

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: P920272

Luminaire Tested: DFN2DIP-SQ3F0-120D050US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920272
REPORT IS A COMBINATION OF REPORTS P899895 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D050US935-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

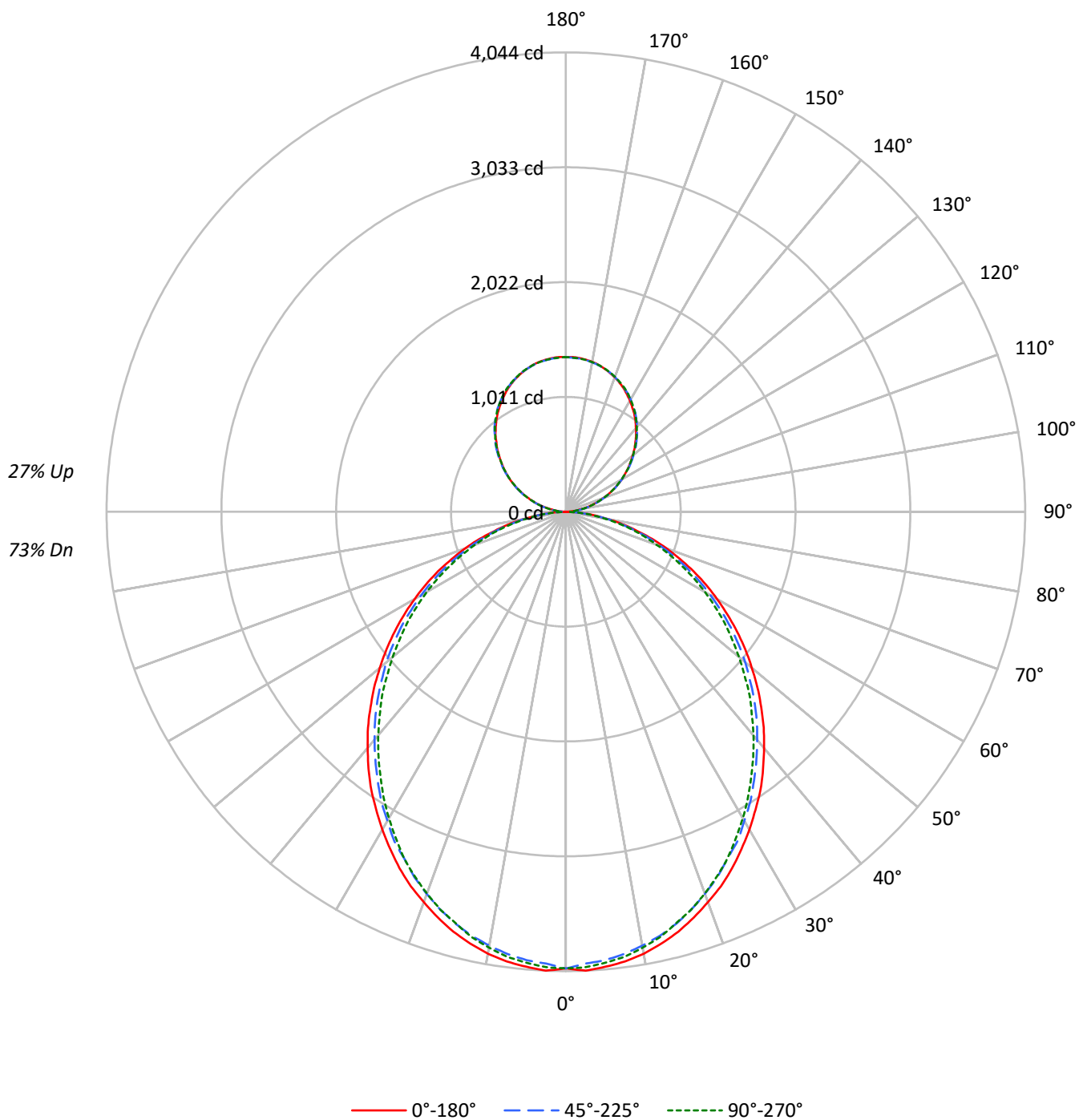
Lumens per Lamp: N/A
Luminaire Lumens: 14038.5 lumens
Efficiency: N/A
Efficacy: 86.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 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	113	113	113	113	107	107	107	107	96	96	96	86	86	86	77	77	77
1	103	98	94	91	97	94	90	87	84	82	79	76	74	72	68	67	65
2	94	86	80	74	89	82	76	71	74	69	66	67	63	60	60	57	55
3	86	76	68	62	81	72	65	60	65	60	55	59	55	51	53	50	47
4	78	67	59	53	74	64	57	51	58	52	47	53	48	44	48	44	40
5	72	60	51	45	68	57	50	44	52	46	41	47	42	38	43	39	35
6	67	54	45	39	63	52	44	38	47	41	36	43	38	33	39	35	31
7	62	49	41	35	58	47	39	34	43	36	32	39	34	30	36	31	28
8	57	45	36	31	54	43	35	30	39	33	28	36	30	27	33	28	25
9	53	41	33	28	51	39	32	27	36	30	25	33	28	24	30	26	22
10	50	38	30	25	48	36	29	24	33	27	23	31	25	22	28	24	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4606	4606	4606
5°	4611	4539	4571
10°	4570	4475	4508
15°	4500	4398	4410
20°	4407	4293	4309
25°	4313	4167	4193
30°	4197	4050	4046
35°	4087	3913	3891
40°	3951	3774	3743
45°	3816	3634	3591
50°	3668	3488	3416
55°	3513	3318	3254
60°	3337	3117	3069
65°	3145	2909	2851
70°	2900	2655	2615
75°	2562	2350	2396
80°	2154	1961	1980
85°	1516	1299	1296

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3816 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	378.4	2.7
10°-20°	1064.6	7.6
20°-30°	1564.6	11.1
30°-40°	1817.2	12.9
40°-50°	1814.9	12.9
50°-60°	1582.5	11.3
60°-70°	1169.9	8.3
70°-80°	661.9	4.7
80°-90°	178.6	1.3
90°-100°	84.2	0.6
100°-110°	267.7	1.9
110°-120°	458.1	3.3
120°-130°	602.5	4.3
130°-140°	676.3	4.8
140°-150°	663.1	4.7
150°-160°	556.3	4.0
160°-170°	368.9	2.6
170°-180°	128.9	0.9
0°-30°	3007.6	21.4
0°-40°	4824.8	34.4
0°-60°	8222.2	58.6
0°-90°	10232.5	72.9
90°-120°	810.0	5.8
90°-150°	2751.9	19.6
90°-180°	3806.0	27.1
0°-180°	14038.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4020	4020	4020	4020	4020	
5°	4020	4005	3962	3993	3986	382
15°	3827	3804	3754	3769	3750	1078
25°	3464	3433	3367	3375	3367	1594
35°	2988	2950	2888	2864	2845	1866
45°	2432	2405	2346	2304	2289	1877
55°	1840	1817	1771	1724	1705	1645
65°	1241	1218	1179	1144	1125	1227
75°	649	642	622	599	607	693
85°	158	155	151	139	135	177
90°	1	15	40	38	39	13
95°	60	72	73	73	72	67
105°	247	250	253	255	255	261
115°	460	466	464	463	460	455
125°	669	679	676	672	671	598
135°	865	878	880	879	876	669
145°	1050	1058	1065	1066	1061	656
155°	1201	1204	1208	1213	1210	553
165°	1306	1305	1305	1313	1307	368
175°	1359	1356	1353	1362	1354	129
180°	1362	1362	1362	1362	1362	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4020.3	4020.3	4020.3	4020.3	4020.3
2.5°	4043.6	4024.3	3981.7	4020.3	4012.9
5°	4020.3	4005.0	3962.4	3993.1	3985.7
7.5°	3993.1	3970.1	3927.5	3958.7	3950.9
10°	3950.9	3923.8	3877.5	3908.2	3896.8
12.5°	3892.7	3869.7	3823.3	3842.6	3834.8
15°	3827.0	3804.1	3753.6	3769.2	3749.9
17.5°	3745.9	3722.9	3672.4	3691.7	3672.4
20°	3656.8	3633.8	3579.8	3591.2	3576.1
22.5°	3568.2	3533.4	3482.9	3482.9	3475.2
25°	3463.6	3432.9	3367.3	3374.7	3367.3
27.5°	3347.6	3320.5	3270.5	3259.0	3239.8
30°	3231.9	3200.8	3142.9	3131.4	3115.9
32.5°	3108.0	3085.1	3023.1	2999.8	2984.2
35°	2988.3	2949.8	2887.8	2864.5	2845.2
37.5°	2852.9	2818.1	2756.1	2729.1	2709.8
40°	2714.0	2682.8	2620.8	2586.4	2570.8
42.5°	2578.6	2547.4	2485.9	2447.0	2424.0
45°	2431.7	2404.7	2346.4	2304.2	2288.6
47.5°	2288.6	2261.5	2199.6	2157.0	2134.0
50°	2137.7	2118.4	2064.2	2010.1	1990.8
52.5°	1990.8	1963.8	1913.7	1871.0	1844.0
55°	1840.3	1817.0	1770.6	1724.2	1704.9
57.5°	1689.4	1670.1	1619.6	1573.3	1557.7
60°	1538.4	1523.3	1469.1	1426.5	1415.0
62.5°	1391.6	1364.5	1326.0	1287.5	1271.9
65°	1241.1	1217.7	1179.1	1144.3	1125.1
67.5°	1086.5	1066.8	1032.3	1005.3	989.7
70°	943.3	927.7	892.9	865.8	850.7
72.5°	796.5	780.9	761.6	734.6	723.1
75°	649.3	641.9	622.2	599.3	607.0
77.5°	518.0	502.4	494.6	483.1	471.7
80°	386.8	382.6	374.9	363.4	355.6
82.5°	262.9	262.9	259.2	243.7	243.7
85°	158.3	154.6	150.9	139.1	135.3
87.5°	69.7	61.9	54.2	42.6	38.6
90°	1.2	14.8	40.2	37.8	39.0
92.5°	25.5	34.4	35.7	36.9	36.9
95°	59.9	71.5	73.4	73.4	71.5
97.5°	99.7	110.4	114.9	114.9	114.9
100°	145.7	155.2	158.4	158.4	157.2
102.5°	194.2	201.1	205.6	206.9	205.6
105°	247.1	250.4	252.9	254.9	254.9
107.5°	299.6	304.5	304.5	305.4	299.6
110°	350.5	357.1	357.1	357.1	353.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	405.5	412.5	411.3	408.0	405.5
115°	459.7	466.3	464.3	463.0	459.7
117.5°	513.5	522.5	516.8	513.5	510.2
120°	567.7	576.7	567.7	567.7	564.0
122.5°	616.9	628.4	622.7	619.4	616.9
125°	668.7	678.9	675.6	671.9	670.7
127.5°	719.1	731.8	727.4	722.4	719.1
130°	766.4	781.1	779.0	776.6	772.1
132.5°	819.3	830.8	831.6	825.9	822.6
135°	864.9	877.5	880.0	878.8	875.5
137.5°	915.8	926.0	928.1	927.2	922.3
140°	960.4	970.8	976.5	976.5	972.0
142.5°	1006.4	1016.8	1020.0	1021.2	1016.8
145°	1050.0	1058.2	1064.7	1066.0	1061.4
147.5°	1089.0	1099.2	1104.1	1106.2	1101.6
150°	1129.2	1136.2	1140.6	1144.4	1140.6
152.5°	1164.9	1171.9	1177.6	1182.2	1177.6
155°	1200.6	1203.8	1207.5	1213.3	1209.6
157.5°	1231.4	1233.8	1235.9	1244.1	1238.4
160°	1258.9	1261.4	1262.6	1269.5	1264.6
162.5°	1284.4	1284.4	1285.6	1293.4	1287.6
165°	1306.1	1304.8	1304.8	1313.1	1307.3
167.5°	1325.8	1322.1	1322.1	1330.3	1324.6
170°	1340.6	1337.3	1336.1	1344.3	1337.3
172.5°	1350.8	1347.5	1346.3	1354.5	1347.5
175°	1359.1	1355.7	1353.3	1361.5	1354.5
177.5°	1363.6	1360.3	1357.8	1364.8	1357.8
180°	1361.5	1361.5	1361.5	1361.5	1361.5

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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	14.43	15.55	15.16	16.30	17.20	13.99	15.10	14.72	15.85	16.76
	3H	16.11	17.11	16.85	17.87	18.80	15.62	16.62	16.36	17.38	18.31
	4H	16.70	17.65	17.47	18.42	19.36	16.21	17.15	16.97	17.93	18.87
	6H	17.11	17.98	17.89	18.77	19.72	16.61	17.48	17.39	18.26	19.22
	8H	17.22	18.05	18.01	18.85	19.81	16.72	17.55	17.51	18.35	19.31
	12H	17.28	18.07	18.07	18.86	19.85	16.77	17.56	17.56	18.35	19.34
4H	2H	14.92	15.86	15.69	16.64	17.58	14.56	15.51	15.33	16.28	17.23
	3H	16.80	17.59	17.58	18.40	19.36	16.39	17.18	17.17	17.99	18.95
	4H	17.52	18.24	18.32	19.05	20.04	17.10	17.82	17.89	18.62	19.61
	6H	18.05	18.67	18.86	19.50	20.50	17.62	18.24	18.43	19.07	20.07
	8H	18.20	18.78	19.02	19.61	20.62	17.76	18.34	18.58	19.17	20.18
	12H	18.28	18.81	19.12	19.66	20.67	17.83	18.36	18.67	19.21	20.22
8H	4H	17.74	18.32	18.55	19.14	20.15	17.36	17.94	18.17	18.77	19.78
	6H	18.37	18.85	19.22	19.72	20.73	17.99	18.47	18.83	19.34	20.35
	8H	18.59	19.02	19.45	19.88	20.91	18.20	18.63	19.05	19.49	20.52
	12H	18.73	19.11	19.59	19.96	21.05	18.32	18.70	19.18	19.55	20.64
12H	4H	17.73	18.25	18.57	19.10	20.12	17.36	17.89	18.20	18.74	19.75
	6H	18.40	18.83	19.26	19.70	20.72	18.03	18.46	18.88	19.32	20.35
	8H	18.65	19.03	19.51	19.89	20.97	18.27	18.65	19.13	19.50	20.59