

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: P921579

Luminaire Tested: DFN2DIP-HX2F0-050D030US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921579
REPORT IS A COMBINATION OF REPORTS P900687 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-050D030US940-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

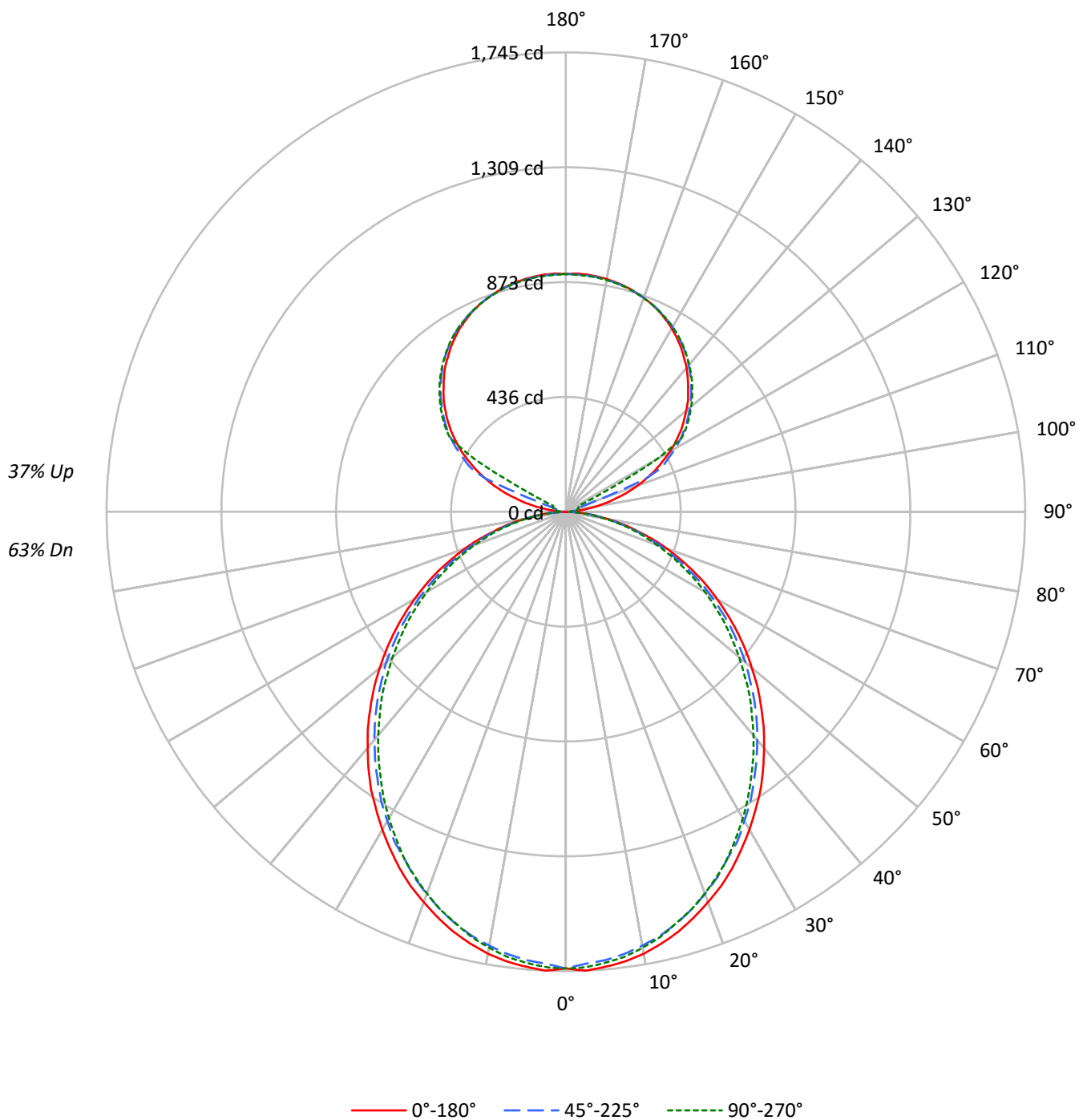
Lumens per Lamp: N/A
Luminaire Lumens: 7062.4 lumens
Efficiency: N/A
Efficacy: 101.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

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

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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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	65	60	58	57
2	92	84	78	72	86	79	73	69	69	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	57	61	56	52	54	50	46	47	44	41
4	77	65	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	34	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	47	39	34	56	45	38	32	40	34	30	35	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	37	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	34	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4087	4087	4087
5°	4087	4021	4050
10°	4048	3957	3988
15°	3982	3882	3895
20°	3895	3782	3800
25°	3808	3664	3691
30°	3701	3554	3555
35°	3599	3425	3411
40°	3475	3295	3274
45°	3351	3164	3133
50°	3215	3026	2971
55°	3071	2867	2820
60°	2909	2680	2647
65°	2731	2483	2443
70°	2505	2245	2222
75°	2194	1959	2008
80°	1816	1595	1621
85°	1233	1001	1003

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3351 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.3	2.3
10°-20°	459.4	6.5
20°-30°	675.2	9.6
30°-40°	784.2	11.1
40°-50°	783.2	11.1
50°-60°	682.9	9.7
60°-70°	504.8	7.1
70°-80°	285.6	4.0
80°-90°	77.0	1.1
90°-100°	29.8	0.4
100°-110°	111.0	1.6
110°-120°	294.3	4.2
120°-130°	488.2	6.9
130°-140°	518.5	7.3
140°-150°	481.9	6.8
150°-160°	387.5	5.5
160°-170°	249.7	3.5
170°-180°	85.9	1.2
0°-30°	1297.9	18.4
0°-40°	2082.0	29.5
0°-60°	3548.1	50.2
0°-90°	4415.6	62.5
90°-120°	435.1	6.2
90°-150°	1923.7	27.2
90°-180°	2647.0	37.5
0°-180°	7062.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1735	1735	1735	1735	1735	
5°	1735	1728	1710	1723	1720	165
15°	1651	1642	1620	1627	1618	465
25°	1495	1481	1453	1456	1453	688
35°	1290	1273	1246	1236	1228	805
45°	1049	1038	1012	994	988	810
55°	794	784	764	744	736	710
65°	536	526	509	494	485	530
75°	280	277	268	259	262	299
85°	68	67	65	60	58	76
90°	1	8	13	16	18	7
95°	42	21	25	29	28	50
105°	199	218	40	47	50	212
115°	376	387	403	101	54	370
125°	531	540	552	557	559	474
135°	657	668	674	680	679	508
145°	762	762	773	777	774	477
155°	840	834	841	845	840	387
165°	884	881	883	887	883	250
175°	905	900	902	906	900	86
180°	903	903	903	903	903	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1734.8	1734.8	1734.8	1734.8	1734.8
2.5°	1744.9	1736.6	1718.2	1734.8	1731.7
5°	1734.8	1728.3	1709.9	1723.1	1720.0
7.5°	1723.1	1713.2	1694.9	1708.3	1705.0
10°	1705.0	1693.3	1673.3	1686.5	1681.6
12.5°	1679.8	1669.9	1649.9	1658.2	1654.8
15°	1651.4	1641.5	1619.8	1626.6	1618.2
17.5°	1616.4	1606.5	1584.7	1593.0	1584.7
20°	1578.1	1568.2	1544.8	1549.7	1543.2
22.5°	1539.8	1524.7	1503.0	1503.0	1499.6
25°	1494.7	1481.4	1453.0	1456.3	1453.0
27.5°	1444.6	1432.9	1411.3	1406.3	1398.0
30°	1394.6	1381.3	1356.3	1351.3	1344.6
32.5°	1341.2	1331.3	1304.6	1294.5	1287.8
35°	1289.5	1272.9	1246.2	1236.1	1227.8
37.5°	1231.1	1216.1	1189.4	1177.7	1169.4
40°	1171.2	1157.7	1131.0	1116.1	1109.4
42.5°	1112.8	1099.3	1072.7	1055.9	1046.0
45°	1049.4	1037.7	1012.5	994.3	987.6
47.5°	987.6	975.9	949.2	930.8	920.9
50°	922.5	914.2	890.8	867.5	859.1
52.5°	859.1	847.4	825.8	807.4	795.8
55°	794.2	784.1	764.0	744.0	735.8
57.5°	729.0	720.7	698.9	678.9	672.2
60°	663.9	657.4	634.0	615.5	610.6
62.5°	600.6	588.9	572.2	555.5	548.8
65°	535.6	525.5	508.8	493.8	485.4
67.5°	468.9	460.4	445.5	433.8	427.0
70°	407.1	400.4	385.3	373.6	367.1
72.5°	343.8	337.0	328.7	317.0	312.0
75°	280.2	277.0	268.5	258.6	262.0
77.5°	223.6	216.8	213.5	208.5	203.6
80°	166.9	165.1	161.8	156.9	153.5
82.5°	113.4	113.4	111.8	105.1	105.1
85°	68.3	66.7	65.1	60.0	58.4
87.5°	30.1	26.8	23.4	18.4	16.7
90°	0.6	7.8	13.0	16.4	17.6
92.5°	16.4	13.7	15.7	17.0	17.6
95°	42.4	20.9	25.4	28.8	28.1
97.5°	76.4	22.9	33.3	35.3	35.9
100°	115.7	26.1	37.3	42.4	43.8
102.5°	158.7	157.5	38.5	45.7	47.7
105°	198.6	218.2	39.9	47.0	49.7
107.5°	245.0	261.3	41.2	48.3	51.0
110°	289.4	303.1	114.3	49.0	51.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	331.3	343.0	331.9	50.3	52.3
115°	375.6	386.7	403.1	100.6	53.6
117.5°	414.2	427.2	438.4	344.9	173.8
120°	457.3	467.1	478.8	486.7	398.5
122.5°	493.8	504.4	517.5	521.3	522.0
125°	531.1	539.6	552.1	556.6	558.6
127.5°	565.1	574.2	584.1	590.6	591.2
130°	597.1	607.6	614.7	621.9	621.3
132.5°	629.7	638.3	645.4	651.3	650.7
135°	657.2	667.7	673.5	680.1	678.8
137.5°	685.9	693.8	700.3	706.9	704.9
140°	714.0	719.3	726.4	732.3	729.1
142.5°	737.6	742.2	750.6	755.8	752.6
145°	762.4	761.7	772.8	777.4	774.1
147.5°	783.9	781.9	793.1	796.3	793.7
150°	804.9	800.3	810.7	814.6	811.4
152.5°	822.4	817.3	827.1	831.0	826.4
155°	839.5	833.7	841.4	845.3	840.2
157.5°	853.2	848.0	853.9	858.4	853.2
160°	865.0	861.0	865.0	868.9	864.2
162.5°	875.4	871.5	874.8	879.3	873.4
165°	884.5	880.7	882.6	887.2	882.6
167.5°	891.7	887.8	889.7	894.4	888.5
170°	897.6	893.7	895.0	899.6	893.7
172.5°	901.5	897.6	898.9	903.5	897.6
175°	904.7	900.2	901.5	906.1	899.6
177.5°	906.1	901.5	902.2	906.8	900.9
180°	902.9	902.9	902.9	902.9	902.9

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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	13.11	14.09	13.95	14.96	16.04	12.69	13.67	13.53	14.54	15.62
	3H	14.75	15.64	15.61	16.51	17.62	14.29	15.18	15.15	16.05	17.16
	4H	15.33	16.17	16.20	17.05	18.16	14.87	15.71	15.74	16.59	17.70
	6H	15.72	16.49	16.60	17.38	18.51	15.26	16.03	16.14	16.92	18.05
	8H	15.82	16.55	16.71	17.46	18.59	15.36	16.09	16.25	17.00	18.13
	12H	15.86	16.56	16.76	17.46	18.61	15.40	16.10	16.29	17.00	18.15
4H	2H	13.57	14.41	14.45	15.29	16.41	13.24	14.07	14.11	14.95	16.07
	3H	15.42	16.12	16.31	17.03	18.17	15.04	15.74	15.93	16.65	17.78
	4H	16.12	16.76	17.02	17.67	18.83	15.73	16.37	16.63	17.27	18.43
	6H	16.62	17.17	17.53	18.10	19.26	16.23	16.78	17.14	17.71	18.87
	8H	16.76	17.28	17.68	18.20	19.38	16.37	16.88	17.28	17.81	18.98
	12H	16.83	17.29	17.76	18.24	19.42	16.42	16.89	17.36	17.83	19.01
8H	4H	16.32	16.83	17.23	17.76	18.93	15.97	16.48	16.88	17.41	18.58
	6H	16.93	17.35	17.87	18.32	19.49	16.57	17.00	17.52	17.97	19.14
	8H	17.13	17.51	18.08	18.47	19.66	16.78	17.15	17.73	18.11	19.30
	12H	17.25	17.58	18.21	18.54	19.78	16.88	17.22	17.84	18.17	19.41
12H	4H	16.31	16.77	17.24	17.72	18.90	15.96	16.43	16.90	17.37	18.55
	6H	16.95	17.33	17.90	18.29	19.48	16.61	16.99	17.56	17.95	19.14
	8H	17.18	17.51	18.14	18.46	19.71	16.84	17.17	17.79	18.12	19.36