

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: P921284

Luminaire Tested: DFN2DIP-4P3F0-020D050US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921284
REPORT IS A COMBINATION OF REPORTS P899060 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D050US940-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

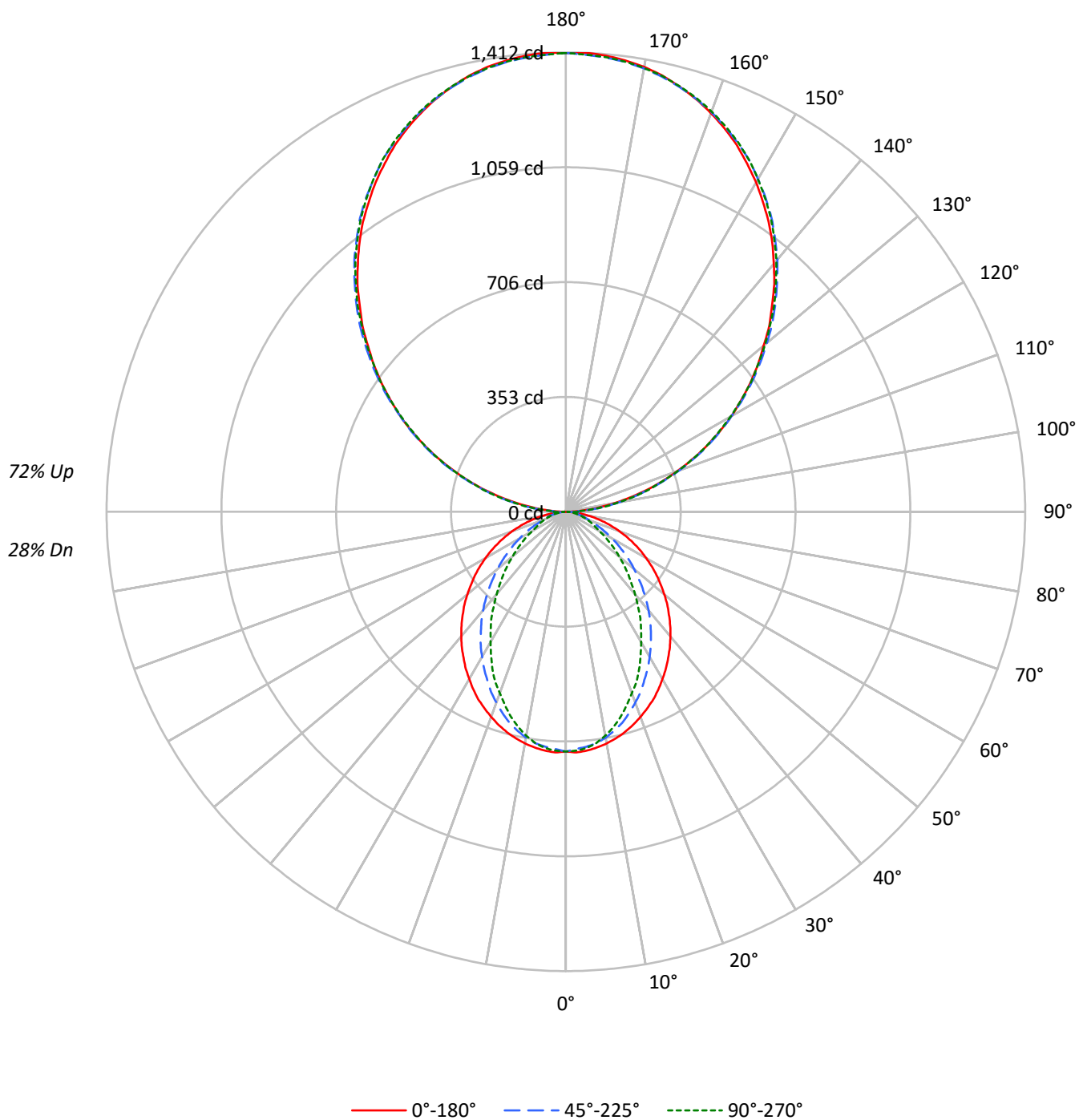
Lumens per Lamp: N/A
Luminaire Lumens: 5461.7 lumens
Efficiency: N/A
Efficacy: 101.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 53.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P921284

CATALOG NUMBER: DFN2DIP-4P3F0-020D050US940-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P921284

CATALOG NUMBER: DFN2DIP-4P3F0-020D050US940-RLLFLL

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	50	30	10
RCR																				
0	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	36	36	28
1	93	89	85	82	83	80	77	74	62	60	59	47	45	44	32	31	31	31	31	24
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	28	27	26	26	26	20
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	25	24	23	23	23	18
4	71	61	53	48	63	55	48	44	43	39	35	33	30	27	23	21	20	20	20	15
5	65	54	47	41	58	49	42	37	39	34	31	29	26	24	21	19	17	17	17	14
6	60	49	41	35	54	44	37	32	35	30	27	27	23	21	19	17	15	15	15	12
7	55	44	36	31	50	40	33	28	32	27	23	24	21	19	17	15	14	14	14	11
8	51	40	32	27	46	36	30	25	29	24	21	22	19	16	16	14	12	12	12	10
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11	11	11	9
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10	10	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	840	840	840
5°	841	826	832
10°	832	809	804
15°	820	782	762
20°	804	745	711
25°	788	703	661
30°	767	660	598
35°	746	614	543
40°	724	567	479
45°	700	514	422
50°	674	461	366
55°	647	404	312
60°	616	345	256
65°	580	285	230
70°	536	229	208
75°	482	200	189
80°	403	167	162
85°	273	109	121

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1415 cd/sqm

TEST NUMBER: P921284

CATALOG NUMBER: DFN2DIP-4P3F0-020D050US940-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.1	1.3
10°-20°	189.6	3.5
20°-30°	266.3	4.9
30°-40°	290.2	5.3
40°-50°	266.8	4.9
50°-60°	209.5	3.8
60°-70°	136.4	2.5
70°-80°	70.2	1.3
80°-90°	21.9	0.4
90°-100°	87.3	1.6
100°-110°	277.2	5.1
110°-120°	474.5	8.7
120°-130°	624.0	11.4
130°-140°	700.4	12.8
140°-150°	686.8	12.6
150°-160°	576.1	10.5
160°-170°	382.1	7.0
170°-180°	133.5	2.4
0°-30°	525.0	9.6
0°-40°	815.2	14.9
0°-60°	1291.4	23.6
0°-90°	1519.9	27.8
90°-120°	838.9	15.4
90°-150°	2850.1	52.2
90°-180°	3942.0	72.2
0°-180°	5461.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	737	737	737	737	737	
5°	737	734	725	731	729	70
15°	701	694	671	658	652	198
25°	636	615	571	544	534	293
35°	548	514	456	414	399	343
45°	448	404	334	286	270	346
55°	341	289	217	177	164	305
65°	230	176	116	94	91	228
75°	123	76	53	49	48	130
85°	29	15	13	13	13	33
90°	1	15	42	39	40	5
95°	62	74	76	76	74	69
105°	256	259	262	264	264	270
115°	476	483	481	480	476	471
125°	692	703	700	696	695	619
135°	896	909	911	910	907	692
145°	1087	1096	1103	1104	1099	679
155°	1243	1247	1251	1257	1253	572
165°	1353	1351	1351	1360	1354	382
175°	1408	1404	1402	1410	1403	134
180°	1410	1410	1410	1410	1410	

TEST NUMBER: P921284

CATALOG NUMBER: DFN2DIP-4P3F0-020D050US940-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	737.1	737.1	737.1	737.1	737.1
2.5°	740.4	737.1	729.7	736.5	735.1
5°	737.1	733.8	725.0	731.1	729.1
7.5°	731.1	727.1	717.7	720.4	717.0
10°	723.1	718.4	705.1	703.0	699.1
12.5°	713.1	707.0	689.0	685.1	677.7
15°	701.1	693.7	671.0	658.3	651.8
17.5°	687.1	676.4	648.4	633.6	623.0
20°	671.0	657.6	624.4	607.7	593.0
22.5°	653.7	638.4	599.7	577.0	567.0
25°	636.4	615.0	571.0	543.7	533.6
27.5°	615.7	593.0	544.3	512.9	497.6
30°	593.7	568.3	515.0	481.0	462.9
32.5°	572.3	541.6	487.0	446.9	430.3
35°	548.3	514.3	455.7	413.6	398.9
37.5°	524.9	488.2	426.2	380.2	363.6
40°	500.2	460.3	395.6	348.2	330.8
42.5°	474.9	432.3	364.9	315.5	298.9
45°	448.3	403.5	333.6	286.1	270.1
47.5°	422.9	375.6	303.5	256.1	241.5
50°	394.9	347.6	274.2	228.1	214.2
52.5°	367.5	317.4	246.1	202.2	189.5
55°	340.8	288.8	216.8	176.8	164.1
57.5°	313.5	260.1	190.8	153.5	142.8
60°	285.5	232.1	163.5	129.5	118.8
62.5°	258.2	204.8	140.1	108.1	102.7
65°	230.2	176.1	116.1	93.5	91.4
67.5°	203.5	149.4	93.5	82.0	80.1
70°	175.4	123.4	77.3	70.7	68.0
72.5°	148.7	99.3	64.6	59.4	58.1
75°	122.7	76.0	53.3	48.7	48.1
77.5°	96.8	54.0	42.0	39.3	38.0
80°	72.7	38.7	32.0	29.3	29.3
82.5°	50.6	26.0	22.0	20.7	20.7
85°	28.6	14.6	12.7	12.7	12.7
87.5°	10.7	5.4	5.4	4.6	4.6
90°	1.2	15.3	41.6	39.1	40.4
92.5°	26.4	35.7	37.0	38.3	38.3
95°	62.1	74.0	76.1	76.1	74.0
97.5°	103.3	114.3	119.0	119.0	119.0
100°	150.9	160.7	164.1	164.1	162.8
102.5°	201.1	208.3	212.9	214.3	212.9
105°	255.9	259.3	261.9	263.9	263.9
107.5°	310.3	315.4	315.4	316.3	310.3
110°	363.0	369.9	369.9	369.9	366.4

TEST NUMBER: P921284

CATALOG NUMBER: DFN2DIP-4P3F0-020D050US940-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	420.0	427.2	426.0	422.6	420.0
115°	476.1	483.0	480.8	479.6	476.1
117.5°	531.8	541.2	535.2	531.8	528.4
120°	587.9	597.3	587.9	587.9	584.1
122.5°	638.9	650.9	644.9	641.5	638.9
125°	692.5	703.1	699.7	695.9	694.6
127.5°	744.8	758.0	753.3	748.1	744.8
130°	793.7	809.0	806.8	804.3	799.6
132.5°	848.6	860.4	861.3	855.3	851.9
135°	895.7	908.8	911.4	910.2	906.8
137.5°	948.4	959.0	961.2	960.3	955.2
140°	994.7	1005.4	1011.3	1011.3	1006.7
142.5°	1042.3	1053.0	1056.4	1057.7	1053.0
145°	1087.4	1095.9	1102.7	1104.0	1099.3
147.5°	1127.8	1138.4	1143.5	1145.7	1140.9
150°	1169.5	1176.7	1181.3	1185.2	1181.3
152.5°	1206.5	1213.7	1219.6	1224.3	1219.6
155°	1243.4	1246.8	1250.6	1256.6	1252.8
157.5°	1275.3	1277.8	1280.0	1288.5	1282.5
160°	1303.8	1306.4	1307.6	1314.8	1309.7
162.5°	1330.2	1330.2	1331.4	1339.5	1333.6
165°	1352.7	1351.4	1351.4	1359.9	1354.0
167.5°	1373.1	1369.2	1369.2	1377.8	1371.8
170°	1388.4	1385.0	1383.8	1392.2	1385.0
172.5°	1399.0	1395.6	1394.4	1402.8	1395.6
175°	1407.6	1404.1	1401.6	1410.1	1402.8
177.5°	1412.2	1408.8	1406.2	1413.5	1406.2
180°	1410.1	1410.1	1410.1	1410.1	1410.1

TEST NUMBER: P921284

CATALOG NUMBER: DFN2DIP-4P3F0-020D050US940-RLLFLL

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	3.96	4.64	5.09	5.76	7.32	0.00	0.61	1.06	1.72	3.28
	3H	5.63	6.23	6.76	7.36	8.93	1.10	1.70	2.24	2.83	4.41
	4H	6.22	6.80	7.37	7.93	9.51	1.54	2.11	2.69	3.24	4.82
	6H	6.63	7.16	7.79	8.29	9.88	1.84	2.37	3.00	3.50	5.09
	8H	6.75	7.26	7.91	8.40	9.98	1.93	2.43	3.09	3.57	5.16
	12H	6.81	7.28	7.97	8.42	10.03	1.96	2.44	3.12	3.58	5.18
4H	2H	3.96	4.54	5.12	5.66	7.24	0.50	1.08	1.66	2.21	3.78
	3H	5.77	6.25	6.93	7.40	8.99	1.83	2.31	2.99	3.46	5.05
	4H	6.45	6.89	7.62	8.04	9.65	2.37	2.81	3.53	3.95	5.56
	6H	6.96	7.33	8.12	8.50	10.10	2.77	3.15	3.94	4.31	5.91
	8H	7.13	7.48	8.29	8.63	10.25	2.89	3.24	4.06	4.40	6.02
	12H	7.21	7.53	8.39	8.70	10.32	2.95	3.26	4.13	4.43	6.05
8H	4H	6.41	6.76	7.58	7.92	9.53	2.63	2.98	3.80	4.14	5.76
	6H	6.96	7.25	8.15	8.45	10.07	3.13	3.42	4.32	4.62	6.24
	8H	7.18	7.43	8.37	8.61	10.24	3.32	3.57	4.51	4.75	6.38
	12H	7.30	7.53	8.50	8.70	10.37	3.43	3.65	4.62	4.82	6.49
12H	4H	6.35	6.67	7.54	7.84	9.46	2.63	2.95	3.81	4.12	5.74
	6H	6.94	7.19	8.13	8.37	10.00	3.18	3.43	4.37	4.61	6.25
	8H	7.15	7.37	8.34	8.54	10.21	3.38	3.60	4.58	4.78	6.44