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: P924504

Luminaire Tested: DFN2DIP-HX3F0-090D070US950-RLLFLL

Issue Date: 11/21/2024

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Scaled Data Report

Test Information

Test Method:	LM-79-2019
Report Number:	P924504
	REPORT IS A COMBINATION OF REPORTS P899270 AND P896089
Test Lab:	INNOVATION CENTER
Issue Date:	11/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	NEO-RAY
Catalog Number:	DFN2DIP-HX3F0-090D070US950-RLLFLL
Description:	3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	13208.2 lumens
Efficiency:	N/A
Efficacy:	90.4 lumens/watt
Spacing Criteria (0/90/45):	1.2 / 0.99 / 1.16
Luminous Opening:	Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type:	General Diffuse

Input Watts (W):	146.1
Input Voltage (V):	
Input Current (Ain):	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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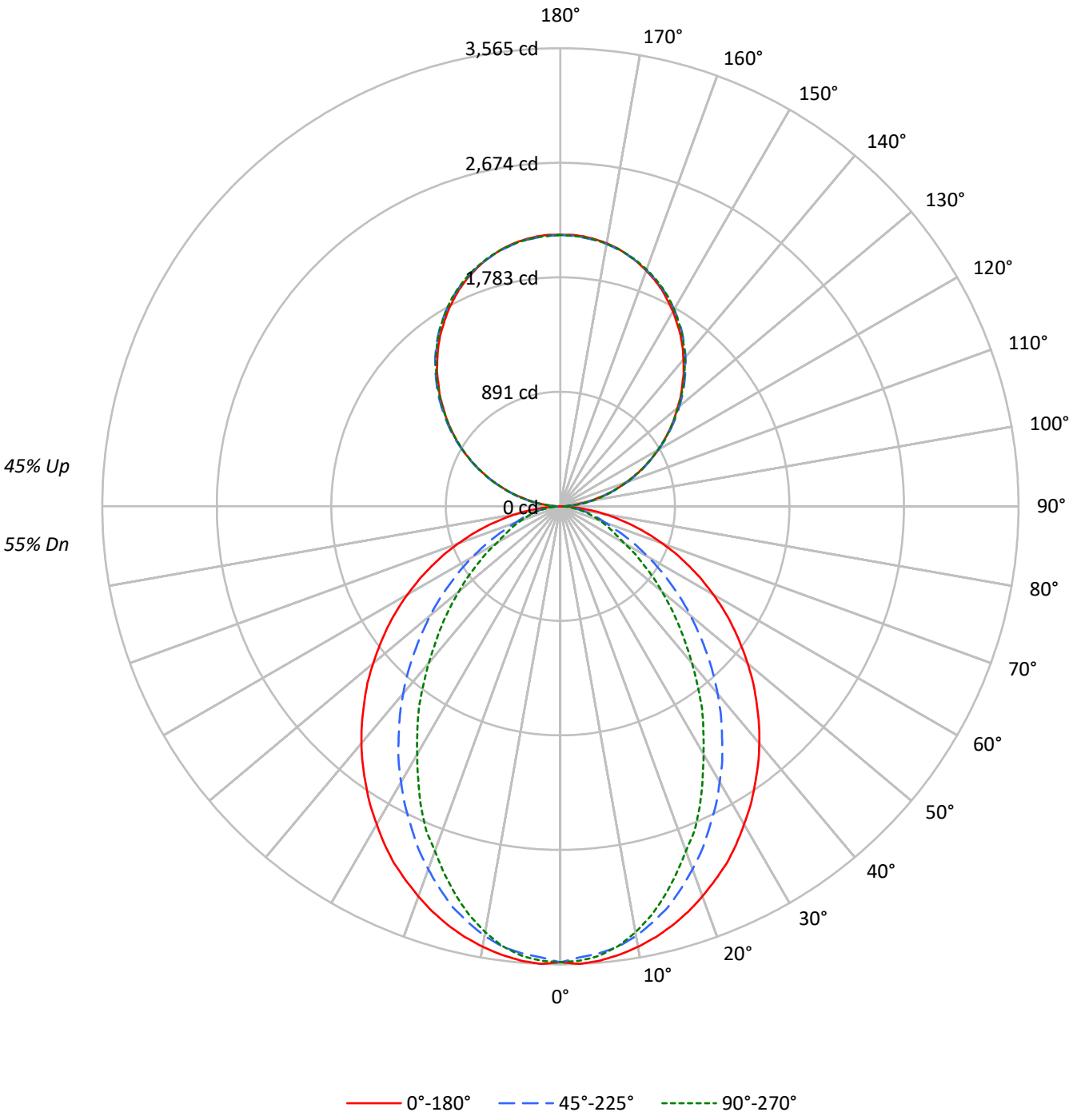
Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20			20			20			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	0
RCR																		
0	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	99	95	92	88	92	89	86	83	76	74	72	65	63	62	55	54	53	48
2	91	84	78	73	84	78	73	69	68	64	60	58	55	53	49	47	45	41
3	83	74	67	61	77	69	63	58	60	55	51	52	48	45	44	41	39	35
4	77	66	58	52	71	62	55	50	54	49	44	46	42	39	39	36	34	31
5	71	59	51	45	65	55	48	43	48	43	39	42	38	34	36	33	30	27
6	65	53	45	40	60	50	43	38	44	38	34	38	34	30	33	29	27	24
7	60	48	41	35	56	45	38	33	40	34	30	35	30	27	30	27	24	21
8	56	44	36	31	52	41	35	30	37	31	27	32	28	24	28	24	22	19
9	52	40	33	28	49	38	31	27	34	28	24	30	25	22	26	22	20	18
10	49	37	30	25	46	35	29	24	31	26	22	27	23	20	24	20	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4111	4111	4111
5°	4115	4042	4069
10°	4073	3960	3934
15°	4015	3827	3728
20°	3939	3644	3475
25°	3861	3439	3230
30°	3757	3229	2921
35°	3655	3004	2650
40°	3551	2771	2339
45°	3431	2514	2058
50°	3306	2254	1783
55°	3175	1976	1519
60°	3024	1687	1248
65°	2850	1393	1121
70°	2639	1118	1011
75°	2374	980	915
80°	1990	813	786
85°	1359	529	578

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3431 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	332.6	2.5
10°-20°	913.0	6.9
20°-30°	1281.8	9.7
30°-40°	1397.3	10.6
40°-50°	1284.2	9.7
50°-60°	1008.6	7.6
60°-70°	656.5	5.0
70°-80°	337.9	2.6
80°-90°	92.3	0.7
90°-100°	130.7	1.0
100°-110°	415.3	3.1
110°-120°	710.6	5.4
120°-130°	934.6	7.1
130°-140°	1049.0	7.9
140°-150°	1028.7	7.8
150°-160°	862.9	6.5
160°-170°	572.3	4.3
170°-180°	200.0	1.5
0°-30°	2527.4	19.1
0°-40°	3924.6	29.7
0°-60°	6217.4	47.1
0°-90°	7304.1	55.3
90°-120°	1256.6	9.5
90°-150°	4268.9	32.3
90°-180°	5904.0	44.7
0°-180°	13208.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3549	3549	3549	3549	3549	
5°	3549	3533	3491	3520	3510	336
15°	3375	3340	3231	3170	3138	951
25°	3064	2961	2749	2617	2569	1409
35°	2640	2476	2194	1991	1920	1652
45°	2158	1943	1606	1378	1300	1667
55°	1641	1390	1044	851	790	1466
65°	1108	848	559	450	440	1099
75°	591	366	257	234	231	625
85°	138	70	61	61	61	158
90°	2	23	62	59	60	13
95°	93	111	114	114	111	103
105°	383	388	392	395	395	405
115°	713	723	720	718	713	705
125°	1037	1053	1048	1042	1040	927
135°	1342	1361	1365	1363	1358	1037
145°	1629	1642	1652	1654	1647	1018
155°	1862	1868	1873	1882	1876	857
165°	2026	2024	2024	2037	2028	572
175°	2108	2103	2099	2112	2101	200
180°	2112	2112	2112	2112	2112	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	*3548.6*	3548.6	3548.6	3548.6	3548.6
2.5°	*3564.6*	*3548.6*	*3513.1*	*3545.5*	*3539.1*
5°	*3548.6*	3532.6	3490.7	3519.6	3510.1
7.5°	*3519.6*	3500.5	3455.6	3468.2	3452.1
10°	*3481.1*	3458.6	3394.6	3384.7	3365.6
12.5°	*3433.1*	3404.2	3317.2	3298.2	3262.7
15°	*3375.2*	3339.8	3230.7	3169.7	3137.7
17.5°	*3307.7*	3256.3	3121.3	3050.8	2999.4
20°	*3230.7*	3166.3	3005.8	2925.7	2854.8
22.5°	*3147.2*	3073.3	2886.9	2777.9	2729.9
25°	*3063.8*	2960.8	2749.0	2617.4	2569.0
27.5°	*2964.3*	2854.8	2620.4	2469.5	2395.6
30°	*2858.3*	2736.0	2479.1	2315.5	2228.6
32.5°	*2755.3*	2607.5	2344.5	2151.7	2071.2
35°	*2639.9*	2476.0	2193.5	1991.2	1920.3
37.5°	*2527.4*	2350.7	2052.1	1830.3	1750.3
40°	*2408.6*	2216.0	1904.3	1676.4	1592.9
42.5°	*2286.5*	2081.2	1756.7	1519.0	1438.8
45°	*2158.1*	1942.8	1605.8	1377.5	1300.5
47.5°	*2036.1*	1808.2	1461.3	1233.0	1162.5
50°	*1901.2*	1673.2	1320.0	1098.1	1031.0
52.5°	*1769.4*	1528.5	1185.1	973.1	912.1
55°	*1640.9*	1390.5	1043.6	851.2	790.1
57.5°	*1509.4*	1252.5	918.6	738.7	687.3
60°	*1374.4*	1117.5	786.8	623.2	571.7
62.5°	*1243.0*	986.1	674.3	520.3	494.7
65°	*1108.0*	847.7	558.8	449.7	439.9
67.5°	*979.6*	719.2	449.7	394.9	385.3
70°	*844.7*	594.2	372.4	340.4	327.4
72.5°	*716.2*	478.3	311.4	285.8	279.4
75°	*590.8*	366.0	256.9	234.4	231.3
77.5°	*465.7*	260.0	202.3	189.5	183.0
80°	*349.9*	186.4	154.0	141.4	141.4
82.5°	*243.9*	125.4	106.0	99.5	99.5
85°	*137.9*	70.5	61.0	61.0	61.0
87.5°	*51.4*	25.6	25.6	22.5	22.5
90°	*1.9*	22.9	62.4	58.6	60.5
92.5°	*39.5*	53.5	55.4	57.3	57.3
95°	*92.9*	110.8	114.0	114.0	110.8
97.5°	*154.7*	171.2	178.3	178.3	178.3
100°	*226.0*	240.7	245.8	245.8	243.8
102.5°	*301.2*	312.0	319.0	320.9	319.0
105°	*383.3*	388.4	392.2	395.4	395.4
107.5°	*464.8*	472.4	472.4	473.8	464.8
110°	*543.8*	554.0	554.0	554.0	548.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	*629.1*	639.9	638.0	632.9	629.1
115°	*713.1*	723.3	720.2	718.3	713.1
117.5°	*796.5*	810.5	801.6	796.5	791.4
120°	*880.5*	894.6	880.5	880.5	874.8
122.5°	*957.0*	974.8	965.9	960.8	957.0
125°	*1037.2*	1053.1	1048.1	1042.3	1040.4
127.5°	*1115.5*	1135.3	1128.3	1120.7	1115.5
130°	*1188.8*	1211.7	1208.5	1204.7	1197.7
132.5°	*1270.9*	1288.8	1290.0	1281.1	1276.0
135°	*1341.6*	1361.3	1365.2	1363.2	1358.1
137.5°	*1420.5*	1436.4	1439.6	1438.3	1430.7
140°	*1490.0*	1505.9	1514.8	1514.8	1507.8
142.5°	*1561.2*	1577.2	1582.2	1584.1	1577.2
145°	*1628.8*	1641.5	1651.7	1653.6	1646.6
147.5°	*1689.2*	1705.2	1712.8	1716.0	1709.0
150°	*1751.6*	1762.4	1769.5	1775.2	1769.5
152.5°	*1807.0*	1817.8	1826.7	1833.8	1826.7
155°	*1862.4*	1867.5	1873.3	1882.1	1876.4
157.5°	*1910.2*	1914.0	1917.2	1929.9	1921.0
160°	*1952.8*	1956.7	1958.6	1969.3	1961.7
162.5°	*1992.3*	1992.3	1994.2	2006.3	1997.4
165°	*2026.0*	2024.1	2024.1	2036.9	2027.9
167.5°	*2056.6*	2050.9	2050.9	2063.6	2054.7
170°	*2079.5*	2074.5	2072.6	2085.3	2074.5
172.5°	*2095.5*	2090.3	2088.4	2101.2	2090.3
175°	*2108.1*	2103.1	2099.3	2112.0	2101.2
177.5°	*2115.2*	2110.1	2106.2	2117.1	2106.2
180°	*2112.0*	2112.0	2112.0	2112.0	2112.0

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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	12.49	13.37	13.41	14.30	15.50	8.47	9.35	9.39	10.28	11.47
	3H	14.17	14.95	15.10	15.89	17.11	9.66	10.44	10.59	11.38	12.60
	4H	14.77	15.51	15.72	16.46	17.69	10.11	10.85	11.05	11.79	13.02
	6H	15.19	15.87	16.15	16.82	18.07	10.43	11.11	11.38	12.06	13.30
	8H	15.32	15.96	16.28	16.93	18.17	10.52	11.17	11.48	12.13	13.37
	12H	15.38	15.99	16.34	16.95	18.22	10.56	11.18	11.53	12.14	13.40
4H	2H	12.52	13.26	13.47	14.20	15.43	9.07	9.81	10.02	10.75	11.98
	3H	14.34	14.96	15.30	15.93	17.18	10.42	11.03	11.38	12.01	13.25
	4H	15.03	15.59	16.00	16.56	17.83	10.96	11.52	11.93	12.49	13.76
	6H	15.54	16.02	16.52	17.02	18.28	11.38	11.86	12.36	12.85	14.12
	8H	15.71	16.16	16.69	17.15	18.43	11.51	11.96	12.49	12.94	14.22
	12H	15.80	16.21	16.81	17.21	18.50	11.57	11.98	12.57	12.98	14.27
8H	4H	15.00	15.45	15.98	16.44	17.72	11.24	11.69	12.22	12.68	13.96
	6H	15.56	15.93	16.57	16.96	18.24	11.76	12.13	12.76	13.16	14.43
	8H	15.77	16.10	16.79	17.11	18.41	11.94	12.27	12.96	13.29	14.58
	12H	15.91	16.19	16.92	17.20	18.55	12.06	12.35	13.08	13.36	14.70
12H	4H	14.95	15.36	15.95	16.36	17.65	11.25	11.65	12.25	12.66	13.94
	6H	15.53	15.86	16.55	16.88	18.18	11.80	12.13	12.82	13.15	14.44
	8H	15.75	16.04	16.77	17.05	18.39	12.01	12.30	13.03	13.31	14.65

END OF REPORT