

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: P913076

Luminaire Tested: DFN2DIP-4P2F0-040D020US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913076
REPORT IS A COMBINATION OF REPORTS P899016 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D020US927-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

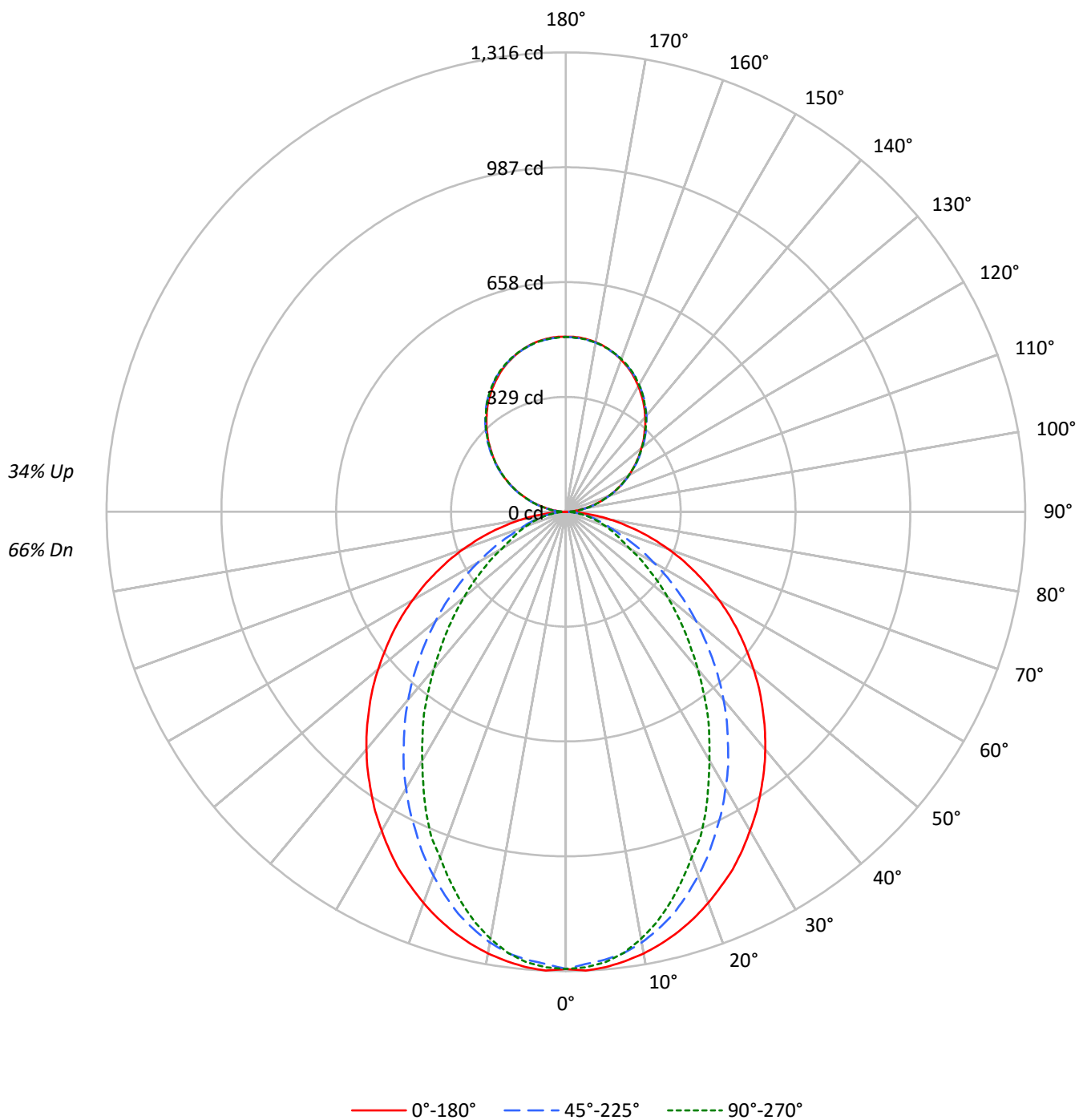
Lumens per Lamp: N/A
Luminaire Lumens: 4095.5 lumens
Efficiency: N/A
Efficacy: 73.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 56.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3279	3279	3279
5°	3278	3219	3243
10°	3239	3148	3132
15°	3188	3035	2964
20°	3122	2884	2759
25°	3055	2717	2562
30°	2967	2545	2314
35°	2881	2362	2096
40°	2793	2173	1847
45°	2691	1965	1622
50°	2585	1755	1402
55°	2473	1532	1191
60°	2344	1300	975
65°	2196	1066	871
70°	2015	847	781
75°	1787	731	700
80°	1462	591	591
85°	943	363	417

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2691 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.7	3.0
10°-20°	336.9	8.2
20°-30°	473.1	11.6
30°-40°	515.7	12.6
40°-50°	473.9	11.6
50°-60°	372.2	9.1
60°-70°	242.3	5.9
70°-80°	124.7	3.0
80°-90°	33.3	0.8
90°-100°	31.0	0.8
100°-110°	98.5	2.4
110°-120°	168.6	4.1
120°-130°	221.7	5.4
130°-140°	248.9	6.1
140°-150°	244.1	6.0
150°-160°	204.7	5.0
160°-170°	135.8	3.3
170°-180°	47.5	1.2
0°-30°	932.7	22.8
0°-40°	1448.4	35.4
0°-60°	2294.6	56.0
0°-90°	2694.8	65.8
90°-120°	298.1	7.3
90°-150°	1012.8	24.7
90°-180°	1401.0	34.2
0°-180°	4095.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1310	1310	1310	1310	1310	
5°	1310	1304	1288	1299	1296	124
15°	1246	1233	1192	1170	1158	351
25°	1131	1093	1014	966	948	520
35°	974	914	810	735	709	610
45°	796	717	593	508	480	615
55°	606	513	385	314	292	541
65°	409	313	206	166	162	405
75°	218	135	95	86	85	231
85°	51	26	22	22	22	58
90°	0	6	15	14	14	4
95°	22	26	27	27	26	25
105°	91	92	93	94	94	96
115°	169	172	171	170	169	167
125°	246	250	249	247	247	220
135°	318	323	324	323	322	246
145°	386	389	392	392	391	241
155°	442	443	444	447	445	203
165°	481	480	480	483	481	136
175°	500	499	498	501	498	48
180°	501	501	501	501	501	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1309.6	1309.6	1309.6	1309.6	1309.6
2.5°	1315.6	1309.6	1296.6	1308.5	1306.1
5°	1309.6	1303.7	1288.2	1298.9	1295.5
7.5°	1298.9	1291.9	1275.3	1279.9	1274.1
10°	1284.8	1276.4	1252.8	1249.1	1242.1
12.5°	1267.0	1256.3	1224.2	1217.2	1204.1
15°	1245.6	1232.6	1192.3	1169.8	1158.0
17.5°	1220.8	1201.7	1151.9	1125.9	1106.9
20°	1192.3	1168.5	1109.3	1079.7	1053.6
22.5°	1161.5	1134.2	1065.4	1025.2	1007.5
25°	1130.7	1092.7	1014.5	966.0	948.1
27.5°	1094.0	1053.6	967.1	911.4	884.1
30°	1054.9	1009.7	914.9	854.5	822.5
32.5°	1016.9	962.3	865.2	794.1	764.4
35°	974.3	913.8	809.5	734.8	708.7
37.5°	932.8	867.5	757.3	675.5	645.9
40°	888.9	817.8	702.8	618.7	587.9
42.5°	843.8	768.0	648.3	560.5	531.0
45°	796.5	717.0	592.6	508.4	480.0
47.5°	751.5	667.3	539.3	455.1	429.0
50°	701.6	617.5	487.1	405.3	380.5
52.5°	653.0	564.1	437.4	359.1	336.6
55°	605.6	513.2	385.2	314.1	291.6
57.5°	557.1	462.2	339.0	272.6	253.7
60°	507.2	412.4	290.3	230.0	211.0
62.5°	458.8	363.9	248.8	192.0	182.6
65°	408.9	312.8	206.2	166.0	162.3
67.5°	361.6	265.5	166.0	145.8	142.2
70°	311.7	219.3	137.4	125.6	120.8
72.5°	264.4	176.6	114.9	105.5	103.1
75°	218.0	135.1	94.8	86.5	85.4
77.5°	171.9	95.9	74.7	69.9	67.5
80°	129.1	68.8	56.8	52.2	52.2
82.5°	90.1	46.3	39.1	36.7	36.7
85°	50.9	26.1	22.5	22.5	22.5
87.5°	19.0	9.4	9.4	8.3	8.3
90°	0.5	5.5	14.8	13.9	14.3
92.5°	9.3	12.7	13.2	13.6	13.6
95°	22.0	26.3	27.0	27.0	26.3
97.5°	36.7	40.6	42.3	42.3	42.3
100°	53.6	57.1	58.3	58.3	57.8
102.5°	71.5	74.0	75.7	76.1	75.7
105°	90.9	92.1	93.1	93.8	93.8
107.5°	110.3	112.1	112.1	112.4	110.3
110°	129.0	131.4	131.4	131.4	130.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	149.2	151.8	151.4	150.1	149.2
115°	169.2	171.6	170.9	170.4	169.2
117.5°	189.0	192.3	190.2	189.0	187.7
120°	208.9	212.2	208.9	208.9	207.6
122.5°	227.0	231.2	229.2	228.0	227.0
125°	246.1	249.9	248.7	247.3	246.8
127.5°	264.7	269.3	267.7	265.9	264.7
130°	282.0	287.5	286.7	285.8	284.2
132.5°	301.5	305.8	306.0	304.0	302.7
135°	318.3	323.0	323.8	323.4	322.2
137.5°	337.0	340.8	341.6	341.3	339.4
140°	353.5	357.3	359.4	359.4	357.7
142.5°	370.4	374.1	375.4	375.8	374.1
145°	386.4	389.4	391.9	392.3	390.6
147.5°	400.8	404.6	406.4	407.1	405.4
150°	415.6	418.1	419.8	421.1	419.8
152.5°	428.7	431.3	433.4	435.1	433.4
155°	441.9	443.1	444.4	446.6	445.2
157.5°	453.2	454.1	454.9	457.9	455.7
160°	463.3	464.2	464.7	467.2	465.4
162.5°	472.7	472.7	473.1	476.0	473.9
165°	480.7	480.2	480.2	483.2	481.2
167.5°	487.9	486.6	486.6	489.6	487.5
170°	493.4	492.2	491.7	494.7	492.2
172.5°	497.2	495.9	495.5	498.5	495.9
175°	500.2	499.0	498.0	501.1	498.5
177.5°	501.8	500.7	499.7	502.2	499.7
180°	501.1	501.1	501.1	501.1	501.1

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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	12.50	13.48	13.31	14.31	15.34	8.46	9.44	9.28	10.27	11.30
	3H	14.17	15.04	14.99	15.88	16.94	9.64	10.51	10.47	11.36	12.41
	4H	14.77	15.59	15.61	16.44	17.51	10.08	10.91	10.93	11.76	12.83
	6H	15.18	15.94	16.03	16.79	17.87	10.39	11.15	11.25	12.01	13.09
	8H	15.30	16.02	16.16	16.89	17.98	10.48	11.20	11.34	12.07	13.16
	12H	15.35	16.04	16.23	16.91	18.02	10.51	11.20	11.39	12.07	13.18
4H	2H	12.53	13.35	13.38	14.20	15.27	9.06	9.89	9.91	10.74	11.80
	3H	14.35	15.03	15.21	15.91	17.00	10.40	11.09	11.26	11.97	13.05
	4H	15.03	15.65	15.90	16.53	17.64	10.94	11.56	11.81	12.44	13.55
	6H	15.53	16.06	16.42	16.97	18.08	11.34	11.88	12.23	12.78	13.90
	8H	15.69	16.19	16.58	17.09	18.22	11.46	11.96	12.35	12.86	13.99
	12H	15.78	16.23	16.69	17.15	18.28	11.52	11.97	12.43	12.89	14.02
8H	4H	15.00	15.50	15.89	16.40	17.53	11.21	11.71	12.10	12.61	13.74
	6H	15.55	15.96	16.46	16.90	18.03	11.71	12.12	12.63	13.06	14.19
	8H	15.75	16.11	16.68	17.05	18.19	11.88	12.25	12.81	13.18	14.33
	12H	15.88	16.20	16.81	17.13	18.32	11.99	12.32	12.92	13.24	14.44
12H	4H	14.96	15.41	15.87	16.33	17.46	11.22	11.67	12.13	12.59	13.72
	6H	15.52	15.89	16.45	16.82	17.96	11.75	12.12	12.68	13.05	14.20
	8H	15.73	16.05	16.66	16.98	18.17	11.95	12.27	12.88	13.20	14.39