

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: P918805

Luminaire Tested: DFN2DIP-HX2F0-020D060US935-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918805
REPORT IS A COMBINATION OF REPORTS P900712 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D060US935-RLLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

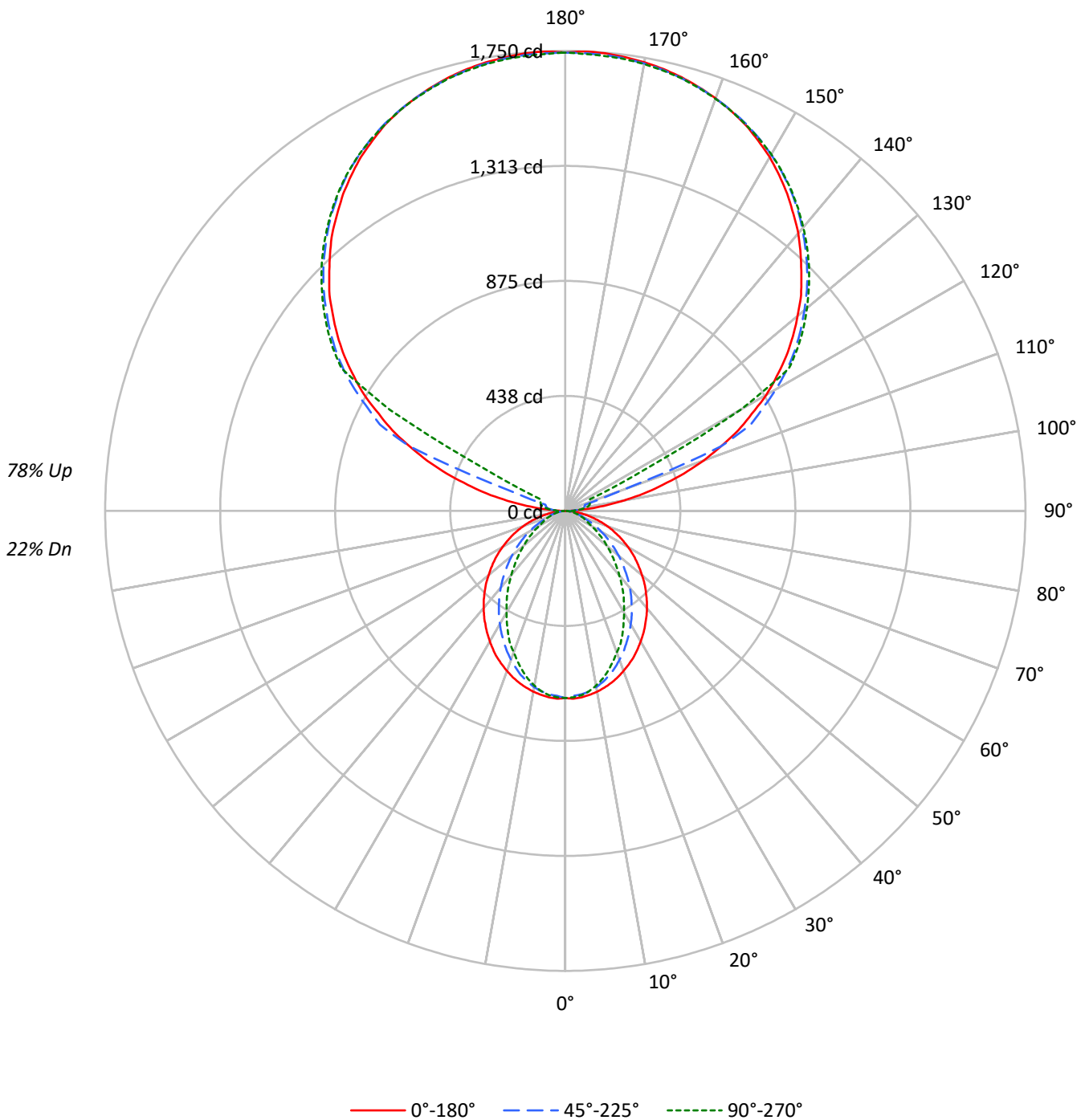
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6578.0 lumens
Efficiency: N/A
Efficacy: 103.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 63.6
Input Voltage (V):
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	101	101	101	101	89	89	89	89	68	68	68	49	49	49	31	31	31	31	31	31	22
1	92	88	84	81	81	78	75	72	60	58	56	43	42	41	27	27	26	26	26	26	19
2	84	77	71	66	74	68	64	60	52	49	47	38	36	34	24	23	22	22	22	22	16
3	76	68	61	55	68	60	55	50	46	43	39	34	31	29	22	20	19	19	19	19	14
4	70	60	52	47	62	53	47	42	41	37	34	30	27	25	20	18	17	17	17	17	12
5	64	53	46	40	57	48	41	36	37	32	29	27	24	22	18	16	15	15	15	15	11
6	59	48	40	35	52	43	36	31	33	29	25	24	21	19	16	14	13	13	13	13	10
7	54	43	35	30	48	38	32	27	30	25	22	22	19	17	15	13	12	12	12	12	9
8	50	39	32	27	45	35	29	24	27	23	20	20	17	15	14	12	10	10	10	10	8
9	47	35	28	23	42	32	26	21	25	20	17	19	16	13	12	11	9	9	9	9	7
10	44	32	25	21	39	29	23	19	23	19	16	17	14	12	12	10	9	9	9	9	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1677	1677	1677
5°	1677	1646	1658
10°	1658	1610	1601
15°	1632	1553	1515
20°	1599	1476	1410
25°	1566	1390	1309
30°	1521	1303	1182
35°	1478	1209	1070
40°	1433	1113	943
45°	1382	1006	827
50°	1329	900	715
55°	1273	785	607
60°	1208	667	497
65°	1133	547	444
70°	1042	435	398
75°	928	376	356
80°	764	305	299
85°	498	188	209

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1593 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.7	1.0
10°-20°	183.1	2.8
20°-30°	257.1	3.9
30°-40°	280.2	4.3
40°-50°	257.6	3.9
50°-60°	202.3	3.1
60°-70°	131.7	2.0
70°-80°	67.8	1.0
80°-90°	20.4	0.3
90°-100°	57.5	0.9
100°-110°	214.3	3.3
110°-120°	568.4	8.6
120°-130°	942.7	14.3
130°-140°	1001.4	15.2
140°-150°	930.7	14.1
150°-160°	748.2	11.4
160°-170°	482.1	7.3
170°-180°	165.9	2.5
0°-30°	506.9	7.7
0°-40°	787.1	12.0
0°-60°	1247.0	19.0
0°-90°	1466.8	22.3
90°-120°	840.2	12.8
90°-150°	3714.9	56.5
90°-180°	5111.0	77.7
0°-180°	6578.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	712	712	712	712	712	
5°	712	708	700	706	704	67
15°	677	670	648	636	629	191
25°	614	594	551	525	515	283
35°	529	497	440	399	385	331
45°	433	390	322	276	261	334
55°	329	279	209	171	158	294
65°	222	170	112	90	88	220
75°	118	73	52	47	46	125
85°	28	14	12	12	12	32
90°	1	15	25	32	34	6
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°	711.7	711.7	711.7	711.7	711.7
2.5°	714.9	711.7	704.6	711.1	709.8
5°	711.7	708.5	700.1	705.9	704.0
7.5°	705.9	702.1	693.0	695.6	692.3
10°	698.2	693.6	680.8	678.8	675.0
12.5°	688.5	682.7	665.3	661.5	654.4
15°	676.9	669.8	647.9	635.7	629.3
17.5°	663.4	653.1	626.0	611.8	601.6
20°	647.9	635.0	602.9	586.8	572.6
22.5°	631.2	616.4	579.0	557.2	547.5
25°	614.5	593.8	551.3	525.0	515.2
27.5°	594.5	572.6	525.6	495.2	480.4
30°	573.3	548.7	497.2	464.4	446.9
32.5°	552.6	523.0	470.2	431.5	415.4
35°	529.4	496.6	440.0	399.3	385.1
37.5°	506.9	471.4	411.6	367.1	351.0
40°	483.0	444.4	381.9	336.2	319.4
42.5°	458.6	417.4	352.3	304.6	288.6
45°	432.8	389.6	322.1	276.3	260.8
47.5°	408.4	362.7	293.1	247.3	233.2
50°	381.3	335.6	264.8	220.2	206.8
52.5°	354.8	306.5	237.6	195.2	183.0
55°	329.1	278.9	209.3	170.7	158.4
57.5°	302.7	251.2	184.3	148.2	137.8
60°	275.7	224.1	157.8	125.0	114.7
62.5°	249.3	197.8	135.3	104.4	99.2
65°	222.2	170.0	112.1	90.2	88.3
67.5°	196.5	144.2	90.2	79.2	77.3
70°	169.4	119.2	74.6	68.3	65.7
72.5°	143.6	95.9	62.4	57.3	56.1
75°	118.5	73.4	51.5	47.0	46.4
77.5°	93.4	52.2	40.6	38.0	36.7
80°	70.2	37.4	30.9	28.3	28.3
82.5°	48.9	25.1	21.3	20.0	20.0
85°	27.6	14.1	12.2	12.2	12.2
87.5°	10.3	5.2	5.2	4.5	4.5
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	5.38	6.03	6.55	7.18	8.80	1.36	2.01	2.53	3.16	4.78
	3H	7.02	7.60	8.19	8.75	10.39	2.52	3.10	3.70	4.26	5.89
	4H	7.60	8.15	8.78	9.31	10.95	2.95	3.50	4.13	4.66	6.30
	6H	7.99	8.50	9.18	9.66	11.31	3.25	3.75	4.44	4.91	6.56
	8H	8.10	8.58	9.29	9.76	11.40	3.33	3.81	4.52	4.98	6.62
	12H	8.15	8.60	9.34	9.77	11.43	3.36	3.81	4.55	4.98	6.64
4H	2H	5.37	5.92	6.56	7.08	8.72	1.92	2.47	3.11	3.63	5.27
	3H	7.16	7.61	8.35	8.80	10.45	3.24	3.69	4.43	4.88	6.53
	4H	7.82	8.24	9.02	9.41	11.08	3.76	4.18	4.96	5.35	7.02
	6H	8.30	8.66	9.50	9.86	11.51	4.15	4.51	5.35	5.71	7.36
	8H	8.46	8.80	9.66	9.98	11.65	4.27	4.60	5.47	5.79	7.46
	12H	8.53	8.84	9.75	10.03	11.71	4.31	4.62	5.53	5.81	7.49
8H	4H	7.77	8.11	8.97	9.29	10.97	4.01	4.35	5.21	5.53	7.21
	6H	8.30	8.58	9.52	9.81	11.48	4.50	4.78	5.72	6.00	7.68
	8H	8.50	8.74	9.72	9.95	11.64	4.68	4.92	5.90	6.12	7.81
	12H	8.61	8.83	9.84	10.03	11.75	4.78	4.99	6.00	6.19	7.91
12H	4H	7.71	8.02	8.93	9.21	10.89	4.01	4.31	5.22	5.51	7.18
	6H	8.28	8.52	9.50	9.72	11.41	4.54	4.78	5.76	5.99	7.68
	8H	8.47	8.68	9.70	9.88	11.61	4.73	4.94	5.95	6.14	7.87