

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: P925470

Luminaire Tested: DFN2DIP-SQ3F0-040D120US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925470
REPORT IS A COMBINATION OF REPORTS P900006 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D120US950-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

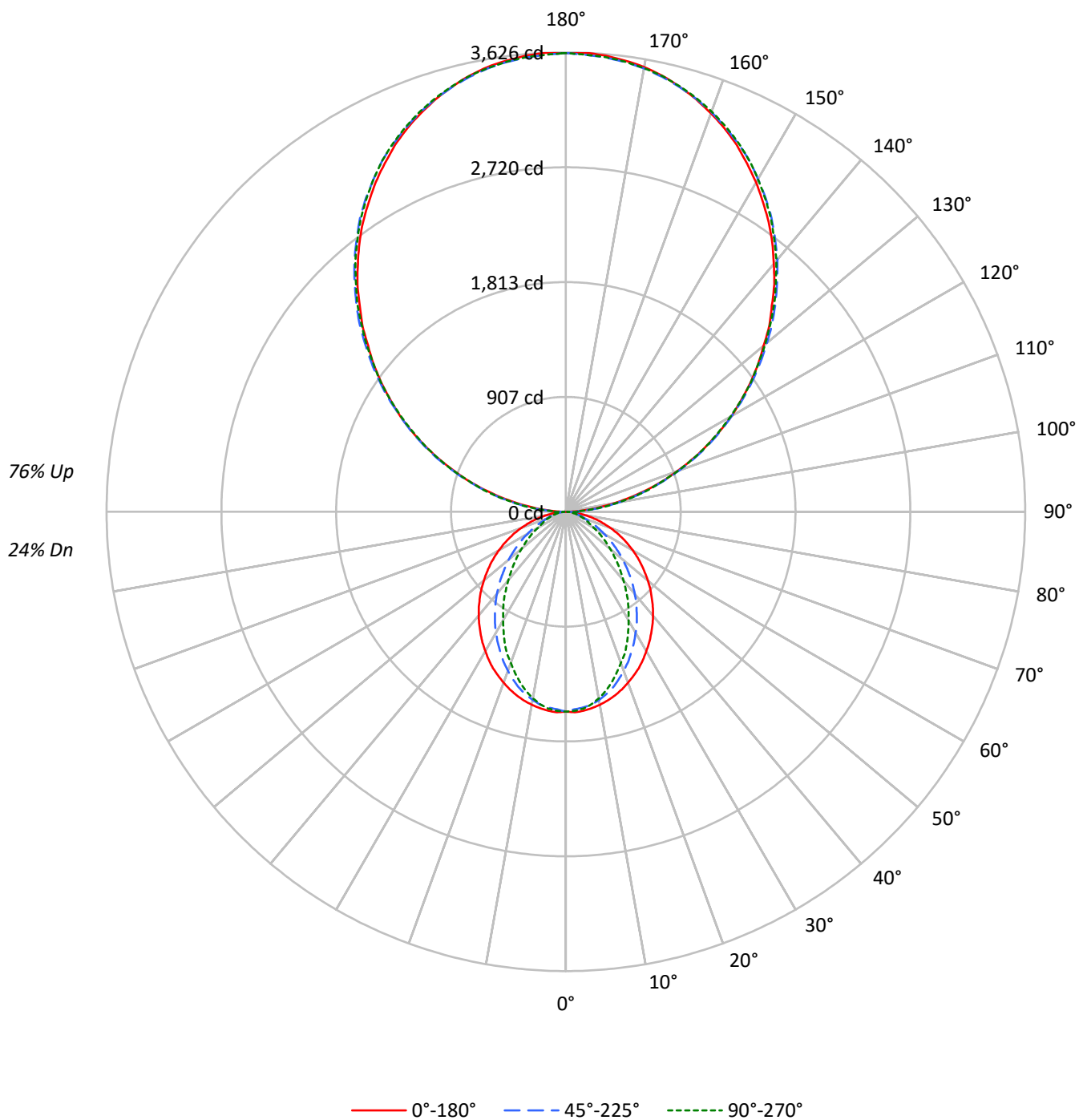
Lumens per Lamp: N/A
Luminaire Lumens: 13375.1 lumens
Efficiency: N/A
Efficacy: 105.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 126.4
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
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	101	101	101	101		90	90	90	90		69	69	69		50	50	50		33	33	33
1	92	88	85	81		82	79	76	73		61	59	57		44	43	42		29	28	28
2	84	77	71	67		75	69	64	60		53	50	47		39	37	35		26	25	24
3	77	68	61	56		68	61	55	50		47	43	40		35	32	30		23	22	20
4	70	60	53	47		62	54	48	43		42	38	34		31	28	26		21	19	18
5	64	54	46	40		57	48	42	37		38	33	29		28	25	22		19	17	16
6	59	48	40	35		53	43	37	32		34	29	26		25	22	20		17	15	14
7	55	43	36	30		49	39	32	28		31	26	23		23	20	17		16	14	12
8	51	39	32	27		45	35	29	24		28	23	20		21	18	16		14	12	11
9	47	36	29	24		42	32	26	22		25	21	18		19	16	14		13	11	10
10	44	33	26	21		39	29	23	19		23	19	16		18	15	13		12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1807	1807	1807
5°	1809	1777	1789
10°	1790	1741	1730
15°	1764	1682	1640
20°	1730	1602	1529
25°	1696	1512	1422
30°	1650	1420	1286
35°	1605	1321	1167
40°	1559	1219	1031
45°	1505	1105	907
50°	1450	991	786
55°	1392	869	670
60°	1325	742	551
65°	1248	613	495
70°	1154	492	447
75°	1036	431	406
80°	866	358	350
85°	587	233	259

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 3642 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.8	1.1
10°-20°	405.8	3.0
20°-30°	569.7	4.3
30°-40°	621.0	4.6
40°-50°	570.8	4.3
50°-60°	448.2	3.4
60°-70°	291.8	2.2
70°-80°	150.2	1.1
80°-90°	48.6	0.4
90°-100°	224.0	1.7
100°-110°	711.8	5.3
110°-120°	1218.2	9.1
120°-130°	1602.1	12.0
130°-140°	1798.3	13.4
140°-150°	1763.5	13.2
150°-160°	1479.3	11.1
160°-170°	981.0	7.3
170°-180°	342.9	2.6
0°-30°	1123.3	8.4
0°-40°	1744.3	13.0
0°-60°	2763.3	20.7
0°-90°	3253.9	24.3
90°-120°	2154.1	16.1
90°-150°	7318.0	54.7
90°-180°	10121.0	75.7
0°-180°	13375.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1577	1577	1577	1577	1577	
5°	1577	1570	1551	1564	1560	150
15°	1500	1484	1436	1409	1395	423
25°	1362	1316	1222	1163	1142	626
35°	1173	1100	975	885	853	734
45°	959	864	714	612	578	741
55°	729	618	464	378	351	652
65°	492	377	248	200	196	488
75°	262	163	114	104	103	278
85°	61	31	27	27	27	70
90°	3	39	107	100	104	13
95°	159	190	195	195	190	177
105°	657	666	672	678	678	693
115°	1222	1240	1234	1231	1222	1209
125°	1778	1805	1797	1787	1784	1589
135°	2300	2334	2340	2337	2328	1778
145°	2792	2814	2831	2835	2823	1745
155°	3193	3201	3211	3226	3217	1470
165°	3473	3470	3470	3492	3476	980
175°	3614	3605	3599	3620	3602	343
180°	3620	3620	3620	3620	3620	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1577.2	1577.2	1577.2	1577.2	1577.2
2.5°	1584.3	1577.2	1561.4	1575.8	1572.9
5°	1577.2	1570.0	1551.4	1564.3	1560.1
7.5°	1564.3	1555.8	1535.8	1541.4	1534.3
10°	1547.2	1537.2	1508.7	1504.3	1495.9
12.5°	1525.8	1512.9	1474.3	1465.8	1450.1
15°	1500.1	1484.3	1435.9	1408.8	1394.6
17.5°	1470.1	1447.2	1387.2	1355.9	1333.0
20°	1435.9	1407.2	1335.9	1300.3	1268.8
22.5°	1398.8	1365.9	1283.0	1234.6	1213.3
25°	1361.6	1315.9	1221.7	1163.3	1141.7
27.5°	1317.5	1268.8	1164.6	1097.6	1064.7
30°	1270.3	1216.0	1101.8	1029.1	990.5
32.5°	1224.6	1158.9	1042.0	956.3	920.5
35°	1173.3	1100.4	974.9	884.9	853.4
37.5°	1123.3	1044.7	912.0	813.5	777.9
40°	1070.5	984.9	846.4	745.1	708.0
42.5°	1016.2	924.9	780.8	675.1	639.5
45°	959.2	863.5	713.7	612.3	578.0
47.5°	905.0	803.6	649.5	548.1	516.7
50°	845.0	743.6	586.6	488.1	458.2
52.5°	786.4	679.3	526.7	432.4	405.4
55°	729.3	618.0	463.8	378.3	351.2
57.5°	670.9	556.7	408.2	328.3	305.5
60°	610.8	496.7	349.6	276.9	254.1
62.5°	552.5	438.3	299.7	231.2	219.9
65°	492.5	376.7	248.3	199.9	195.5
67.5°	435.4	319.7	199.9	175.5	171.2
70°	375.4	264.1	165.5	151.3	145.5
72.5°	318.3	212.6	138.4	127.1	124.2
75°	262.5	162.7	114.2	104.2	102.8
77.5°	207.0	115.5	90.0	84.2	81.3
80°	155.5	82.8	68.4	62.9	62.9
82.5°	108.5	55.7	47.1	44.2	44.2
85°	61.3	31.4	27.1	27.1	27.1
87.5°	22.9	11.4	11.4	10.0	10.0
90°	3.2	39.3	106.9	100.5	103.7
92.5°	67.6	91.7	94.9	98.3	98.3
95°	159.3	189.9	195.4	195.4	189.9
97.5°	265.2	293.6	305.7	305.7	305.7
100°	387.5	412.6	421.3	421.3	418.0
102.5°	516.3	534.8	546.8	550.2	546.8
105°	657.1	665.8	672.4	677.8	677.8
107.5°	796.8	809.9	809.9	812.0	796.8
110°	932.2	949.6	949.6	949.6	940.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1078.4	1097.0	1093.7	1085.0	1078.4
115°	1222.5	1240.0	1234.5	1231.2	1222.5
117.5°	1365.5	1389.5	1374.2	1365.5	1356.8
120°	1509.6	1533.6	1509.6	1509.6	1499.8
122.5°	1640.6	1671.1	1655.9	1647.1	1640.6
125°	1778.1	1805.3	1796.7	1786.8	1783.5
127.5°	1912.4	1946.2	1934.1	1921.1	1912.4
130°	2037.8	2077.1	2071.7	2065.1	2053.1
132.5°	2178.6	2209.3	2211.4	2196.1	2187.4
135°	2299.8	2333.7	2340.3	2336.9	2328.2
137.5°	2435.2	2462.5	2467.9	2465.7	2452.6
140°	2554.1	2581.4	2596.7	2596.7	2584.7
142.5°	2676.4	2703.7	2712.4	2715.7	2703.7
145°	2792.1	2813.9	2831.4	2834.7	2822.7
147.5°	2895.8	2923.1	2936.2	2941.7	2929.6
150°	3002.8	3021.3	3033.3	3043.2	3033.3
152.5°	3097.7	3116.2	3131.6	3143.6	3131.6
155°	3192.7	3201.4	3211.3	3226.5	3216.7
157.5°	3274.6	3281.1	3286.5	3308.4	3293.1
160°	3347.7	3354.3	3357.5	3376.1	3362.9
162.5°	3415.3	3415.3	3418.7	3439.4	3424.1
165°	3473.2	3470.0	3470.0	3491.7	3476.5
167.5°	3525.6	3515.8	3515.8	3537.6	3522.4
170°	3564.9	3556.1	3552.9	3574.7	3556.1
172.5°	3592.2	3583.4	3580.2	3602.0	3583.4
175°	3614.0	3605.3	3598.8	3620.5	3602.0
177.5°	3626.1	3617.3	3610.7	3629.3	3610.7
180°	3620.5	3620.5	3620.5	3620.5	3620.5

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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	6.08	6.74	7.24	7.88	9.48	2.04	2.70	3.20	3.84	5.44
	3H	7.74	8.33	8.91	9.48	11.09	3.21	3.80	4.37	4.95	6.56
	4H	8.34	8.90	9.51	10.05	11.66	3.65	4.21	4.82	5.36	6.97
	6H	8.75	9.26	9.93	10.41	12.04	3.96	4.47	5.13	5.62	7.25
	8H	8.87	9.36	10.05	10.52	12.14	4.04	4.53	5.22	5.69	7.31
	12H	8.92	9.39	10.11	10.54	12.19	4.07	4.54	5.26	5.70	7.34
4H	2H	6.08	6.64	7.26	7.78	9.40	2.62	3.17	3.79	4.32	5.94
	3H	7.89	8.35	9.07	9.52	11.15	3.94	4.41	5.12	5.58	7.21
	4H	8.57	9.00	9.75	10.16	11.80	4.48	4.91	5.66	6.07	7.71
	6H	9.07	9.43	10.26	10.62	12.26	4.88	5.25	6.07	6.43	8.07
	8H	9.24	9.58	10.43	10.75	12.41	5.00	5.34	6.19	6.52	8.17
	12H	9.32	9.63	10.53	10.82	12.48	5.06	5.37	6.26	6.55	8.21
8H	4H	8.52	8.86	9.71	10.04	11.69	4.74	5.08	5.93	6.26	7.91
	6H	9.08	9.36	10.28	10.57	12.22	5.25	5.53	6.45	6.75	8.40
	8H	9.29	9.53	10.50	10.73	12.40	5.43	5.68	6.64	6.87	8.54
	12H	9.42	9.63	10.63	10.82	12.53	5.54	5.75	6.75	6.94	8.65
12H	4H	8.47	8.78	9.67	9.96	11.62	4.74	5.05	5.94	6.23	7.89
	6H	9.05	9.29	10.26	10.49	12.16	5.29	5.54	6.50	6.73	8.40
	8H	9.26	9.47	10.47	10.67	12.37	5.49	5.71	6.71	6.90	8.60

END OF REPORT