

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: P903907

Luminaire Tested: DFN2DIP-SQ3F0-120D050US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903907
REPORT IS A COMBINATION OF REPORTS P901416 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D050US830-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

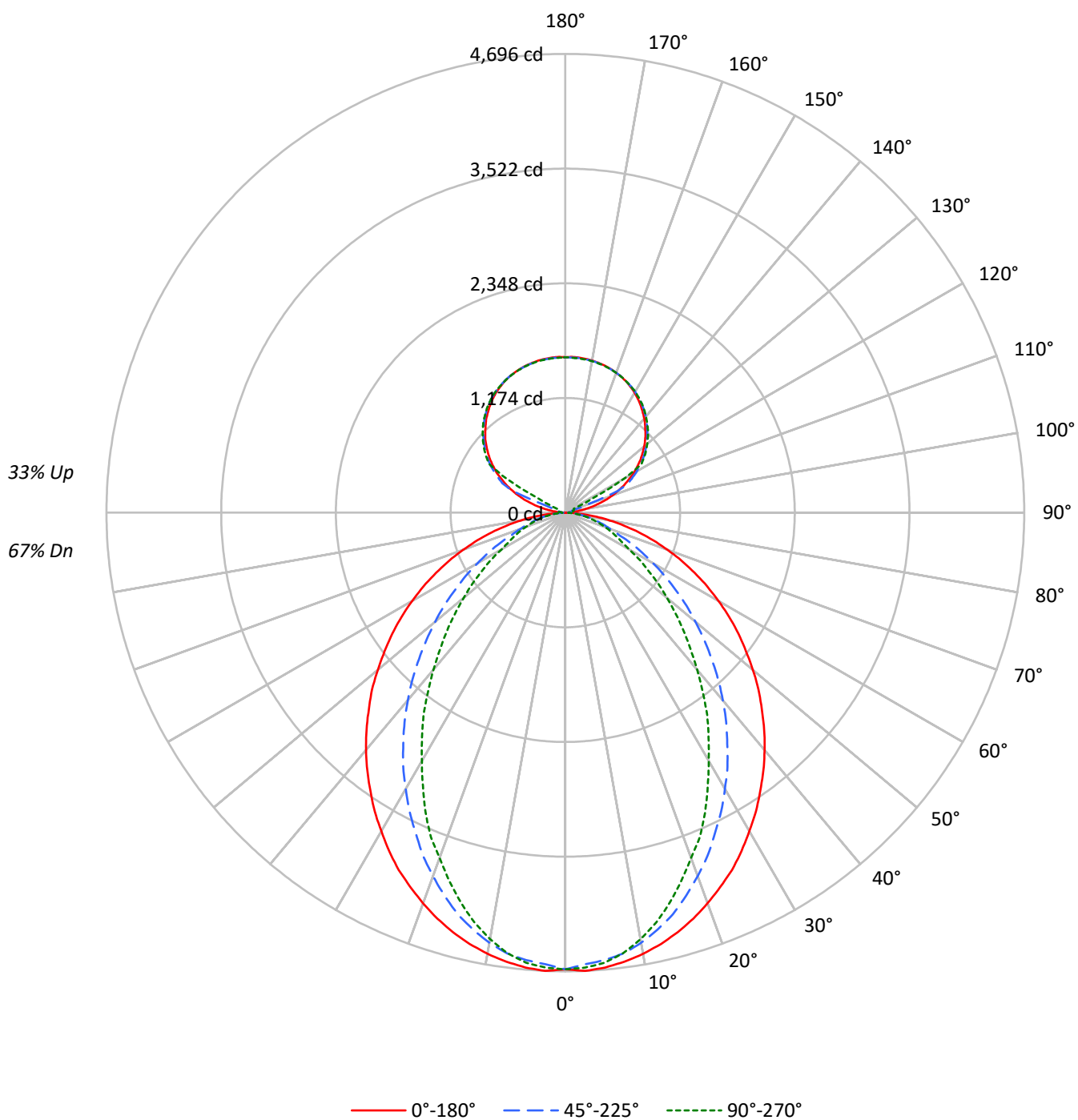
Lumens per Lamp: N/A
Luminaire Lumens: 14279.5 lumens
Efficiency: N/A
Efficacy: 87.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 162.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
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		105	105	105	105		93	93	93		82	82	82		72	72	72
1	102	98	94	91		96	93	89	86		83	80	78		73	71	70		65	63	62
2	94	86	80	75		88	82	77	72		73	69	66		65	62	59		58	55	53
3	86	77	69	64		81	73	66	61		65	60	56		58	54	51		52	49	46
4	79	68	61	55		74	65	58	52		58	53	48		52	48	44		47	43	40
5	73	61	53	47		69	58	51	46		53	47	42		47	43	39		42	39	36
6	67	55	47	42		63	53	45	40		48	42	37		43	38	34		39	35	32
7	63	50	42	37		59	48	41	36		44	38	33		39	35	31		36	32	28
8	58	46	38	33		55	44	37	32		40	34	30		36	31	28		33	29	26
9	54	42	35	30		51	40	33	29		37	31	27		34	29	25		30	26	23
10	51	39	32	27		48	37	31	26		34	28	25		31	26	23		28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5356	5356	5356
5°	5361	5268	5303
10°	5305	5161	5129
15°	5228	4987	4861
20°	5128	4748	4532
25°	5026	4482	4214
30°	4890	4209	3812
35°	4756	3915	3459
40°	4619	3612	3055
45°	4461	3276	2688
50°	4297	2938	2330
55°	4126	2577	1987
60°	3927	2199	1634
65°	3698	1816	1468
70°	3421	1459	1326
75°	3072	1278	1202
80°	2567	1061	1037
85°	1741	691	769

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4461 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	438.1	3.1
10°-20°	1202.7	8.4
20°-30°	1688.5	11.8
30°-40°	1840.6	12.9
40°-50°	1691.7	11.8
50°-60°	1328.6	9.3
60°-70°	864.8	6.1
70°-80°	445.2	3.1
80°-90°	116.4	0.8
90°-100°	52.5	0.4
100°-110°	195.5	1.4
110°-120°	518.5	3.6
120°-130°	860.0	6.0
130°-140°	913.5	6.4
140°-150°	849.0	5.9
150°-160°	682.6	4.8
160°-170°	439.8	3.1
170°-180°	151.4	1.1
0°-30°	3329.4	23.3
0°-40°	5170.0	36.2
0°-60°	8190.3	57.4
0°-90°	9616.7	67.3
90°-120°	766.5	5.4
90°-150°	3389.0	23.7
90°-180°	4663.0	32.7
0°-180°	14279.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4675	4675	4675	4675	4675	
5°	4675	4654	4598	4636	4624	443
15°	4446	4400	4256	4176	4133	1253
25°	4036	3900	3621	3448	3384	1856
35°	3478	3262	2890	2623	2530	2177
45°	2843	2559	2115	1815	1713	2195
55°	2162	1832	1375	1121	1041	1932
65°	1460	1117	736	592	580	1447
75°	778	482	338	309	305	823
85°	182	93	80	80	80	209
90°	1	14	23	29	31	14
95°	75	37	45	51	50	89
105°	350	384	70	83	88	374
115°	662	681	710	177	94	651
125°	936	951	972	980	984	834
135°	1158	1176	1186	1198	1196	894
145°	1343	1342	1361	1370	1364	840
155°	1479	1469	1482	1489	1480	681
165°	1558	1551	1555	1563	1555	440
175°	1594	1586	1588	1596	1585	152
180°	1590	1590	1590	1590	1590	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4674.6	4674.6	4674.6	4674.6	4674.6
2.5°	4695.7	4674.6	4628.0	4670.6	4662.0
5°	4674.6	4653.5	4598.3	4636.5	4623.9
7.5°	4636.5	4611.3	4552.1	4568.7	4547.6
10°	4585.8	4556.2	4471.7	4458.7	4433.6
12.5°	4522.4	4484.3	4369.8	4344.7	4298.1
15°	4446.2	4399.5	4255.9	4175.5	4133.3
17.5°	4357.3	4289.5	4111.7	4018.9	3951.1
20°	4255.9	4171.0	3959.6	3854.1	3760.7
22.5°	4145.9	4048.5	3803.0	3659.3	3596.1
25°	4036.0	3900.3	3621.2	3447.9	3384.2
27.5°	3904.9	3760.7	3452.0	3253.2	3155.7
30°	3765.3	3604.2	3265.7	3050.3	2935.8
32.5°	3629.7	3434.9	3088.4	2834.4	2728.5
35°	3477.6	3261.7	2889.6	2623.0	2529.6
37.5°	3329.4	3096.5	2703.3	2411.1	2305.6
40°	3172.8	2919.2	2508.6	2208.3	2098.3
42.5°	3012.1	2741.5	2314.2	2000.9	1895.5
45°	2842.9	2559.3	2115.3	1814.7	1713.2
47.5°	2682.2	2382.0	1925.0	1624.4	1531.4
50°	2504.5	2204.2	1738.8	1446.6	1358.2
52.5°	2330.8	2013.5	1561.0	1281.9	1201.6
55°	2161.6	1831.7	1374.8	1121.2	1040.8
57.5°	1988.3	1649.9	1210.0	973.1	905.3
60°	1810.6	1472.2	1036.3	821.0	753.2
62.5°	1637.4	1298.9	888.3	685.4	651.7
65°	1459.6	1116.7	736.1	592.5	579.5
67.5°	1290.4	947.4	592.5	520.2	507.7
70°	1112.7	782.8	490.6	448.4	431.3
72.5°	943.5	630.2	410.2	376.5	368.1
75°	778.3	482.0	338.5	308.8	304.7
77.5°	613.6	342.4	266.6	249.6	241.0
80°	461.0	245.5	202.8	186.2	186.2
82.5°	321.4	165.1	139.6	131.0	131.0
85°	181.8	92.9	80.3	80.3	80.3
87.5°	67.8	33.6	33.6	29.6	29.6
90°	1.1	13.8	23.0	28.8	31.0
92.5°	28.8	24.2	27.6	30.0	31.0
95°	74.7	36.8	44.9	50.7	49.5
97.5°	134.6	40.3	58.6	62.2	63.2
100°	203.8	46.1	65.6	74.7	77.1
102.5°	279.7	277.4	68.0	80.5	84.1
105°	349.9	384.5	70.2	82.8	87.5
107.5°	431.6	460.2	72.6	85.1	89.8
110°	509.9	534.0	201.4	86.3	90.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	583.5	604.2	584.7	88.6	92.1
115°	661.8	681.3	710.1	177.3	94.4
117.5°	729.6	752.6	772.3	607.6	306.1
120°	805.6	822.8	843.6	857.4	702.0
122.5°	870.0	888.4	911.5	918.4	919.6
125°	935.6	950.6	972.5	980.5	984.0
127.5°	995.4	1011.5	1029.0	1040.4	1041.5
130°	1051.9	1070.4	1082.9	1095.6	1094.6
132.5°	1109.5	1124.5	1137.0	1147.5	1146.3
135°	1157.8	1176.3	1186.5	1198.2	1195.8
137.5°	1208.3	1222.2	1233.8	1245.3	1241.9
140°	1257.8	1267.2	1279.7	1290.1	1284.4
142.5°	1299.4	1307.5	1322.4	1331.5	1325.8
145°	1343.1	1341.9	1361.4	1369.5	1363.8
147.5°	1381.0	1377.5	1397.1	1402.9	1398.4
150°	1417.9	1409.9	1428.2	1435.1	1429.4
152.5°	1448.9	1439.7	1457.0	1464.0	1455.9
155°	1478.8	1468.6	1482.3	1489.2	1480.1
157.5°	1503.0	1493.8	1504.2	1512.3	1503.0
160°	1523.8	1516.8	1523.8	1530.6	1522.6
162.5°	1542.1	1535.3	1541.0	1549.1	1538.7
165°	1558.2	1551.4	1554.8	1562.8	1554.8
167.5°	1570.9	1564.0	1567.5	1575.6	1565.2
170°	1581.3	1574.3	1576.7	1584.7	1574.3
172.5°	1588.2	1581.3	1583.7	1591.7	1581.3
175°	1593.9	1585.8	1588.2	1596.2	1584.7
177.5°	1596.2	1588.2	1589.4	1597.4	1587.1
180°	1590.4	1590.4	1590.4	1590.4	1590.4

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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	14.43	15.42	15.23	16.24	17.24	10.39	11.38	11.19	12.20	13.20
	3H	16.11	17.00	16.93	17.83	18.86	11.58	12.47	12.40	13.30	14.33
	4H	16.73	17.57	17.56	18.40	19.44	12.04	12.88	12.87	13.71	14.75
	6H	17.15	17.93	18.00	18.77	19.82	12.36	13.13	13.20	13.98	15.03
	8H	17.28	18.02	18.13	18.88	19.93	12.45	13.19	13.30	14.05	15.10
	12H	17.35	18.05	18.20	18.90	19.98	12.50	13.20	13.35	14.05	15.13
4H	2H	14.46	15.30	15.30	16.14	17.18	11.00	11.84	11.84	12.68	13.72
	3H	16.30	17.00	17.15	17.87	18.93	12.36	13.06	13.21	13.92	14.98
	4H	17.00	17.63	17.86	18.50	19.58	12.91	13.54	13.77	14.41	15.49
	6H	17.52	18.06	18.39	18.95	20.04	13.33	13.88	14.20	14.77	15.86
	8H	17.69	18.20	18.57	19.09	20.19	13.46	13.97	14.34	14.85	15.95
	12H	17.79	18.25	18.69	19.16	20.26	13.53	13.98	14.42	14.89	16.00
8H	4H	16.98	17.49	17.85	18.37	19.47	13.20	13.71	14.08	14.59	15.69
	6H	17.54	17.96	18.45	18.89	19.99	13.71	14.13	14.62	15.06	16.16
	8H	17.76	18.13	18.67	19.05	20.17	13.90	14.27	14.82	15.19	16.31
	12H	17.90	18.23	18.82	19.14	20.31	14.02	14.35	14.94	15.26	16.43
12H	4H	16.94	17.39	17.83	18.30	19.41	13.21	13.67	14.11	14.57	15.68
	6H	17.52	17.89	18.43	18.81	19.93	13.76	14.14	14.68	15.06	16.17
	8H	17.74	18.07	18.66	18.98	20.15	13.97	14.30	14.89	15.21	16.39

END OF REPORT