

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: P913780

Luminaire Tested: DFN2DIP-PN2F0-030D020US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913780
REPORT IS A COMBINATION OF REPORTS P899463 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-030D020US927-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

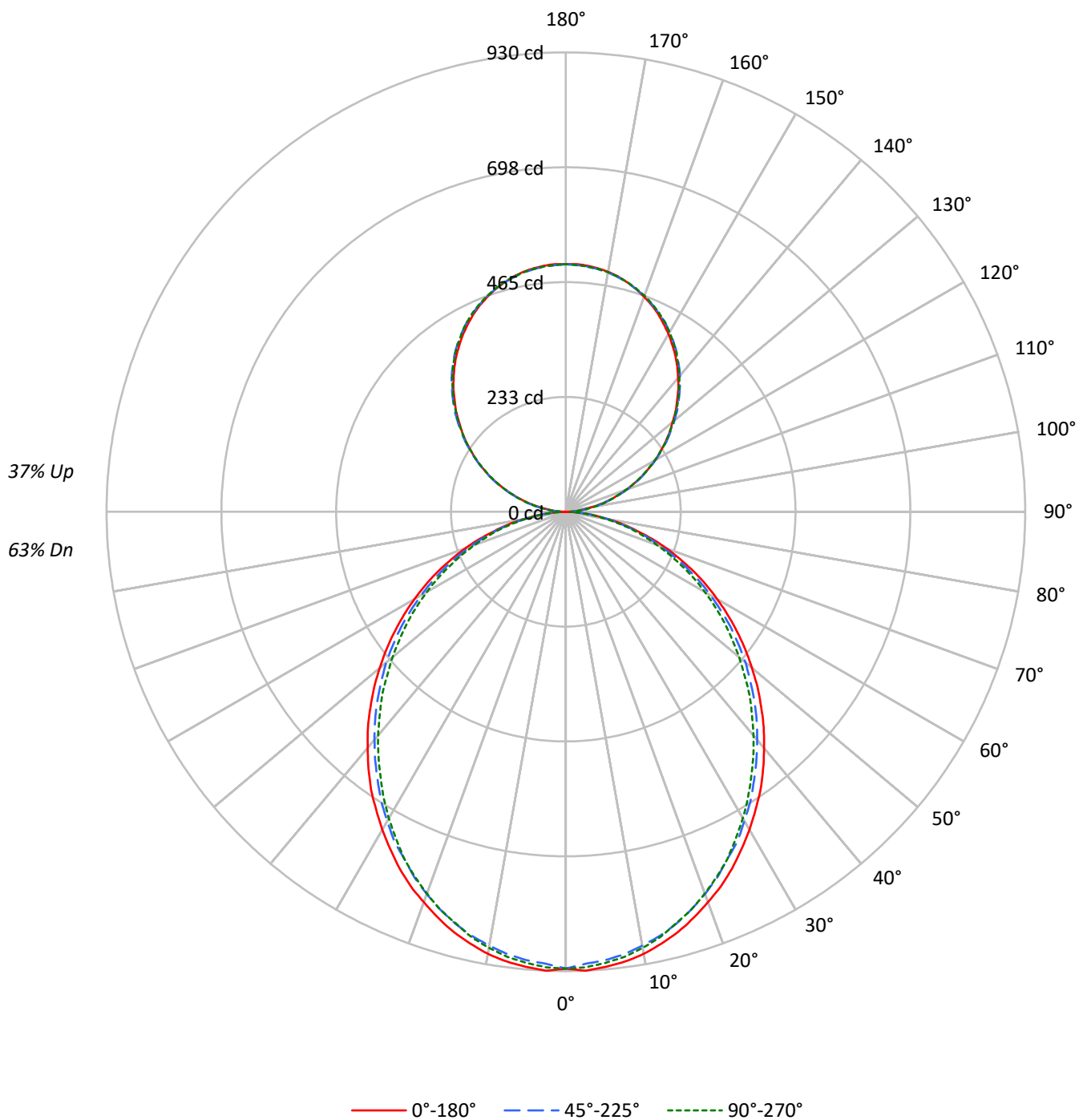
Lumens per Lamp: N/A
Luminaire Lumens: 3754.9 lumens
Efficiency: N/A
Efficacy: 85.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 43.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P913780

CATALOG NUMBER: DFN2DIP-PN2F0-030D020US927-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P913780

CATALOG NUMBER: DFN2DIP-PN2F0-030D020US927-FLLFL

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	90	90	90	79	79	79	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	66	60	59	57
2	92	84	78	72	86	79	73	69	70	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	58	61	56	52	54	50	46	47	44	41
4	77	66	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	38	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2003	2003	2003
5°	2003	1971	1985
10°	1983	1940	1956
15°	1951	1904	1910
20°	1908	1855	1865
25°	1866	1798	1812
30°	1813	1744	1746
35°	1763	1681	1676
40°	1702	1618	1610
45°	1642	1554	1541
50°	1575	1487	1463
55°	1504	1410	1390
60°	1425	1319	1306
65°	1338	1223	1207
70°	1227	1108	1100
75°	1074	968	998
80°	889	791	809
85°	603	500	507

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1642 cd/sqm

TEST NUMBER: P913780

CATALOG NUMBER: DFN2DIP-PN2F0-030D020US927-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.0	2.3
10°-20°	244.9	6.5
20°-30°	359.9	9.6
30°-40°	418.0	11.1
40°-50°	417.5	11.1
50°-60°	364.0	9.7
60°-70°	269.1	7.2
70°-80°	152.3	4.1
80°-90°	41.6	1.1
90°-100°	31.0	0.8
100°-110°	98.5	2.6
110°-120°	168.6	4.5
120°-130°	221.7	5.9
130°-140°	248.9	6.6
140°-150°	244.1	6.5
150°-160°	204.7	5.5
160°-170°	135.8	3.6
170°-180°	47.5	1.3
0°-30°	691.8	18.4
0°-40°	1109.8	29.6
0°-60°	1891.3	50.4
0°-90°	2354.2	62.7
90°-120°	298.1	7.9
90°-150°	1012.8	27.0
90°-180°	1401.0	37.3
0°-180°	3754.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	925	925	925	925	925	
5°	925	921	911	918	917	88
15°	880	875	863	867	862	248
25°	797	790	774	776	774	367
35°	687	678	664	659	654	429
45°	559	553	540	530	526	432
55°	423	418	407	397	392	378
65°	286	280	271	263	259	282
75°	149	148	143	138	140	159
85°	36	36	35	32	31	41
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	

TEST NUMBER: P913780

CATALOG NUMBER: DFN2DIP-PN2F0-030D020US927-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	924.7	924.7	924.7	924.7	924.7
2.5°	930.1	925.7	915.8	924.7	923.0
5°	924.7	921.2	911.4	918.5	916.8
7.5°	918.5	913.2	903.4	910.6	908.8
10°	908.8	902.5	891.9	899.0	896.4
12.5°	895.4	890.1	879.5	883.8	882.1
15°	880.3	875.0	863.4	867.0	862.5
17.5°	861.6	856.3	844.7	849.1	844.7
20°	841.1	835.8	823.4	826.0	822.5
22.5°	820.8	812.8	801.1	801.1	799.3
25°	796.7	789.6	774.5	776.3	774.5
27.5°	770.0	763.7	752.3	749.6	745.2
30°	743.4	736.3	722.9	720.3	716.7
32.5°	714.9	709.6	695.4	690.0	686.4
35°	687.4	678.5	664.2	658.9	654.4
37.5°	656.2	648.2	634.0	627.7	623.3
40°	624.2	617.1	602.8	594.9	591.4
42.5°	593.1	586.0	571.8	562.8	557.5
45°	559.4	553.1	539.7	530.0	526.4
47.5°	526.4	520.2	506.0	496.1	490.8
50°	491.7	487.3	474.8	462.4	458.0
52.5°	458.0	451.7	440.2	430.4	424.1
55°	423.3	418.0	407.3	396.6	392.2
57.5°	388.6	384.1	372.6	361.9	358.3
60°	353.9	350.4	337.9	328.1	325.5
62.5°	320.1	313.9	305.0	296.1	292.6
65°	285.5	280.1	271.2	263.2	258.8
67.5°	249.9	245.4	237.4	231.2	227.7
70°	217.0	213.4	205.4	199.2	195.7
72.5°	183.2	179.6	175.2	169.0	166.4
75°	149.3	147.7	143.1	137.8	139.7
77.5°	119.1	115.6	113.8	111.1	108.5
80°	89.0	88.0	86.2	83.6	81.8
82.5°	60.4	60.4	59.7	56.0	56.0
85°	36.4	35.6	34.7	32.0	31.1
87.5°	16.0	14.3	12.4	9.8	8.9
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



TEST NUMBER: P913780

CATALOG NUMBER: DFN2DIP-PN2F0-030D020US927-FLLFLL

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	10.66	11.65	11.50	12.51	13.59	10.23	11.21	11.07	12.08	13.15
	3H	12.31	13.20	13.16	14.07	15.18	11.83	12.72	12.69	13.59	14.70
	4H	12.89	13.73	13.76	14.61	15.72	12.41	13.25	13.28	14.13	15.24
	6H	13.28	14.06	14.16	14.94	16.07	12.80	13.57	13.68	14.46	15.58
	8H	13.38	14.12	14.27	15.02	16.15	12.90	13.63	13.79	14.54	15.67
	12H	13.43	14.13	14.32	15.03	16.18	12.94	13.64	13.83	14.54	15.69
4H	2H	11.13	11.97	12.00	12.85	13.96	10.78	11.62	11.65	12.50	13.61
	3H	12.98	13.68	13.87	14.59	15.72	12.58	13.28	13.47	14.19	15.32
	4H	13.69	14.32	14.58	15.23	16.39	13.27	13.91	14.17	14.82	15.97
	6H	14.19	14.74	15.10	15.67	16.83	13.77	14.32	14.68	15.25	16.41
	8H	14.33	14.85	15.25	15.77	16.94	13.91	14.42	14.82	15.35	16.52
	12H	14.40	14.87	15.33	15.81	16.99	13.97	14.43	14.90	15.38	16.55
8H	4H	13.88	14.40	14.80	15.32	16.49	13.51	14.03	14.43	14.95	16.13
	6H	14.49	14.92	15.43	15.89	17.06	14.12	14.55	15.06	15.51	16.69
	8H	14.70	15.08	15.65	16.04	17.23	14.32	14.70	15.27	15.66	16.85
	12H	14.83	15.16	15.78	16.11	17.35	14.43	14.76	15.38	15.71	16.95
12H	4H	13.87	14.34	14.80	15.28	16.46	13.51	13.98	14.44	14.92	16.10
	6H	14.52	14.90	15.47	15.86	17.04	14.16	14.54	15.11	15.49	16.68
	8H	14.75	15.09	15.71	16.04	17.27	14.38	14.72	15.34	15.67	16.90