

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: P921575

Luminaire Tested: DFN2DIP-HX2F0-050D020US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921575
REPORT IS A COMBINATION OF REPORTS P900677 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-050D020US940-FLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

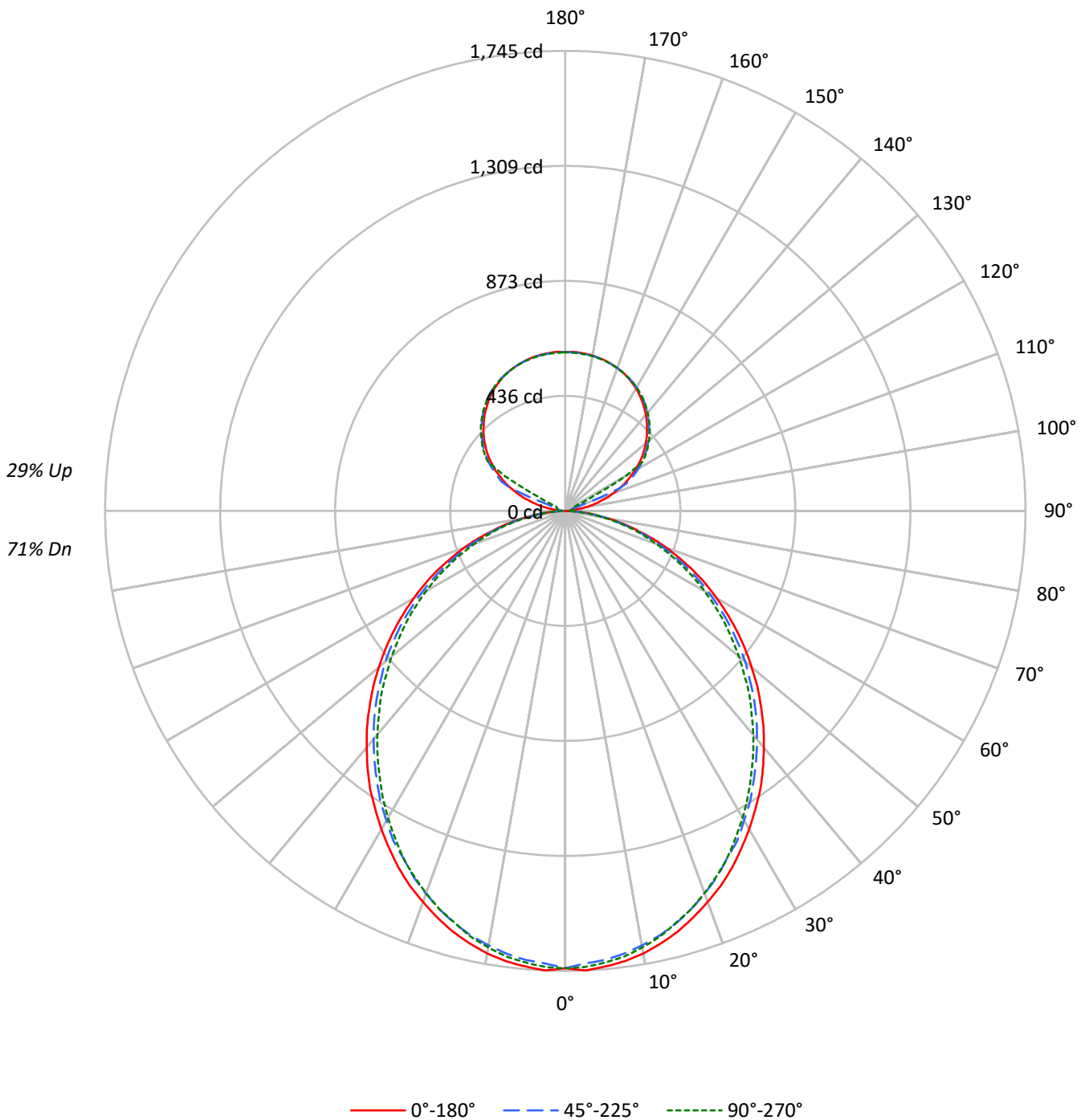
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6179.6 lumens
Efficiency: N/A
Efficacy: 98.4 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): 62.8
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			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	112	112	112	112	106	106	106	106	95	95	95	85	85	85	76	76	76	76	76	76	71
1	103	98	94	90	97	93	90	86	84	81	78	75	73	71	67	66	64	64	64	64	60
2	93	86	79	74	88	81	76	71	73	69	65	66	62	59	59	56	54	54	54	54	50
3	85	75	68	62	80	72	65	59	65	59	55	58	54	50	52	49	46	46	46	46	43
4	78	67	59	52	74	64	56	50	58	52	47	52	47	43	47	43	40	40	40	40	37
5	72	60	51	45	68	57	49	44	52	45	40	47	42	38	42	38	35	35	35	35	32
6	66	54	45	39	63	51	44	38	47	40	35	42	37	33	38	34	31	31	31	31	28
7	61	49	40	35	58	47	39	34	42	36	31	39	33	29	35	31	27	27	27	27	25
8	57	44	36	31	54	42	35	30	39	33	28	35	30	26	32	28	24	24	24	24	22
9	53	41	33	28	50	39	32	27	36	30	25	33	27	24	30	25	22	22	22	22	20
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	28	23	20	20	20	20	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	2.6
10°-20°	459.4	7.4
20°-30°	675.2	10.9
30°-40°	784.2	12.7
40°-50°	783.2	12.7
50°-60°	682.9	11.1
60°-70°	504.8	8.2
70°-80°	285.6	4.6
80°-90°	76.4	1.2
90°-100°	19.8	0.3
100°-110°	74.0	1.2
110°-120°	196.2	3.2
120°-130°	325.4	5.3
130°-140°	345.7	5.6
140°-150°	321.3	5.2
150°-160°	258.3	4.2
160°-170°	166.4	2.7
170°-180°	57.3	0.9
0°-30°	1297.9	21.0
0°-40°	2082.0	33.7
0°-60°	3548.1	57.4
0°-90°	4415.1	71.4
90°-120°	290.0	4.7
90°-150°	1282.5	20.8
90°-180°	1765.0	28.6
0°-180°	6179.6	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°	0	5	9	11	12	6
95°	28	14	17	19	19	33
105°	132	145	27	31	33	141
115°	250	258	269	67	36	247
125°	354	360	368	371	372	316
135°	438	445	449	453	452	338
145°	508	508	515	518	516	318
155°	560	556	561	564	560	258
165°	590	587	588	592	588	167
175°	603	600	601	604	600	57
180°	602	602	602	602	602	



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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°	0.4	5.3	8.6	10.9	11.8
92.5°	10.9	9.2	10.4	11.3	11.8
95°	28.3	13.9	16.9	19.2	18.7
97.5°	50.9	15.2	22.2	23.5	24.0
100°	77.1	17.4	24.8	28.3	29.2
102.5°	105.8	105.0	25.7	30.5	31.8
105°	132.4	145.4	26.6	31.3	33.1
107.5°	163.4	174.2	27.5	32.2	34.0
110°	193.0	202.1	76.2	32.7	34.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	220.8	228.6	221.2	33.5	34.9
115°	250.4	257.8	268.8	67.1	35.8
117.5°	276.1	284.8	292.2	230.0	115.8
120°	304.9	311.4	319.2	324.5	265.6
122.5°	329.2	336.2	344.9	347.5	348.0
125°	354.1	359.7	368.0	371.0	372.4
127.5°	376.7	382.8	389.4	393.7	394.1
130°	398.1	405.0	409.8	414.6	414.2
132.5°	419.8	425.5	430.3	434.2	433.8
135°	438.2	445.1	449.0	453.4	452.5
137.5°	457.3	462.5	466.9	471.3	469.9
140°	476.0	479.6	484.3	488.2	486.1
142.5°	491.7	494.8	500.4	503.9	501.7
145°	508.3	507.8	515.2	518.3	516.1
147.5°	522.6	521.3	528.7	530.8	529.1
150°	536.5	533.5	540.5	543.1	540.9
152.5°	548.3	544.8	551.3	554.0	550.9
155°	559.6	555.7	561.0	563.6	560.1
157.5°	568.8	565.3	569.3	572.3	568.8
160°	576.7	574.0	576.7	579.3	576.2
162.5°	583.5	580.9	583.2	586.2	582.3
165°	589.7	587.1	588.4	591.5	588.4
167.5°	594.5	591.8	593.2	596.3	592.3
170°	598.4	595.8	596.6	599.7	595.8
172.5°	601.0	598.4	599.3	602.4	598.4
175°	603.2	600.1	601.0	604.0	599.7
177.5°	604.0	601.0	601.5	604.5	600.6
180°	601.9	601.9	601.9	601.9	601.9



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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	13.81	14.90	14.55	15.67	16.60	13.38	14.48	14.13	15.25	16.17
	3H	15.46	16.44	16.22	17.22	18.18	15.00	15.98	15.76	16.76	17.72
	4H	16.04	16.97	16.82	17.76	18.73	15.58	16.51	16.36	17.30	18.27
	6H	16.43	17.29	17.22	18.09	19.07	15.97	16.83	16.77	17.63	18.61
	8H	16.53	17.35	17.34	18.17	19.15	16.08	16.89	16.88	17.71	18.69
	12H	16.58	17.36	17.39	18.17	19.18	16.12	16.90	16.93	17.71	18.72
4H	2H	14.29	15.21	15.07	16.00	16.97	13.95	14.87	14.73	15.66	16.63
	3H	16.14	16.92	16.94	17.74	18.73	15.76	16.53	16.55	17.36	18.34
	4H	16.85	17.55	17.66	18.37	19.39	16.45	17.16	17.26	17.98	19.00
	6H	17.35	17.96	18.18	18.81	19.83	16.96	17.57	17.78	18.41	19.43
	8H	17.49	18.07	18.33	18.91	19.94	17.10	17.67	17.93	18.51	19.54
	12H	17.57	18.08	18.42	18.94	19.98	17.16	17.68	18.01	18.54	19.58
8H	4H	17.05	17.62	17.88	18.46	19.50	16.70	17.27	17.53	18.11	19.15
	6H	17.66	18.14	18.52	19.02	20.05	17.31	17.78	18.17	18.67	19.70
	8H	17.87	18.29	18.74	19.17	20.22	17.51	17.93	18.38	18.81	19.86
	12H	17.99	18.37	18.87	19.24	20.34	17.63	18.00	18.50	18.87	19.97
12H	4H	17.05	17.56	17.90	18.42	19.46	16.70	17.22	17.55	18.08	19.12
	6H	17.69	18.11	18.56	18.99	20.04	17.35	17.77	18.22	18.65	19.70
	8H	17.92	18.29	18.80	19.17	20.27	17.58	17.95	18.45	18.82	19.93