

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: P913077

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

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913077
REPORT IS A COMBINATION OF REPORTS P900536 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D020US927-RLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

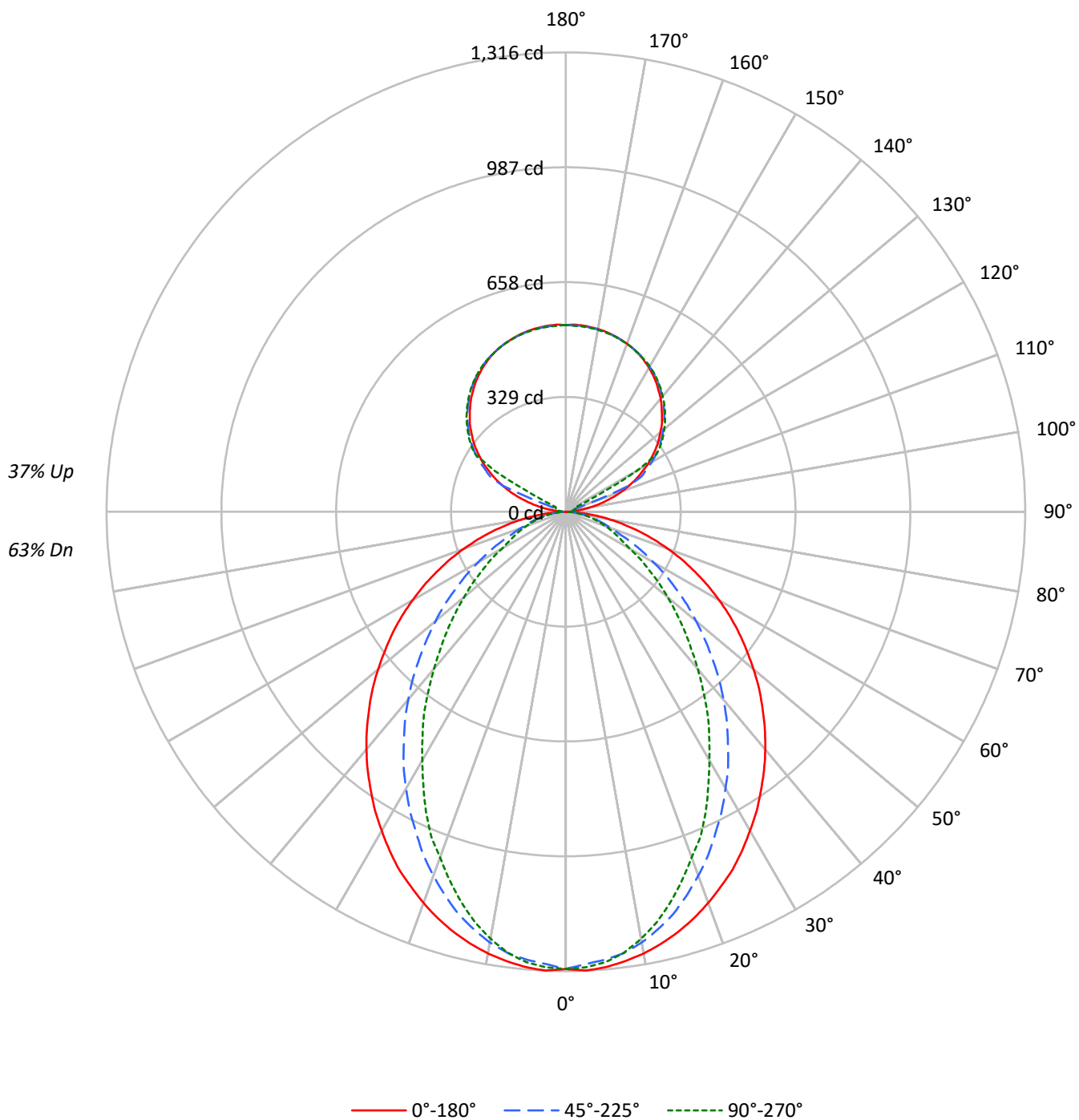
Lumens per Lamp: N/A
Luminaire Lumens: 4261.9 lumens
Efficiency: N/A
Efficacy: 76.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Direct

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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

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	2.9
10°-20°	336.9	7.9
20°-30°	473.1	11.1
30°-40°	515.7	12.1
40°-50°	473.9	11.1
50°-60°	372.2	8.7
60°-70°	242.3	5.7
70°-80°	124.7	2.9
80°-90°	32.8	0.8
90°-100°	17.6	0.4
100°-110°	65.7	1.5
110°-120°	174.3	4.1
120°-130°	289.1	6.8
130°-140°	307.1	7.2
140°-150°	285.4	6.7
150°-160°	229.5	5.4
160°-170°	147.9	3.5
170°-180°	50.9	1.2
0°-30°	932.7	21.9
0°-40°	1448.4	34.0
0°-60°	2294.6	53.8
0°-90°	2694.3	63.2
90°-120°	257.7	6.0
90°-150°	1139.3	26.7
90°-180°	1568.0	36.8
0°-180°	4261.9	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	5	8	10	10	4
95°	25	12	15	17	17	30
105°	118	129	24	28	29	126
115°	222	229	239	60	32	219
125°	315	320	327	330	331	281
135°	389	396	399	403	402	301
145°	452	451	458	460	458	282
155°	497	494	498	501	498	229
165°	524	522	523	526	523	148
175°	536	533	534	537	533	51
180°	535	535	535	535	535	

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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°	0.4	4.7	7.7	9.7	10.5
92.5°	9.7	8.2	9.3	10.1	10.5
95°	25.1	12.4	15.1	17.0	16.6
97.5°	45.2	13.5	19.7	20.9	21.3
100°	68.5	15.4	22.0	25.1	25.9
102.5°	94.0	93.2	22.8	27.1	28.3
105°	117.6	129.2	23.6	27.8	29.4
107.5°	145.1	154.7	24.4	28.6	30.2
110°	171.4	179.5	67.7	29.1	30.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	196.1	203.1	196.5	29.8	31.0
115°	222.4	229.0	238.8	59.6	31.8
117.5°	245.3	253.0	259.6	204.3	102.9
120°	270.8	276.6	283.6	288.3	236.0
122.5°	292.5	298.7	306.4	308.7	309.2
125°	314.6	319.6	326.9	329.6	330.8
127.5°	334.7	340.1	345.9	349.7	350.1
130°	353.6	359.8	364.1	368.4	368.0
132.5°	373.0	378.0	382.2	385.7	385.4
135°	389.3	395.5	398.9	402.8	402.0
137.5°	406.2	410.9	414.8	418.7	417.5
140°	422.9	426.0	430.2	433.7	431.8
142.5°	436.8	439.6	444.6	447.7	445.7
145°	451.5	451.1	457.7	460.4	458.5
147.5°	464.3	463.1	469.7	471.6	470.1
150°	476.7	474.0	480.1	482.4	480.5
152.5°	487.1	484.0	489.8	492.2	489.4
155°	497.2	493.7	498.4	500.7	497.6
157.5°	505.3	502.2	505.7	508.4	505.3
160°	512.3	509.9	512.3	514.6	511.9
162.5°	518.4	516.1	518.1	520.8	517.3
165°	523.9	521.6	522.7	525.5	522.7
167.5°	528.1	525.8	527.0	529.7	526.2
170°	531.6	529.3	530.0	532.7	529.3
172.5°	533.9	531.6	532.4	535.1	531.6
175°	535.8	533.1	533.9	536.6	532.7
177.5°	536.6	533.9	534.3	537.0	533.5
180°	534.7	534.7	534.7	534.7	534.7

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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	12.29	13.24	13.13	14.10	15.17	8.25	9.20	9.09	10.06	11.13
	3H	13.96	14.81	14.81	15.67	16.77	9.43	10.28	10.28	11.15	12.25
	4H	14.55	15.36	15.43	16.23	17.34	9.87	10.67	10.74	11.55	12.66
	6H	14.96	15.70	15.85	16.58	17.71	10.18	10.92	11.06	11.80	12.92
	8H	15.08	15.79	15.97	16.69	17.81	10.26	10.97	11.15	11.87	12.99
	12H	15.14	15.81	16.04	16.70	17.85	10.30	10.97	11.20	11.86	13.01
4H	2H	12.32	13.12	13.19	14.00	15.11	8.85	9.65	9.73	10.53	11.64
	3H	14.13	14.80	15.02	15.71	16.83	10.19	10.85	11.07	11.76	12.89
	4H	14.81	15.42	15.71	16.32	17.47	10.72	11.33	11.62	12.23	13.38
	6H	15.31	15.83	16.22	16.76	17.91	11.12	11.65	12.04	12.57	13.73
	8H	15.48	15.96	16.39	16.89	18.05	11.24	11.73	12.16	12.65	13.82
	12H	15.56	16.00	16.50	16.94	18.11	11.30	11.74	12.24	12.68	13.85
8H	4H	14.78	15.27	15.70	16.19	17.36	11.00	11.48	11.91	12.41	13.57
	6H	15.33	15.73	16.27	16.70	17.86	11.49	11.89	12.43	12.86	14.02
	8H	15.53	15.89	16.48	16.84	18.03	11.67	12.02	12.62	12.98	14.16
	12H	15.66	15.97	16.61	16.92	18.15	11.77	12.09	12.73	13.03	14.27
12H	4H	14.74	15.18	15.67	16.12	17.29	11.00	11.44	11.94	12.38	13.55
	6H	15.30	15.66	16.25	16.61	17.80	11.53	11.89	12.49	12.85	14.03
	8H	15.51	15.83	16.47	16.77	18.01	11.73	12.05	12.69	12.99	14.23