

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: P922816

Luminaire Tested: DFN2DIP-SQ3F0-070D040US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922816
REPORT IS A COMBINATION OF REPORTS P899867 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D040US940-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

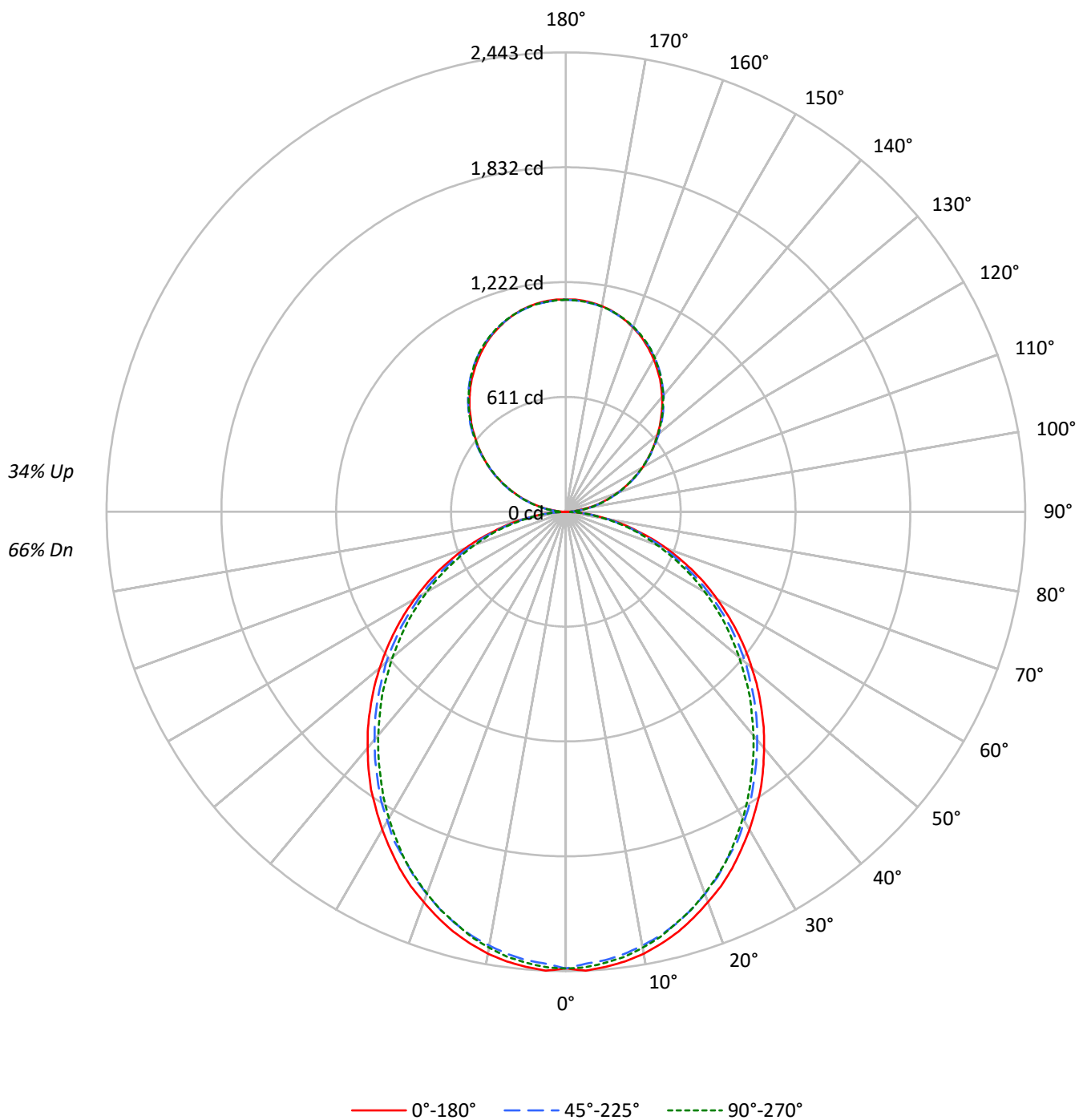
Lumens per Lamp: N/A
Luminaire Lumens: 9336.3 lumens
Efficiency: N/A
Efficacy: 97.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 95.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	101	97	93	89	95	91	88	85	81	78	76	72	70	68	63	61	60
2	92	85	78	73	87	80	74	70	71	67	63	63	60	57	55	53	51
3	84	75	67	61	79	70	64	58	63	57	53	56	51	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	32
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	25
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	49	38	31	26	34	28	24	31	26	22	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2783	2783	2783
5°	2786	2742	2762
10°	2761	2703	2723
15°	2719	2657	2664
20°	2662	2594	2603
25°	2606	2518	2533
30°	2536	2447	2444
35°	2469	2364	2351
40°	2387	2280	2261
45°	2305	2196	2170
50°	2216	2107	2064
55°	2122	2005	1966
60°	2016	1884	1854
65°	1900	1758	1722
70°	1752	1604	1580
75°	1548	1420	1448
80°	1301	1185	1196
85°	916	785	783

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2305 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	228.6	2.4
10°-20°	643.2	6.9
20°-30°	945.2	10.1
30°-40°	1097.8	11.8
40°-50°	1096.5	11.7
50°-60°	956.1	10.2
60°-70°	706.8	7.6
70°-80°	399.9	4.3
80°-90°	108.8	1.2
90°-100°	69.8	0.7
100°-110°	221.8	2.4
110°-120°	379.5	4.1
120°-130°	499.2	5.3
130°-140°	560.3	6.0
140°-150°	549.4	5.9
150°-160°	460.9	4.9
160°-170°	305.7	3.3
170°-180°	106.8	1.1
0°-30°	1817.0	19.5
0°-40°	2914.9	31.2
0°-60°	4967.4	53.2
0°-90°	6182.8	66.2
90°-120°	671.2	7.2
90°-150°	2280.1	24.4
90°-180°	3153.0	33.8
0°-180°	9336.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2429	2429	2429	2429	2429	
5°	2429	2420	2394	2412	2408	231
15°	2312	2298	2268	2277	2266	651
25°	2093	2074	2034	2039	2034	963
35°	1805	1782	1745	1730	1719	1127
45°	1469	1453	1418	1392	1383	1134
55°	1112	1098	1070	1042	1030	994
65°	750	736	712	691	680	741
75°	392	388	376	362	367	419
85°	96	94	91	84	82	107
90°	1	12	33	31	32	9
95°	50	59	61	61	59	55
105°	205	207	210	211	211	216
115°	381	386	385	384	381	377
125°	554	562	560	557	556	495
135°	717	727	729	728	725	554
145°	870	877	882	883	880	544
155°	995	998	1000	1005	1002	458
165°	1082	1081	1081	1088	1083	305
175°	1126	1123	1121	1128	1122	107
180°	1128	1128	1128	1128	1128	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2428.8	2428.8	2428.8	2428.8	2428.8
2.5°	2442.9	2431.2	2405.5	2428.8	2424.3
5°	2428.8	2419.7	2393.9	2412.4	2408.0
7.5°	2412.4	2398.5	2372.8	2391.7	2386.9
10°	2386.9	2370.5	2342.5	2361.2	2354.2
12.5°	2351.7	2337.9	2309.9	2321.5	2316.8
15°	2312.1	2298.2	2267.7	2277.2	2265.5
17.5°	2263.0	2249.2	2218.7	2230.3	2218.7
20°	2209.2	2195.4	2162.7	2169.6	2160.4
22.5°	2155.7	2134.7	2104.2	2104.2	2099.4
25°	2092.6	2073.9	2034.3	2038.8	2034.3
27.5°	2022.4	2006.1	1975.9	1968.9	1957.2
30°	1952.6	1933.7	1898.8	1891.9	1882.4
32.5°	1877.7	1863.9	1826.4	1812.3	1802.9
35°	1805.4	1782.1	1744.6	1730.5	1718.9
37.5°	1723.6	1702.5	1665.1	1648.8	1637.1
40°	1639.6	1620.8	1583.3	1562.5	1553.1
42.5°	1557.8	1539.0	1501.8	1478.3	1464.4
45°	1469.1	1452.8	1417.6	1392.0	1382.6
47.5°	1382.6	1366.3	1328.8	1303.1	1289.2
50°	1291.5	1279.8	1247.1	1214.4	1202.7
52.5°	1202.7	1186.4	1156.2	1130.4	1114.0
55°	1111.8	1097.7	1069.7	1041.7	1030.0
57.5°	1020.7	1009.0	978.5	950.5	941.1
60°	929.4	920.2	887.6	861.8	854.9
62.5°	840.7	824.4	801.1	777.8	768.4
65°	749.8	735.7	712.4	691.3	679.7
67.5°	656.4	644.5	623.7	607.3	597.9
70°	569.9	560.5	539.4	523.1	513.9
72.5°	481.2	471.8	460.1	443.8	436.8
75°	392.3	387.8	375.9	362.0	366.8
77.5°	313.0	303.5	298.8	291.9	285.0
80°	233.6	231.2	226.5	219.5	214.8
82.5°	158.8	158.8	156.6	147.2	147.2
85°	95.7	93.5	91.2	84.0	81.8
87.5°	42.1	37.5	32.7	25.8	23.3
90°	1.0	12.2	33.3	31.3	32.3
92.5°	21.0	28.5	29.6	30.6	30.6
95°	49.7	59.2	60.9	60.9	59.2
97.5°	82.7	91.5	95.2	95.2	95.2
100°	120.7	128.6	131.3	131.3	130.3
102.5°	160.9	166.7	170.4	171.4	170.4
105°	204.7	207.4	209.5	211.2	211.2
107.5°	248.3	252.4	252.4	253.0	248.3
110°	290.4	295.9	295.9	295.9	293.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	336.0	341.8	340.7	338.0	336.0
115°	380.8	386.4	384.6	383.6	380.8
117.5°	425.4	432.9	428.2	425.4	422.8
120°	470.4	477.8	470.4	470.4	467.3
122.5°	511.1	520.7	515.9	513.2	511.1
125°	554.0	562.5	559.8	556.7	555.7
127.5°	595.8	606.4	602.6	598.5	595.8
130°	634.9	647.2	645.5	643.5	639.7
132.5°	678.8	688.3	689.0	684.2	681.5
135°	716.6	727.1	729.2	728.1	725.4
137.5°	758.8	767.2	768.9	768.2	764.2
140°	795.8	804.3	809.0	809.0	805.3
142.5°	833.9	842.4	845.1	846.1	842.4
145°	870.0	876.7	882.2	883.2	879.5
147.5°	902.2	910.7	914.8	916.5	912.8
150°	935.6	941.4	945.1	948.2	945.1
152.5°	965.2	970.9	975.7	979.5	975.7
155°	994.7	997.5	1000.5	1005.3	1002.2
157.5°	1020.3	1022.3	1024.0	1030.8	1026.0
160°	1043.0	1045.1	1046.1	1051.9	1047.8
162.5°	1064.1	1064.1	1065.1	1071.6	1066.8
165°	1082.2	1081.1	1081.1	1087.9	1083.2
167.5°	1098.5	1095.4	1095.4	1102.2	1097.4
170°	1110.7	1108.0	1107.0	1113.7	1108.0
172.5°	1119.2	1116.5	1115.4	1122.3	1116.5
175°	1126.1	1123.3	1121.2	1128.0	1122.3
177.5°	1129.8	1127.0	1125.0	1130.8	1125.0
180°	1128.0	1128.0	1128.0	1128.0	1128.0

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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	12.17	13.20	12.97	14.03	15.04	11.73	12.75	12.53	13.58	14.60
	3H	13.84	14.76	14.66	15.60	16.65	13.35	14.27	14.16	15.11	16.16
	4H	14.43	15.30	15.26	16.15	17.21	13.94	14.81	14.77	15.65	16.71
	6H	14.84	15.64	15.68	16.49	17.56	14.33	15.14	15.18	15.99	17.06
	8H	14.94	15.71	15.80	16.58	17.65	14.44	15.21	15.30	16.08	17.15
	12H	15.00	15.73	15.86	16.59	17.69	14.49	15.22	15.35	16.08	17.18
4H	2H	12.65	13.52	13.49	14.36	15.42	12.29	13.16	13.13	14.01	15.07
	3H	14.52	15.25	15.37	16.13	17.20	14.11	14.84	14.96	15.72	16.79
	4H	15.24	15.90	16.10	16.78	17.88	14.82	15.48	15.68	16.35	17.46
	6H	15.76	16.33	16.64	17.23	18.34	15.33	15.90	16.21	16.80	17.90
	8H	15.91	16.45	16.79	17.34	18.46	15.47	16.01	16.36	16.90	18.02
	12H	15.99	16.47	16.89	17.39	18.51	15.54	16.02	16.44	16.94	18.06
8H	4H	15.45	15.98	16.33	16.88	17.99	15.07	15.60	15.95	16.50	17.62
	6H	16.08	16.52	16.99	17.46	18.57	15.69	16.14	16.60	17.07	18.19
	8H	16.30	16.69	17.22	17.62	18.75	15.90	16.30	16.82	17.23	18.36
	12H	16.43	16.78	17.35	17.70	18.89	16.02	16.37	16.94	17.29	18.47
12H	4H	15.44	15.92	16.34	16.83	17.96	15.07	15.55	15.97	16.47	17.59
	6H	16.11	16.50	17.03	17.43	18.56	15.73	16.13	16.65	17.06	18.19
	8H	16.35	16.70	17.28	17.62	18.81	15.97	16.32	16.89	17.24	18.43