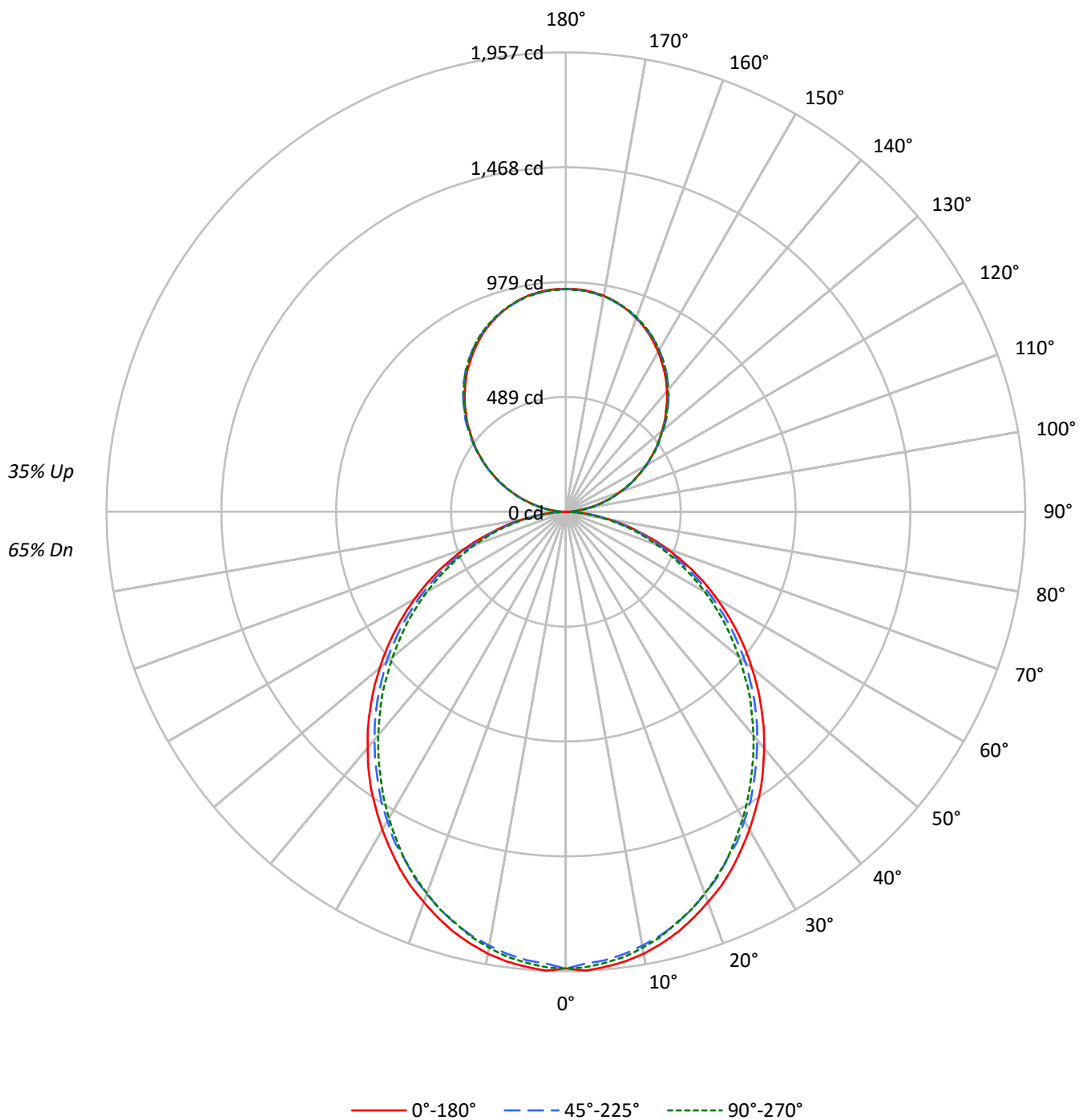
Lumens per Lamp: N/A
Luminaire Lumens: 7605.0 lumens
Efficiency: N/A
Efficacy: 109.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 69.3
Input Voltage (V): 120
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

TEST NUMBER: P905210

CATALOG NUMBER: DFN2DIP-HX2F0-050D030US835-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P905210

CATALOG NUMBER: DFN2DIP-HX2F0-050D030US835-FLLFL

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	111	111	111	111	104	104	104	104	92	92	92	80	80	80	70	70	70
1	101	97	93	89	95	91	88	84	81	78	75	71	69	67	62	60	59
2	92	85	78	73	86	80	74	69	71	66	63	62	59	56	55	52	50
3	84	74	67	61	79	70	63	58	62	57	53	55	51	47	48	45	42
4	77	66	58	52	72	62	55	49	55	50	45	49	44	41	43	40	37
5	71	59	50	44	66	56	48	42	50	44	39	44	39	35	39	35	32
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	35	31	28
7	60	48	40	34	57	45	38	33	41	35	30	36	31	28	32	28	25
8	56	44	36	30	53	41	34	29	37	31	27	33	28	25	30	26	22
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	27	23	20
10	49	37	29	24	46	35	28	23	32	26	22	28	24	20	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4584	4584	4584
5°	4584	4509	4542
10°	4540	4438	4472
15°	4465	4354	4368
20°	4368	4241	4261
25°	4271	4109	4139
30°	4151	3985	3987
35°	4036	3841	3826
40°	3897	3695	3672
45°	3758	3548	3514
50°	3605	3394	3332
55°	3444	3215	3162
60°	3262	3005	2968
65°	3062	2785	2740
70°	2809	2518	2492
75°	2460	2197	2252
80°	2037	1788	1817
85°	1383	1122	1125

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3758 cd/sqm

TEST NUMBER: P905210

CATALOG NUMBER: DFN2DIP-HX2F0-050D030US835-FLLFLL

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	

TEST NUMBER: P905210

CATALOG NUMBER: DFN2DIP-HX2F0-050D030US835-FLLFLL

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

TEST NUMBER: P905210

CATALOG NUMBER: DFN2DIP-HX2F0-050D030US835-FLLFLL

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	13.71	14.73	14.53	15.57	16.61	13.29	14.31	14.11	15.15	16.18
	3H	15.36	16.27	16.19	17.12	18.19	14.90	15.81	15.73	16.66	17.73
	4H	15.94	16.80	16.78	17.66	18.73	15.48	16.34	16.32	17.20	18.27
	6H	16.33	17.12	17.18	17.98	19.07	15.87	16.66	16.73	17.53	18.62
	8H	16.43	17.18	17.29	18.06	19.15	15.97	16.73	16.83	17.61	18.70
	12H	16.47	17.19	17.34	18.07	19.18	16.01	16.73	16.88	17.61	18.72
4H	2H	14.18	15.05	15.03	15.90	16.98	13.85	14.71	14.69	15.56	16.64
	3H	16.03	16.75	16.90	17.64	18.73	15.65	16.37	16.51	17.26	18.35
	4H	16.74	17.39	17.61	18.28	19.39	16.34	17.00	17.22	17.88	19.00
	6H	17.24	17.80	18.12	18.71	19.83	16.84	17.41	17.73	18.32	19.44
	8H	17.38	17.91	18.27	18.81	19.94	16.98	17.51	17.87	18.41	19.55
	12H	17.45	17.92	18.36	18.85	19.99	17.04	17.52	17.95	18.44	19.58
8H	4H	16.93	17.46	17.83	18.37	19.50	16.58	17.11	17.47	18.02	19.15
	6H	17.54	17.98	18.46	18.93	20.06	17.19	17.63	18.11	18.57	19.71
	8H	17.75	18.14	18.68	19.07	20.23	17.39	17.78	18.32	18.72	19.87
	12H	17.87	18.21	18.80	19.14	20.34	17.50	17.84	18.43	18.77	19.98
12H	4H	16.92	17.40	17.84	18.32	19.46	16.58	17.06	17.49	17.98	19.12
	6H	17.57	17.96	18.50	18.89	20.05	17.23	17.62	18.16	18.55	19.71
	8H	17.80	18.14	18.73	19.07	20.27	17.45	17.80	18.39	18.73	19.93