

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: P918899

Luminaire Tested: DFN2DIP-HX3F0-030D060US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918899
REPORT IS A COMBINATION OF REPORTS P900763 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-030D060US935-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

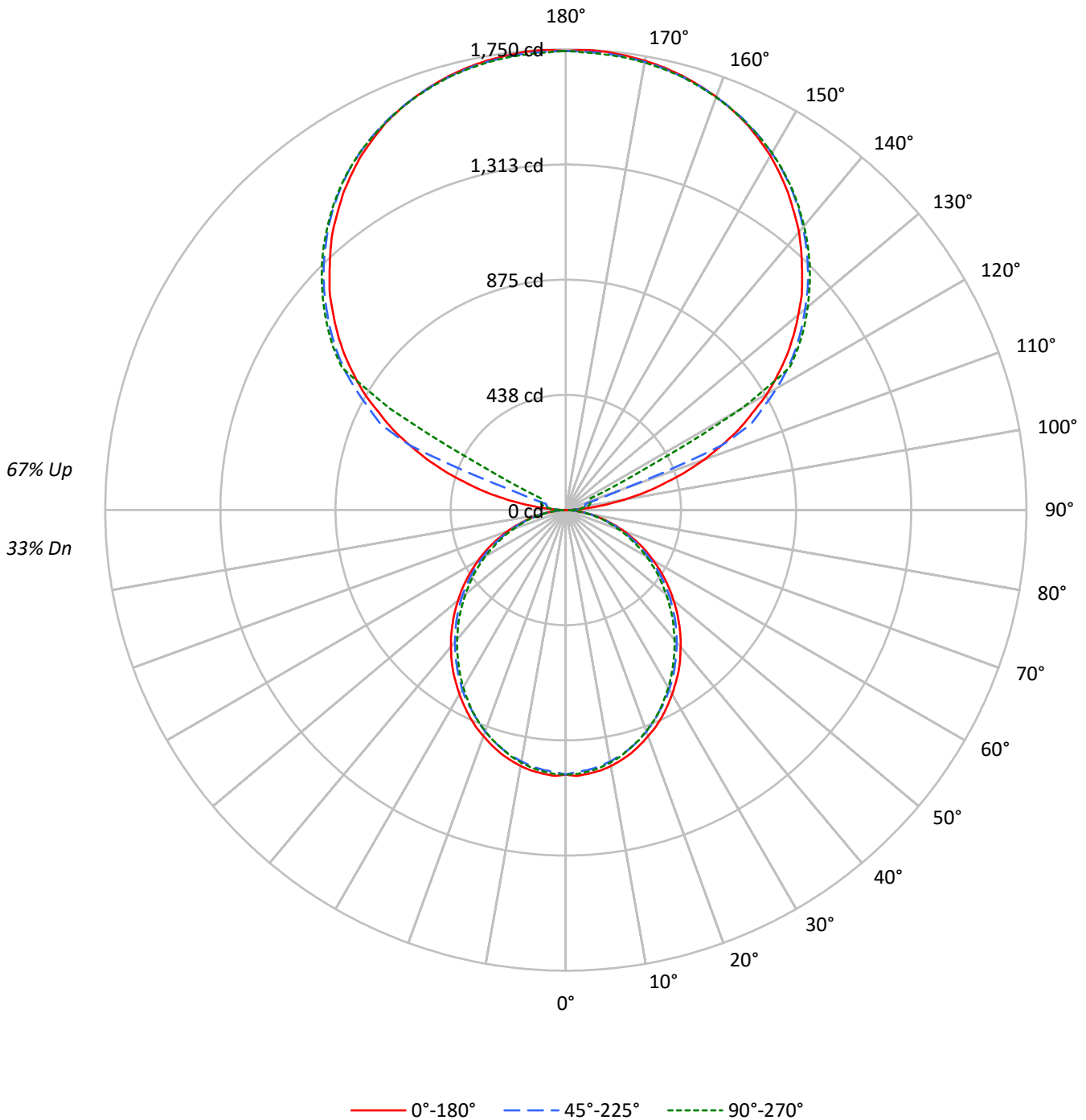
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7671.5 lumens
Efficiency: N/A
Efficacy: 111.2 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-Indirect

Input Watts (W): 69
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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				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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41	33				33
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34	28				28
2	86	78	72	67	77	71	66	62	57	53	50	44	41	39	32	30	29	24				24
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25	20				20
4	71	61	53	47	64	55	49	43	44	40	36	34	31	28	25	23	21	17				17
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	18	15				15
6	60	48	41	35	54	44	37	32	36	31	27	28	24	21	20	18	16	13				13
7	56	44	36	30	50	40	33	28	32	27	23	25	22	19	19	16	14	12				12
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13	10				10
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	13	12	9				9
10	45	33	26	21	40	30	24	20	25	20	17	19	16	14	15	12	11	9				9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1164	1164	1164
5°	1165	1147	1155
10°	1156	1131	1139
15°	1138	1111	1114
20°	1115	1085	1088
25°	1091	1053	1059
30°	1062	1023	1021
35°	1034	989	982
40°	1000	954	944
45°	966	918	905
50°	929	881	861
55°	890	838	820
60°	846	787	772
65°	798	735	717
70°	737	671	657
75°	652	593	600
80°	550	495	494
85°	390	327	320

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1117 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.6	1.2
10°-20°	266.2	3.5
20°-30°	391.1	5.1
30°-40°	454.3	5.9
40°-50°	453.7	5.9
50°-60°	395.6	5.2
60°-70°	292.5	3.8
70°-80°	165.5	2.2
80°-90°	46.7	0.6
90°-100°	57.5	0.7
100°-110°	214.3	2.8
110°-120°	568.4	7.4
120°-130°	942.7	12.3
130°-140°	1001.4	13.1
140°-150°	930.7	12.1
150°-160°	748.2	9.8
160°-170°	482.1	6.3
170°-180°	165.9	2.2
0°-30°	751.9	9.8
0°-40°	1206.2	15.7
0°-60°	2055.6	26.8
0°-90°	2560.2	33.4
90°-120°	840.2	11.0
90°-150°	3714.9	48.4
90°-180°	5111.0	66.6
0°-180°	7671.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1005	1005	1005	1005	1005	
5°	1005	1001	991	998	996	95
15°	957	951	938	942	938	269
25°	866	858	842	844	842	398
35°	747	737	722	716	711	467
45°	608	601	587	576	572	469
55°	460	454	443	431	426	411
65°	310	304	295	286	281	307
75°	162	160	156	150	152	173
85°	40	39	38	35	34	44
90°	1	15	25	32	34	7
95°	82	40	49	56	54	97
105°	384	421	77	91	96	410
115°	725	747	778	194	104	714
125°	1026	1042	1066	1075	1079	915
135°	1269	1289	1301	1313	1311	980
145°	1472	1471	1492	1501	1495	921
155°	1621	1610	1625	1632	1622	747
165°	1708	1701	1704	1713	1704	483
175°	1747	1738	1741	1750	1737	166
180°	1743	1743	1743	1743	1743	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1005.0	1005.0	1005.0	1005.0	1005.0
2.5°	1010.9	1006.1	995.4	1005.0	1003.2
5°	1005.0	1001.3	990.6	998.3	996.4
7.5°	998.3	992.6	981.9	989.7	987.7
10°	987.7	980.9	969.4	977.1	974.2
12.5°	973.2	967.4	955.9	960.6	958.7
15°	956.7	951.1	938.4	942.3	937.5
17.5°	936.4	930.7	918.1	922.9	918.1
20°	914.2	908.4	894.9	897.8	894.0
22.5°	892.1	883.4	870.7	870.7	868.7
25°	865.9	858.2	841.8	843.7	841.8
27.5°	836.9	830.1	817.6	814.8	809.9
30°	808.0	800.2	785.7	782.8	778.9
32.5°	777.1	771.3	755.8	749.9	746.1
35°	747.1	737.4	721.9	716.1	711.3
37.5°	713.3	704.6	689.1	682.3	677.4
40°	678.5	670.7	655.2	646.6	642.7
42.5°	644.6	636.9	621.5	611.7	606.0
45°	608.0	601.1	586.6	576.0	572.1
47.5°	572.1	565.4	549.9	539.2	533.5
50°	534.4	529.6	516.1	502.6	497.7
52.5°	497.7	490.9	478.5	467.8	461.0
55°	460.1	454.3	442.6	431.1	426.3
57.5°	422.3	417.5	404.9	393.3	389.4
60°	384.6	380.8	367.3	356.6	353.8
62.5°	347.9	341.1	331.5	321.8	318.0
65°	310.3	304.4	294.8	286.1	281.3
67.5°	271.6	266.7	258.0	251.3	247.5
70°	235.8	232.0	223.3	216.5	212.7
72.5°	199.1	195.2	190.4	183.7	180.8
75°	162.3	160.5	155.6	149.8	151.8
77.5°	129.5	125.6	123.6	120.8	118.0
80°	96.7	95.7	93.7	90.8	88.9
82.5°	65.7	65.7	64.8	60.9	60.9
85°	39.6	38.7	37.7	34.8	33.8
87.5°	17.4	15.5	13.5	10.7	9.6
90°	1.2	15.2	25.1	31.6	34.0
92.5°	31.6	26.5	30.2	32.8	34.0
95°	82.0	40.3	49.2	55.6	54.2
97.5°	147.6	44.2	64.2	68.2	69.4
100°	223.3	50.5	71.9	82.0	84.5
102.5°	306.5	304.1	74.5	88.3	92.1
105°	383.5	421.4	77.0	90.7	95.9
107.5°	473.1	504.5	79.6	93.3	98.4
110°	559.0	585.3	220.8	94.7	99.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	639.6	662.3	640.8	97.0	101.0
115°	725.4	746.8	778.4	194.3	103.5
117.5°	799.8	825.0	846.5	666.1	335.5
120°	883.1	902.0	924.8	939.9	769.6
122.5°	953.6	973.9	999.2	1006.7	1008.1
125°	1025.6	1042.1	1066.0	1074.9	1078.6
127.5°	1091.2	1108.9	1127.9	1140.5	1141.7
130°	1153.0	1173.3	1187.1	1201.0	1199.8
132.5°	1216.2	1232.6	1246.4	1257.7	1256.5
135°	1269.2	1289.4	1300.6	1313.4	1310.8
137.5°	1324.6	1339.7	1352.5	1365.0	1361.3
140°	1378.8	1389.0	1402.8	1414.2	1407.9
142.5°	1424.3	1433.2	1449.6	1459.6	1453.3
145°	1472.3	1470.9	1492.4	1501.2	1495.0
147.5°	1513.8	1510.0	1531.5	1537.7	1532.8
150°	1554.3	1545.4	1565.6	1573.1	1566.8
152.5°	1588.3	1578.2	1597.1	1604.7	1595.9
155°	1621.1	1609.8	1625.0	1632.5	1622.4
157.5°	1647.6	1637.5	1648.9	1657.8	1647.6
160°	1670.3	1662.7	1670.3	1677.8	1669.0
162.5°	1690.4	1682.9	1689.2	1698.1	1686.7
165°	1708.1	1700.6	1704.3	1713.2	1704.3
167.5°	1722.0	1714.4	1718.3	1727.2	1715.7
170°	1733.4	1725.8	1728.4	1737.1	1725.8
172.5°	1740.9	1733.4	1735.9	1744.8	1733.4
175°	1747.2	1738.4	1740.9	1749.7	1737.1
177.5°	1749.7	1740.9	1742.2	1751.1	1739.7
180°	1743.4	1743.4	1743.4	1743.4	1743.4



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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	5.98	6.71	7.07	7.80	9.29	5.55	6.28	6.64	7.37	8.86
	3H	7.63	8.28	8.72	9.37	10.88	7.16	7.81	8.25	8.91	10.41
	4H	8.20	8.82	9.31	9.92	11.43	7.73	8.35	8.84	9.45	10.96
	6H	8.59	9.16	9.71	10.26	11.79	8.12	8.69	9.24	9.79	11.32
	8H	8.69	9.23	9.81	10.35	11.86	8.22	8.76	9.34	9.88	11.40
	12H	8.73	9.24	9.85	10.35	11.89	8.25	8.77	9.38	9.88	11.42
4H	2H	6.43	7.05	7.54	8.14	9.66	6.08	6.70	7.20	7.80	9.31
	3H	8.27	8.79	9.39	9.91	11.44	7.88	8.40	9.00	9.52	11.05
	4H	8.97	9.45	10.10	10.56	12.11	8.57	9.05	9.70	10.16	11.71
	6H	9.47	9.88	10.61	11.02	12.56	9.07	9.48	10.20	10.61	12.15
	8H	9.62	10.00	10.75	11.12	12.68	9.21	9.59	10.34	10.72	12.27
	12H	9.68	10.02	10.83	11.16	12.72	9.26	9.61	10.41	10.75	12.31
8H	4H	9.16	9.54	10.29	10.66	12.22	8.80	9.18	9.93	10.31	11.86
	6H	9.77	10.09	10.93	11.26	12.81	9.41	9.73	10.57	10.90	12.45
	8H	9.99	10.26	11.15	11.41	12.98	9.62	9.90	10.78	11.05	12.62
	12H	10.11	10.35	11.27	11.50	13.10	9.73	9.97	10.89	11.12	12.72
12H	4H	9.14	9.48	10.28	10.62	12.18	8.79	9.13	9.93	10.27	11.83
	6H	9.80	10.08	10.96	11.22	12.80	9.45	9.73	10.61	10.88	12.45
	8H	10.03	10.27	11.19	11.42	13.02	9.68	9.92	10.84	11.06	12.67