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: P917263

Luminaire Tested: DFN2DIP-SQ3F0-040D060US930-RLLONL

Issue Date: 11/21/2024

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Scaled Data Report

Test Information

Test Method:	LM-79-2019
Report Number:	P917263
	REPORT IS A COMBINATION OF REPORTS P901418 AND P898289
Test Lab:	INNOVATION CENTER
Issue Date:	11/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	NEO-RAY
Catalog Number:	DFN2DIP-SQ3F0-040D060US930-RLLONL
Description:	3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	7614.9 lumens
Efficiency:	N/A
Efficacy:	98.4 lumens/watt
Spacing Criteria (0/90/45):	1.2 / 0.99 / 1.16
Luminous Opening:	Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type:	Semi-Indirect

Input Watts (W):	77.4
Input Voltage (V):	
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.9933
Total Harmonic Distortion (THDi):	0.066
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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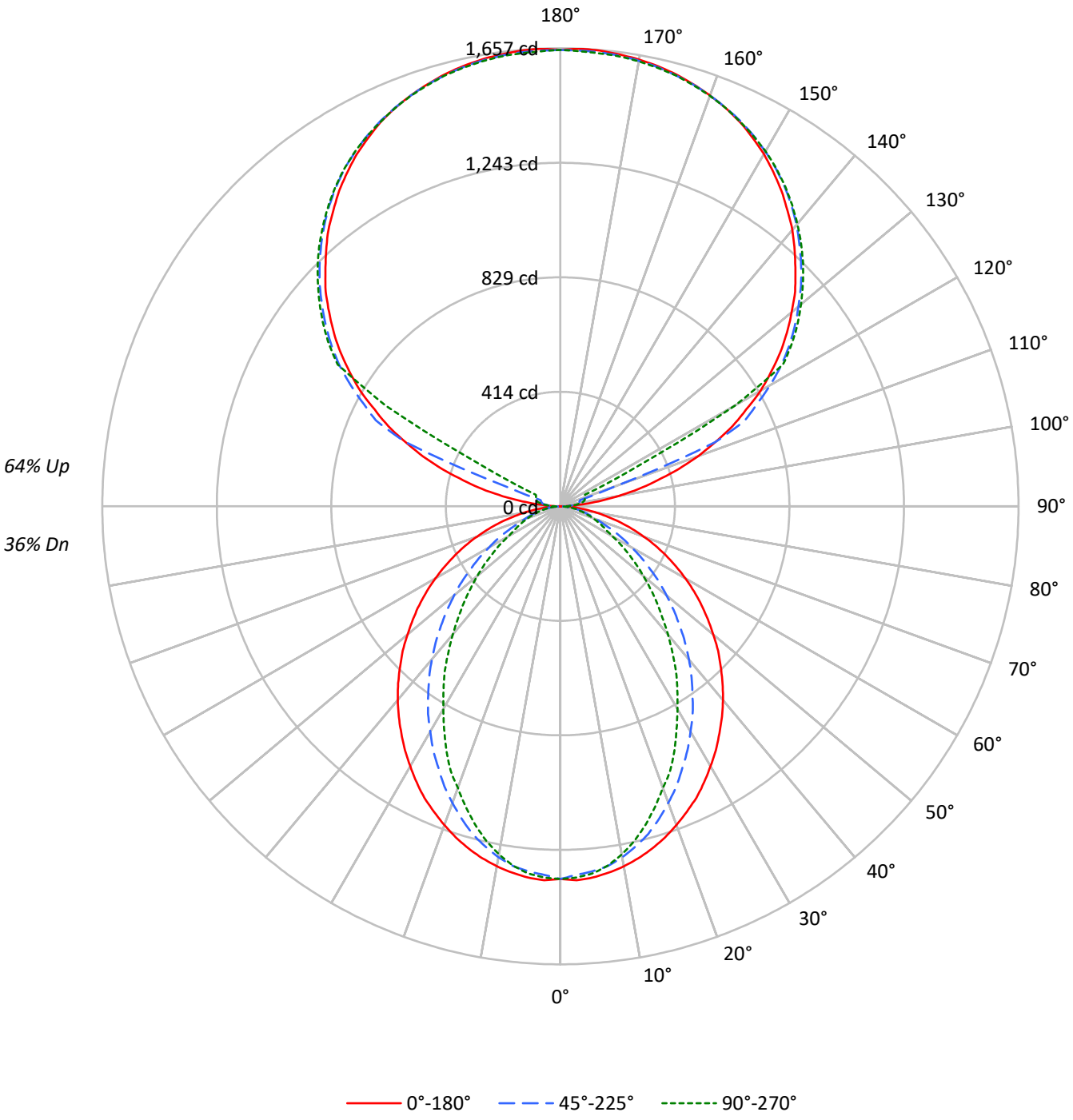
Luminous Intensity Polar Plot



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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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44	36
1	95	91	87	84	86	83	80	77	67	65	63	52	51	50	39	38	38	31
2	87	80	74	69	78	73	68	63	59	56	53	46	44	42	35	33	32	27
3	79	70	63	58	72	64	58	53	52	48	45	41	38	36	31	29	28	23
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	28	26	24	20
5	67	56	48	42	60	51	44	39	42	37	33	33	30	27	25	23	21	18
6	62	50	42	37	56	46	39	34	38	33	29	30	27	24	23	21	19	16
7	57	45	38	32	52	41	35	30	34	29	26	28	24	21	21	19	17	14
8	53	41	34	29	48	38	31	27	31	26	23	25	22	19	20	17	15	13
9	49	37	30	25	45	34	28	24	29	24	20	23	20	17	18	16	14	12
10	46	34	27	23	42	32	25	21	26	22	18	22	18	15	17	14	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1544	1544	1544
5°	1546	1519	1529
10°	1530	1488	1479
15°	1508	1438	1401
20°	1479	1369	1307
25°	1449	1292	1215
30°	1410	1213	1099
35°	1371	1129	997
40°	1332	1042	881
45°	1286	945	775
50°	1239	847	672
55°	1190	743	573
60°	1132	634	471
65°	1067	524	423
70°	986	421	382
75°	886	369	347
80°	740	306	299
85°	502	200	222

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1286 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.3	1.7
10°-20°	346.8	4.6
20°-30°	486.9	6.4
30°-40°	530.7	7.0
40°-50°	487.8	6.4
50°-60°	383.1	5.0
60°-70°	249.3	3.3
70°-80°	128.4	1.7
80°-90°	35.7	0.5
90°-100°	54.4	0.7
100°-110°	202.9	2.7
110°-120°	538.2	7.1
120°-130°	892.7	11.7
130°-140°	948.2	12.5
140°-150°	881.3	11.6
150°-160°	708.5	9.3
160°-170°	456.5	6.0
170°-180°	157.1	2.1
0°-30°	960.0	12.6
0°-40°	1490.7	19.6
0°-60°	2361.5	31.0
0°-90°	2774.9	36.4
90°-120°	795.6	10.4
90°-150°	3517.8	46.2
90°-180°	4840.0	63.6
0°-180°	7614.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1348	1348	1348	1348	1348	
5°	1348	1342	1326	1337	1333	128
15°	1282	1268	1227	1204	1192	361
25°	1164	1125	1044	994	976	535
35°	1003	940	833	756	729	628
45°	820	738	610	523	494	633
55°	623	528	396	323	300	557
65°	421	322	212	171	167	417
75°	224	139	98	89	88	237
85°	52	27	23	23	23	60
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°	1347.9	1347.9	1347.9	*1347.9*	1347.9
2.5°	1354.0	1347.9	1334.4	*1346.7*	1344.2
5°	1347.9	1341.7	1325.8	*1336.8*	1333.3
7.5°	1336.8	1329.6	1312.5	*1317.3*	1311.2
10°	1322.3	1313.7	1289.3	*1285.6*	1278.4
12.5°	1304.0	1293.0	1260.0	*1252.7*	1239.3
15°	1282.0	1268.5	1227.1	*1204.0*	1191.8
17.5°	1256.4	1236.8	1185.5	*1158.8*	1139.2
20°	1227.1	1202.6	1141.7	*1111.3*	1084.3
22.5°	1195.4	1167.3	1096.5	*1055.1*	1036.9
25°	1163.7	1124.6	1044.1	*994.2*	975.7
27.5°	1125.9	1084.3	995.3	*938.0*	909.9
30°	1085.7	1039.2	941.6	*879.5*	846.5
32.5°	1046.6	990.4	890.5	*817.3*	786.7
35°	1002.7	940.4	833.2	*756.3*	729.4
37.5°	960.0	892.8	779.4	*695.2*	664.8
40°	914.8	841.7	723.3	*636.7*	605.0
42.5°	868.5	790.4	667.2	*576.9*	546.5
45°	819.7	737.9	609.9	*523.3*	494.0
47.5°	773.4	686.8	555.1	*468.4*	441.6
50°	722.1	635.5	501.3	*417.1*	391.6
52.5°	672.1	580.6	450.1	*369.6*	346.4
55°	623.3	528.2	396.4	*323.3*	300.1
57.5°	573.3	475.7	348.9	*280.5*	261.1
60°	522.0	424.4	298.8	*236.7*	217.2
62.5°	472.1	374.5	256.1	*197.6*	187.9
65°	420.9	322.0	212.2	*170.8*	167.1
67.5°	372.1	273.2	170.8	*150.0*	146.3
70°	320.8	225.7	141.5	*129.3*	124.3
72.5°	272.1	181.7	118.3	*108.6*	106.2
75°	224.4	139.0	97.6	*89.0*	87.9
77.5°	176.9	98.7	76.9	*72.0*	69.5
80°	132.9	70.8	58.5	*53.7*	53.7
82.5°	92.7	47.6	40.3	*37.7*	37.7
85°	52.4	26.8	23.2	*23.2*	23.2
87.5°	19.6	9.7	9.7	*8.6*	8.6
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	7.21	7.94	8.28	9.01	10.46	3.17	3.90	4.24	4.97	6.42
	3H	8.87	9.53	9.95	10.60	12.08	4.34	5.00	5.42	6.07	7.55
	4H	9.47	10.09	10.57	11.17	12.65	4.78	5.40	5.87	6.48	7.96
	6H	9.89	10.46	10.99	11.54	13.03	5.09	5.66	6.19	6.75	8.24
	8H	10.01	10.55	11.11	11.65	13.13	5.18	5.72	6.28	6.82	8.30
	12H	10.07	10.58	11.17	11.67	13.18	5.22	5.73	6.32	6.82	8.33
4H	2H	7.21	7.83	8.31	8.91	10.39	3.75	4.37	4.85	5.45	6.93
	3H	9.03	9.54	10.13	10.65	12.14	5.08	5.60	6.19	6.70	8.19
	4H	9.71	10.18	10.82	11.28	12.79	5.62	6.09	6.73	7.19	8.70
	6H	10.22	10.62	11.33	11.74	13.25	6.03	6.43	7.14	7.55	9.06
	8H	10.39	10.76	11.50	11.88	13.40	6.15	6.53	7.27	7.64	9.16
	12H	10.47	10.82	11.61	11.94	13.47	6.21	6.55	7.34	7.67	9.20
8H	4H	9.67	10.05	10.79	11.16	12.68	5.89	6.27	7.01	7.38	8.90
	6H	10.23	10.54	11.36	11.69	13.21	6.40	6.71	7.54	7.86	9.38
	8H	10.44	10.71	11.58	11.85	13.38	6.58	6.85	7.73	7.99	9.53
	12H	10.57	10.81	11.72	11.94	13.51	6.69	6.93	7.84	8.06	9.64
12H	4H	9.62	9.96	10.75	11.08	12.61	5.89	6.23	7.02	7.36	8.88
	6H	10.20	10.47	11.35	11.61	13.15	6.45	6.72	7.59	7.85	9.39
	8H	10.41	10.65	11.56	11.78	13.36	6.65	6.88	7.79	8.01	9.59

END OF REPORT