

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: P916095

Luminaire Tested: DFN2DIP-HX2F0-030D060US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916095
REPORT IS A COMBINATION OF REPORTS P900713 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-030D060US930-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

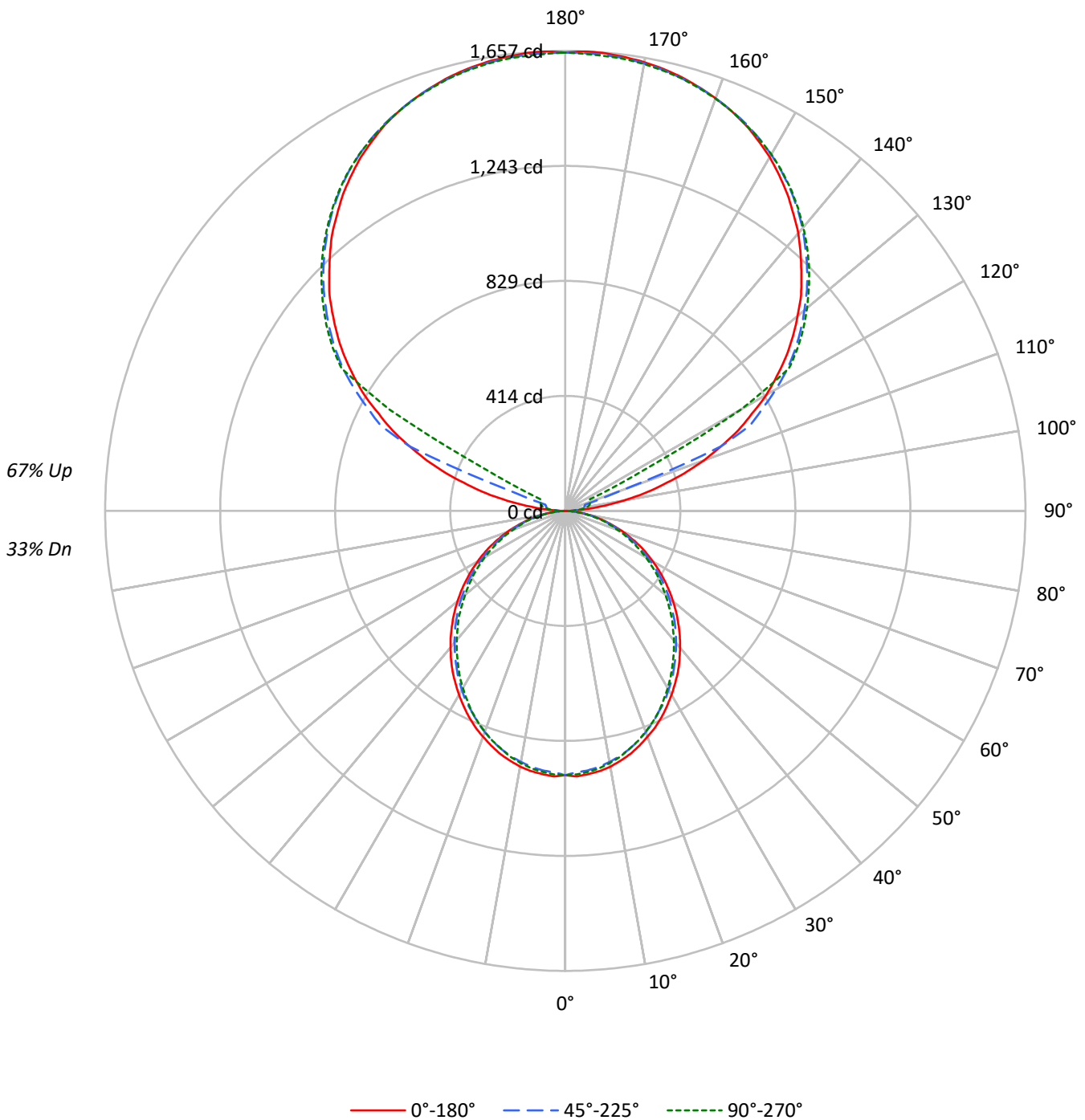
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7264.3 lumens
Efficiency: N/A
Efficacy: 98.7 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-Indirect

Input Watts (W): 73.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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°	2242	2242	2242
5°	2242	2206	2222
10°	2221	2171	2188
15°	2184	2130	2137
20°	2137	2075	2084
25°	2089	2010	2025
30°	2031	1949	1950
35°	1975	1879	1871
40°	1906	1808	1796
45°	1838	1736	1719
50°	1764	1660	1630
55°	1685	1573	1547
60°	1596	1470	1452
65°	1498	1363	1341
70°	1374	1232	1219
75°	1204	1075	1102
80°	997	875	889
85°	677	549	549

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1838 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.6	1.2
10°-20°	252.0	3.5
20°-30°	370.4	5.1
30°-40°	430.2	5.9
40°-50°	429.7	5.9
50°-60°	374.6	5.2
60°-70°	277.0	3.8
70°-80°	156.7	2.2
80°-90°	44.2	0.6
90°-100°	54.4	0.7
100°-110°	202.9	2.8
110°-120°	538.2	7.4
120°-130°	892.7	12.3
130°-140°	948.2	13.1
140°-150°	881.3	12.1
150°-160°	708.5	9.8
160°-170°	456.5	6.3
170°-180°	157.1	2.2
0°-30°	712.0	9.8
0°-40°	1142.2	15.7
0°-60°	1946.5	26.8
0°-90°	2424.4	33.4
90°-120°	795.6	11.0
90°-150°	3517.8	48.4
90°-180°	4840.0	66.6
0°-180°	7264.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	952	952	952	952	952	
5°	952	948	938	945	944	90
15°	906	901	889	892	888	255
25°	820	813	797	799	797	377
35°	707	698	684	678	674	442
45°	576	569	556	545	542	444
55°	436	430	419	408	404	390
65°	294	288	279	271	266	290
75°	154	152	147	142	144	164
85°	38	37	36	33	32	42
90°	1	14	24	30	32	7
95°	78	38	47	53	51	92
105°	363	399	73	86	91	388
115°	687	707	737	184	98	676
125°	971	987	1009	1018	1021	866
135°	1202	1221	1232	1244	1241	928
145°	1394	1393	1413	1422	1416	872
155°	1535	1524	1539	1546	1536	707
165°	1618	1610	1614	1622	1614	457
175°	1654	1646	1648	1657	1645	157
180°	1651	1651	1651	1651	1651	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	951.7	951.7	951.7	951.7	951.7
2.5°	957.2	952.7	942.6	951.7	950.0
5°	951.7	948.1	938.0	945.3	943.5
7.5°	945.3	939.9	929.8	937.2	935.3
10°	935.3	928.9	917.9	925.2	922.5
12.5°	921.5	916.1	905.1	909.6	907.8
15°	906.0	900.6	888.6	892.3	887.7
17.5°	886.7	881.3	869.4	873.9	869.4
20°	865.7	860.2	847.4	850.1	846.5
22.5°	844.7	836.5	824.5	824.5	822.6
25°	819.9	812.7	797.1	798.9	797.1
27.5°	792.5	786.0	774.2	771.5	767.0
30°	765.1	757.7	744.0	741.3	737.6
32.5°	735.8	730.3	715.7	710.1	706.5
35°	707.4	698.3	683.6	678.1	673.5
37.5°	675.4	667.2	652.5	646.0	641.5
40°	642.5	635.1	620.4	612.3	608.6
42.5°	610.4	603.1	588.5	579.3	573.8
45°	575.7	569.2	555.5	545.4	541.8
47.5°	541.8	535.4	520.7	510.6	505.2
50°	506.1	501.5	488.7	475.9	471.3
52.5°	471.3	464.9	453.1	443.0	436.5
55°	435.7	430.2	419.1	408.2	403.7
57.5°	399.9	395.3	383.4	372.4	368.8
60°	364.2	360.6	347.8	337.7	335.0
62.5°	329.5	323.0	313.9	304.8	301.1
65°	293.8	288.3	279.2	270.9	266.4
67.5°	257.2	252.6	244.3	238.0	234.3
70°	223.3	219.6	211.4	205.0	201.4
72.5°	188.6	184.8	180.3	173.9	171.2
75°	153.7	152.0	147.3	141.9	143.7
77.5°	122.6	119.0	117.1	114.4	111.7
80°	91.6	90.6	88.7	86.0	84.2
82.5°	62.2	62.2	61.4	57.6	57.6
85°	37.5	36.6	35.7	32.9	32.0
87.5°	16.5	14.7	12.8	10.1	9.1
90°	1.1	14.3	23.8	29.9	32.2
92.5°	29.9	25.1	28.6	31.1	32.2
95°	77.6	38.2	46.6	52.7	51.4
97.5°	139.7	41.8	60.8	64.6	65.7
100°	211.5	47.8	68.1	77.6	80.0
102.5°	290.2	288.0	70.5	83.6	87.2
105°	363.1	399.0	72.9	85.9	90.8
107.5°	448.0	477.8	75.3	88.4	93.2
110°	529.3	554.2	209.1	89.7	94.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	605.7	627.1	606.8	91.9	95.6
115°	686.9	707.2	737.1	184.0	98.0
117.5°	757.3	781.2	801.6	630.7	317.7
120°	836.3	854.1	875.7	890.0	728.7
122.5°	903.0	922.2	946.2	953.2	954.6
125°	971.2	986.8	1009.4	1017.8	1021.3
127.5°	1033.3	1050.0	1068.0	1079.9	1081.1
130°	1091.8	1111.0	1124.1	1137.3	1136.1
132.5°	1151.6	1167.2	1180.2	1191.0	1189.8
135°	1201.8	1221.0	1231.6	1243.7	1241.2
137.5°	1254.3	1268.6	1280.7	1292.6	1289.1
140°	1305.6	1315.3	1328.4	1339.1	1333.2
142.5°	1348.7	1357.1	1372.6	1382.1	1376.1
145°	1394.2	1392.9	1413.2	1421.6	1415.6
147.5°	1433.5	1429.9	1450.2	1456.1	1451.5
150°	1471.8	1463.4	1482.5	1489.6	1483.7
152.5°	1504.0	1494.4	1512.3	1519.6	1511.2
155°	1535.0	1524.4	1538.7	1545.8	1536.3
157.5°	1560.2	1550.6	1561.4	1569.8	1560.2
160°	1581.7	1574.4	1581.7	1588.8	1580.5
162.5°	1600.7	1593.6	1599.5	1607.9	1597.2
165°	1617.5	1610.4	1613.9	1622.3	1613.9
167.5°	1630.6	1623.4	1627.1	1635.5	1624.6
170°	1641.4	1634.2	1636.6	1644.9	1634.2
172.5°	1648.5	1641.4	1643.8	1652.2	1641.4
175°	1654.5	1646.1	1648.5	1656.8	1644.9
177.5°	1656.8	1648.5	1649.8	1658.2	1647.4
180°	1650.9	1650.9	1650.9	1650.9	1650.9



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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	8.17	8.90	9.26	9.98	11.47	7.74	8.47	8.83	9.56	11.05
	3H	9.79	10.45	10.89	11.54	13.05	9.33	9.99	10.43	11.08	12.59
	4H	10.36	10.98	11.46	12.07	13.59	9.90	10.52	11.01	11.62	13.13
	6H	10.73	11.30	11.85	12.40	13.93	10.27	10.84	11.39	11.94	13.47
	8H	10.82	11.37	11.94	12.48	14.00	10.36	10.91	11.48	12.02	13.54
	12H	10.86	11.37	11.98	12.48	14.02	10.39	10.91	11.52	12.02	13.56
4H	2H	8.60	9.22	9.72	10.32	11.83	8.26	8.88	9.38	9.98	11.49
	3H	10.43	10.95	11.55	12.07	13.59	10.04	10.56	11.17	11.69	13.21
	4H	11.12	11.59	12.24	12.70	14.25	10.72	11.20	11.85	12.31	13.86
	6H	11.60	12.01	12.73	13.14	14.68	11.21	11.61	12.34	12.75	14.29
	8H	11.74	12.12	12.87	13.24	14.80	11.34	11.72	12.47	12.85	14.40
	12H	11.79	12.14	12.94	13.27	14.83	11.39	11.73	12.53	12.87	14.43
8H	4H	11.29	11.67	12.42	12.80	14.35	10.94	11.32	12.07	12.45	14.00
	6H	11.89	12.20	13.04	13.37	14.92	11.54	11.85	12.69	13.02	14.57
	8H	12.09	12.37	13.25	13.51	15.09	11.74	12.01	12.89	13.16	14.73
	12H	12.20	12.44	13.36	13.59	15.19	11.83	12.07	12.99	13.22	14.83
12H	4H	11.27	11.61	12.42	12.75	14.31	10.93	11.27	12.07	12.41	13.97
	6H	11.91	12.19	13.07	13.34	14.91	11.57	11.85	12.73	13.00	14.57
	8H	12.13	12.37	13.29	13.52	15.12	11.78	12.03	12.95	13.17	14.78