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: P908826

Luminaire Tested: DFN2DIP-PN4F0-100D060US840-RLLFLL

Issue Date: 11/21/2024

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Scaled Data Report

Test Information

Test Method:	LM-79-2019
Report Number:	P908826
	REPORT IS A COMBINATION OF REPORTS P899658 AND P896497
Test Lab:	INNOVATION CENTER
Issue Date:	11/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	NEO-RAY
Catalog Number:	DFN2DIP-PN4F0-100D060US840-RLLFLL
Description:	4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	13946.2 lumens
Efficiency:	N/A
Efficacy:	95.5 lumens/watt
Spacing Criteria (0/90/45):	1.2 / 0.99 / 1.16
Luminous Opening:	Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type:	Semi-Direct

Input Watts (W):	146.1
Input Voltage (V):	
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.9952
Total Harmonic Distortion (THDi):	0.069
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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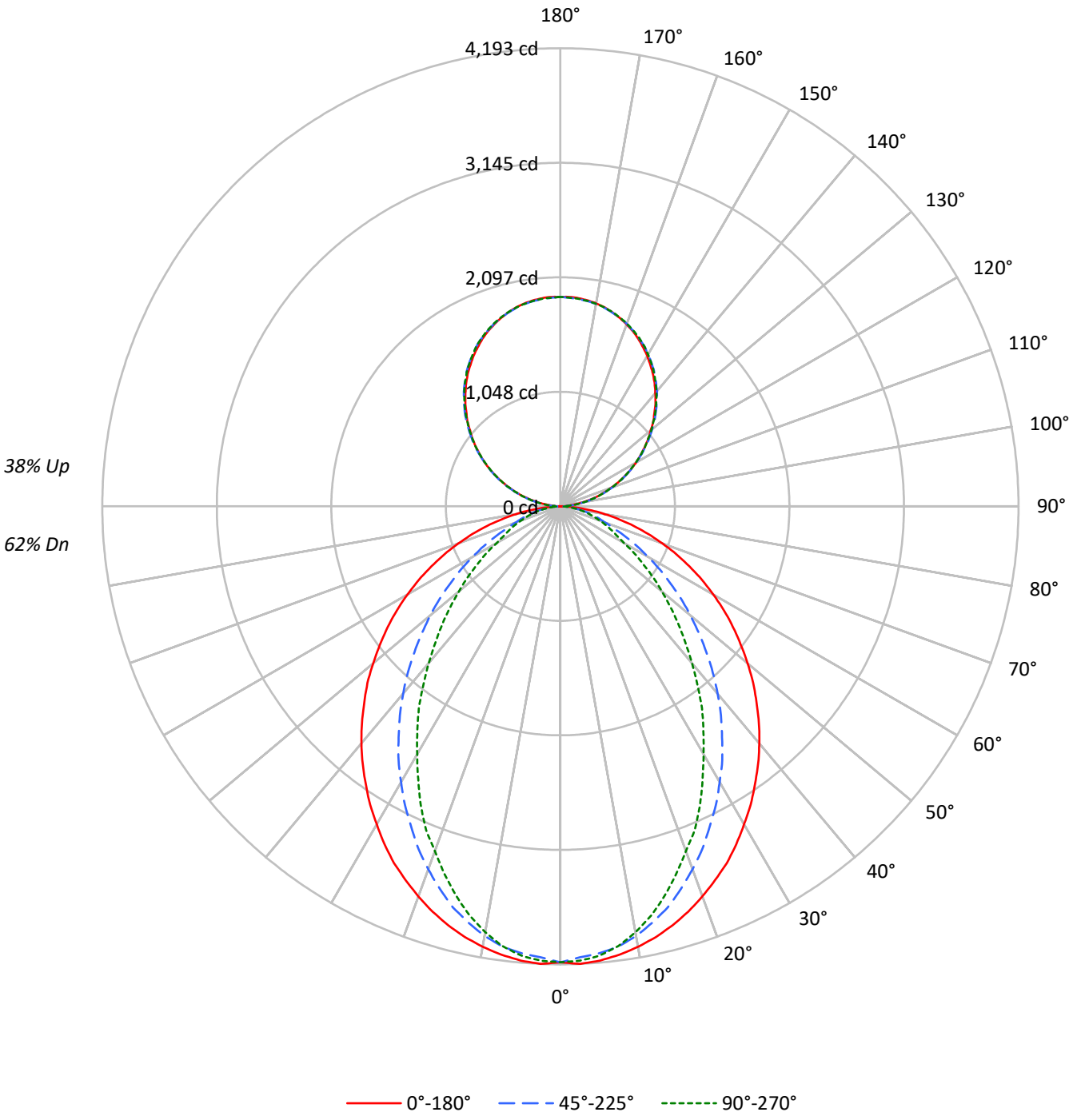
Luminous Intensity Polar Plot



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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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62
1	101	97	93	90	94	91	88	85	80	77	75	69	68	66	60	59	58	53
2	92	85	79	74	86	80	75	70	71	67	63	62	59	56	53	51	49	45
3	85	75	68	63	79	71	65	60	63	58	54	55	51	48	48	45	43	39
4	78	67	60	54	73	63	57	51	56	51	46	49	45	42	43	40	37	34
5	72	60	52	46	67	57	50	44	51	45	41	45	40	37	39	36	33	30
6	66	54	46	41	62	51	44	39	46	40	36	41	36	32	36	32	29	27
7	62	49	42	36	58	47	40	35	42	36	32	37	33	29	33	29	26	24
8	57	45	37	32	54	43	36	31	38	33	28	34	30	26	30	27	24	22
9	53	41	34	29	50	39	32	28	35	30	26	32	27	24	28	24	22	20
10	50	38	31	26	47	36	30	25	33	27	23	29	25	22	26	22	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3047	3047	3047
5°	3052	2999	3018
10°	3021	2940	2920
15°	2980	2843	2769
20°	2925	2710	2583
25°	2868	2560	2404
30°	2793	2406	2176
35°	2718	2241	1976
40°	2643	2070	1746
45°	2555	1881	1538
50°	2465	1689	1335
55°	2370	1484	1139
60°	2261	1270	938
65°	2135	1052	845
70°	1982	849	766
75°	1790	749	698
80°	1512	630	607
85°	1053	423	460

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2555 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	391.2	2.8
10°-20°	1073.8	7.7
20°-30°	1507.6	10.8
30°-40°	1643.4	11.8
40°-50°	1510.5	10.8
50°-60°	1186.3	8.5
60°-70°	772.1	5.5
70°-80°	397.5	2.8
80°-90°	106.9	0.8
90°-100°	118.6	0.9
100°-110°	376.8	2.7
110°-120°	644.8	4.6
120°-130°	848.0	6.1
130°-140°	951.8	6.8
140°-150°	933.4	6.7
150°-160°	783.0	5.6
160°-170°	519.2	3.7
170°-180°	181.5	1.3
0°-30°	2972.6	21.3
0°-40°	4616.1	33.1
0°-60°	7312.8	52.4
0°-90°	8589.3	61.6
90°-120°	1140.1	8.2
90°-150°	3873.3	27.8
90°-180°	5357.0	38.4
0°-180°	13946.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4174	4174	4174	4174	4174	
5°	4174	4155	4106	4140	4128	396
15°	3970	3928	3800	3728	3690	1119
25°	3604	3482	3233	3078	3022	1657
35°	3105	2912	2580	2342	2259	1943
45°	2538	2285	1889	1620	1530	1960
55°	1930	1636	1228	1001	929	1725
65°	1303	997	657	529	517	1292
75°	695	430	302	276	272	735
85°	162	83	72	72	72	186
90°	2	21	57	53	55	14
95°	84	100	103	103	100	94
105°	348	352	356	359	359	367
115°	647	656	653	652	647	640
125°	941	956	951	946	944	841
135°	1217	1235	1239	1237	1232	941
145°	1478	1489	1499	1500	1494	923
155°	1690	1694	1700	1708	1702	778
165°	1838	1836	1836	1848	1840	519
175°	1913	1908	1905	1916	1906	182
180°	1916	1916	1916	1916	1916	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	*4173.8*	4173.8	4173.8	4173.8	4173.8
2.5°	*4192.6*	*4173.8*	*4132.1*	*4170.1*	*4162.6*
5°	*4173.8*	4154.9	4105.6	4139.7	4128.4
7.5°	*4139.7*	4117.2	4064.3	4079.1	4060.4
10°	*4094.4*	4067.9	3992.6	3981.0	3958.6
12.5°	*4037.9*	4003.8	3901.6	3879.2	3837.5
15°	*3969.8*	3928.1	3799.8	3728.1	3690.5
17.5°	*3890.4*	3829.9	3671.3	3588.3	3527.8
20°	*3799.8*	3724.1	3535.3	3441.2	3357.8
22.5°	*3701.7*	3614.7	3395.5	3267.3	3210.8
25°	*3603.5*	3482.5	3233.2	3078.5	3021.6
27.5°	*3486.5*	3357.8	3082.1	2904.6	2817.6
30°	*3361.8*	3217.9	2915.8	2723.5	2621.3
32.5°	*3240.9*	3066.9	2757.5	2530.7	2436.1
35°	*3104.9*	2912.3	2580.0	2342.0	2258.6
37.5°	*2972.7*	2764.7	2413.7	2152.8	2058.6
40°	*2832.9*	2606.5	2239.8	1971.7	1873.5
42.5°	*2689.4*	2447.7	2066.3	1786.6	1692.3
45°	*2538.3*	2285.0	1888.8	1620.2	1529.6
47.5°	*2394.9*	2126.8	1718.8	1450.3	1367.4
50°	*2236.1*	1968.0	1552.5	1291.6	1212.6
52.5°	*2081.0*	1797.8	1393.8	1144.5	1072.8
55°	*1930.0*	1635.5	1227.5	1001.1	929.3
57.5°	*1775.3*	1473.1	1080.5	868.8	808.3
60°	*1616.6*	1314.4	925.3	733.0	672.5
62.5°	*1461.9*	1159.7	793.0	612.0	581.9
65°	*1303.2*	997.0	657.2	529.0	517.4
67.5°	*1152.2*	846.0	529.0	464.4	453.2
70°	*993.4*	698.9	438.0	400.3	385.2
72.5°	*842.3*	562.6	366.3	336.2	328.6
75°	*694.9*	430.4	302.2	275.7	272.1
77.5°	*547.9*	305.8	238.0	222.8	215.2
80°	*411.5*	219.2	181.2	166.3	166.3
82.5°	*286.9*	147.4	124.6	117.0	117.0
85°	*162.3*	82.9	71.7	71.7	71.7
87.5°	*60.5*	30.1	30.1	26.5	26.5
90°	*1.7*	20.8	56.7	53.1	54.8
92.5°	*35.9*	48.6	50.3	52.0	52.0
95°	*84.3*	100.5	103.4	103.4	100.5
97.5°	*140.4*	155.4	161.8	161.8	161.8
100°	*205.1*	218.3	223.0	223.0	221.3
102.5°	*273.3*	283.1	289.4	291.1	289.4
105°	*347.8*	352.4	355.9	358.8	358.8
107.5°	*421.7*	428.7	428.7	429.8	421.7
110°	*493.4*	502.6	502.6	502.6	498.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	*570.8*	580.6	578.9	574.2	570.8
115°	*647.0*	656.3	653.4	651.7	647.0
117.5°	*722.8*	735.5	727.3	722.8	718.1
120°	*799.0*	811.7	799.0	799.0	793.8
122.5°	*868.3*	884.4	876.4	871.8	868.3
125°	*941.1*	955.5	950.9	945.7	944.0
127.5°	*1012.2*	1030.1	1023.7	1016.8	1012.2
130°	*1078.6*	1099.4	1096.5	1093.1	1086.7
132.5°	*1153.2*	1169.3	1170.4	1162.4	1157.7
135°	*1217.3*	1235.2	1238.6	1236.9	1232.2
137.5°	*1288.9*	1303.3	1306.3	1305.0	1298.2
140°	*1351.9*	1366.3	1374.4	1374.4	1368.1
142.5°	*1416.5*	1431.0	1435.6	1437.3	1431.0
145°	*1477.8*	1489.3	1498.6	1500.4	1494.0
147.5°	*1532.7*	1547.1	1554.1	1556.9	1550.5
150°	*1589.3*	1599.1	1605.5	1610.6	1605.5
152.5°	*1639.5*	1649.4	1657.5	1663.9	1657.5
155°	*1689.8*	1694.5	1699.6	1707.8	1702.5
157.5°	*1733.1*	1736.7	1739.5	1751.1	1743.0
160°	*1771.9*	1775.3	1777.1	1786.9	1780.0
162.5°	*1807.7*	1807.7	1809.4	1820.4	1812.3
165°	*1838.3*	1836.5	1836.5	1848.2	1840.1
167.5°	*1866.0*	1860.9	1860.9	1872.4	1864.3
170°	*1886.8*	1882.2	1880.5	1892.0	1882.2
172.5°	*1901.3*	1896.6	1894.9	1906.4	1896.6
175°	*1912.8*	1908.2	1904.7	1916.3	1906.4
177.5°	*1919.1*	1914.6	1911.1	1920.9	1911.1
180°	*1916.3*	1916.3	1916.3	1916.3	1916.3

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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	12.04	12.98	12.90	13.85	14.95	8.01	8.94	8.86	9.82	10.91
	3H	13.73	14.57	14.60	15.45	16.58	9.20	10.04	10.07	10.92	12.05
	4H	14.35	15.13	15.23	16.02	17.16	9.66	10.45	10.55	11.34	12.47
	6H	14.77	15.50	15.67	16.40	17.55	9.99	10.71	10.89	11.61	12.76
	8H	14.91	15.60	15.81	16.51	17.66	10.08	10.77	10.99	11.69	12.83
	12H	14.97	15.63	15.88	16.54	17.71	10.13	10.79	11.04	11.69	12.87
4H	2H	12.07	12.86	12.96	13.75	14.89	8.62	9.41	9.51	10.30	11.43
	3H	13.91	14.57	14.82	15.49	16.64	9.98	10.63	10.88	11.55	12.70
	4H	14.61	15.21	15.53	16.13	17.30	10.53	11.13	11.44	12.04	13.22
	6H	15.14	15.65	16.06	16.59	17.77	10.96	11.47	11.88	12.41	13.59
	8H	15.32	15.80	16.25	16.73	17.92	11.09	11.57	12.02	12.50	13.69
	12H	15.42	15.85	16.37	16.80	18.00	11.16	11.59	12.11	12.54	13.74
8H	4H	14.59	15.07	15.52	16.00	17.20	10.82	11.30	11.75	12.23	13.43
	6H	15.16	15.56	16.12	16.54	17.73	11.34	11.74	12.30	12.72	13.91
	8H	15.38	15.73	16.35	16.70	17.91	11.54	11.89	12.50	12.85	14.06
	12H	15.53	15.83	16.49	16.80	18.05	11.66	11.97	12.63	12.93	14.19
12H	4H	14.55	14.98	15.49	15.93	17.13	10.83	11.26	11.78	12.22	13.41
	6H	15.14	15.49	16.10	16.46	17.66	11.39	11.74	12.36	12.71	13.92
	8H	15.36	15.67	16.33	16.63	17.89	11.61	11.92	12.58	12.88	14.14

END OF REPORT