

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: P921688

Luminaire Tested: DFN2DIP-HX3F0-060D030US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921688
REPORT IS A COMBINATION OF REPORTS P899208 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D030US940-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

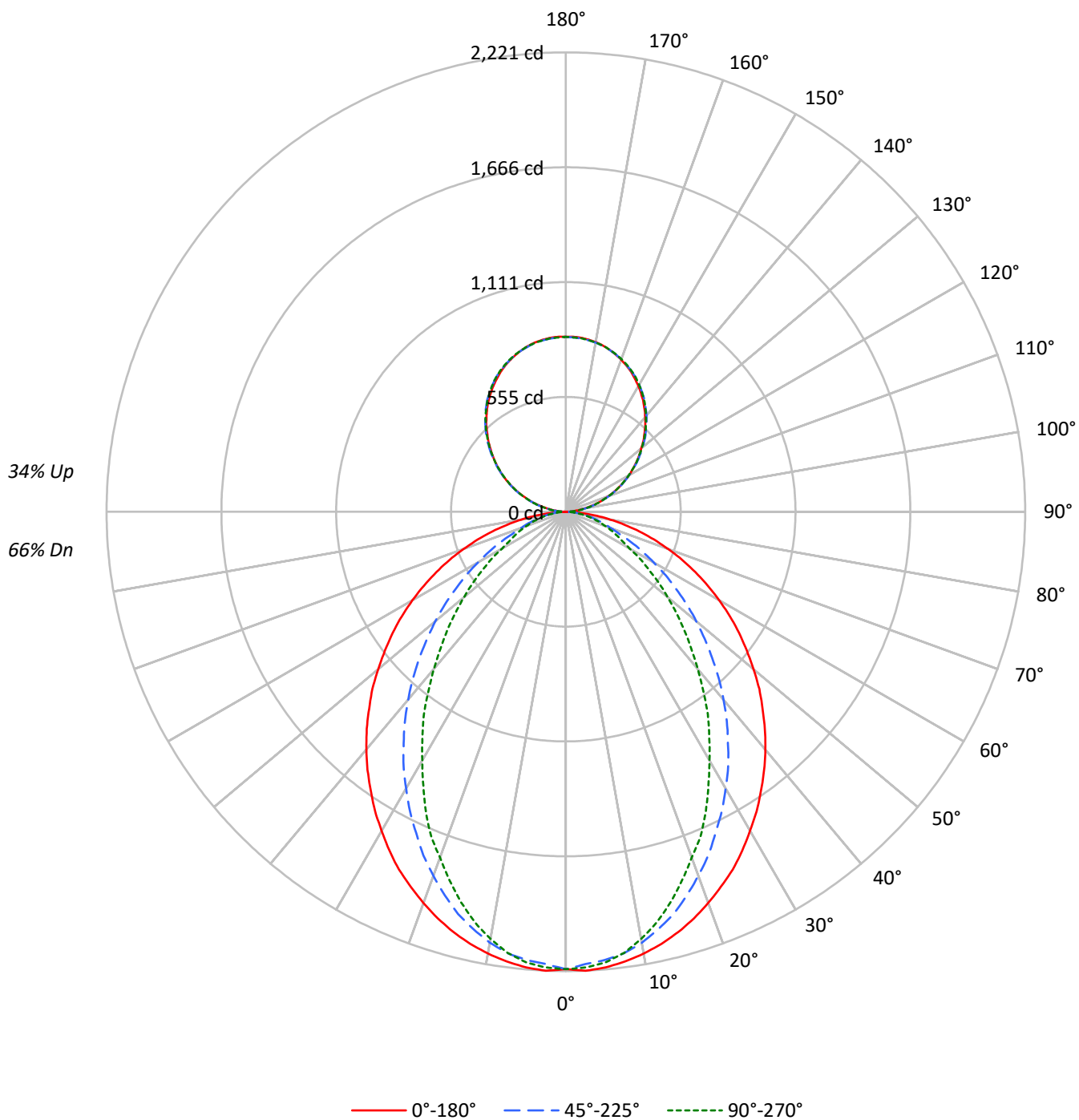
Lumens per Lamp: N/A
Luminaire Lumens: 6915.2 lumens
Efficiency: N/A
Efficacy: 86.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 79.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P921688

CATALOG NUMBER: DFN2DIP-HX3F0-060D030US940-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P921688

CATALOG NUMBER: DFN2DIP-HX3F0-060D030US940-RLLFLL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0			
RCR																					
0	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71	66			
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61	57			
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52	49			
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45	42			
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40	36			
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35	32			
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31	29			
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28	26			
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25	23			
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23	21			
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21	19			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2561	2561	2561
5°	2564	2519	2536
10°	2538	2468	2452
15°	2502	2384	2323
20°	2454	2270	2165
25°	2406	2143	2013
30°	2341	2012	1820
35°	2277	1872	1651
40°	2213	1727	1458
45°	2138	1566	1282
50°	2060	1404	1111
55°	1979	1231	947
60°	1885	1051	778
65°	1776	868	698
70°	1645	697	630
75°	1479	611	570
80°	1240	506	490
85°	847	330	360

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2138 cd/sqm

TEST NUMBER: P921688

CATALOG NUMBER: DFN2DIP-HX3F0-060D030US940-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.2	3.0
10°-20°	568.9	8.2
20°-30°	798.7	11.6
30°-40°	870.7	12.6
40°-50°	800.3	11.6
50°-60°	628.5	9.1
60°-70°	409.1	5.9
70°-80°	210.6	3.0
80°-90°	56.2	0.8
90°-100°	52.3	0.8
100°-110°	166.3	2.4
110°-120°	284.7	4.1
120°-130°	374.4	5.4
130°-140°	420.2	6.1
140°-150°	412.1	6.0
150°-160°	345.7	5.0
160°-170°	229.2	3.3
170°-180°	80.1	1.2
0°-30°	1574.9	22.8
0°-40°	2445.6	35.4
0°-60°	3874.3	56.0
0°-90°	4550.1	65.8
90°-120°	503.4	7.3
90°-150°	1710.0	24.7
90°-180°	2365.0	34.2
0°-180°	6915.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2211	2211	2211	2211	2211	
5°	2211	2201	2175	2193	2187	210
15°	2103	2081	2013	1975	1955	593
25°	1909	1845	1713	1631	1601	878
35°	1645	1543	1367	1241	1197	1030
45°	1345	1211	1001	858	810	1039
55°	1022	866	650	530	492	914
65°	690	528	348	280	274	685
75°	368	228	160	146	144	389
85°	86	44	38	38	38	99
90°	1	9	25	24	24	7
95°	37	44	46	46	44	41
105°	154	156	157	158	158	162
115°	286	290	288	288	286	283
125°	416	422	420	418	417	371
135°	537	545	547	546	544	415
145°	652	658	662	662	660	408
155°	746	748	750	754	752	343
165°	812	811	811	816	812	229
175°	844	842	841	846	842	80
180°	846	846	846	846	846	

TEST NUMBER: P921688

CATALOG NUMBER: DFN2DIP-HX3F0-060D030US940-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2211.3	2211.3	2211.3	2211.3	2211.3
2.5°	2221.3	2211.3	2189.1	2209.3	2205.3
5°	2211.3	2201.3	2175.1	2193.3	2187.3
7.5°	2193.3	2181.3	2153.3	2161.1	2151.2
10°	2169.2	2155.2	2115.3	2109.2	2097.2
12.5°	2139.3	2121.2	2067.1	2055.2	2033.1
15°	2103.2	2081.1	2013.1	1975.1	1955.2
17.5°	2061.2	2029.1	1945.0	1901.0	1869.0
20°	2013.1	1973.0	1873.0	1823.1	1779.0
22.5°	1961.1	1915.0	1798.9	1731.0	1701.0
25°	1909.2	1845.0	1713.0	1631.0	1600.9
27.5°	1847.2	1779.0	1632.9	1538.8	1492.8
30°	1781.1	1704.9	1544.8	1442.9	1388.7
32.5°	1717.0	1624.9	1461.0	1340.8	1290.7
35°	1645.0	1542.9	1366.9	1240.7	1196.6
37.5°	1574.9	1464.7	1278.8	1140.6	1090.7
40°	1500.8	1380.9	1186.6	1044.5	992.6
42.5°	1424.9	1296.8	1094.7	946.5	896.6
45°	1344.8	1210.6	1000.7	858.4	810.4
47.5°	1268.8	1126.8	910.6	768.4	724.4
50°	1184.7	1042.7	822.5	684.3	642.5
52.5°	1102.5	952.4	738.4	606.4	568.4
55°	1022.5	866.5	650.3	530.4	492.3
57.5°	940.6	780.4	572.4	460.3	428.2
60°	856.5	696.4	490.3	388.3	356.2
62.5°	774.5	614.5	420.2	324.2	308.3
65°	690.5	528.2	348.2	280.3	274.1
67.5°	610.4	448.2	280.3	246.1	240.1
70°	526.3	370.2	232.0	212.1	204.0
72.5°	446.3	298.1	194.0	178.2	174.1
75°	368.2	228.0	160.1	146.1	144.2
77.5°	290.3	162.0	126.1	118.1	114.0
80°	218.0	116.1	95.9	88.1	88.1
82.5°	152.0	78.1	66.0	62.0	62.0
85°	86.0	44.0	38.0	38.0	38.0
87.5°	32.1	16.0	16.0	14.0	14.0
90°	0.8	9.2	25.0	23.5	24.3
92.5°	15.8	21.4	22.2	22.9	22.9
95°	37.3	44.4	45.7	45.7	44.4
97.5°	62.0	68.6	71.4	71.4	71.4
100°	90.5	96.4	98.4	98.4	97.7
102.5°	120.6	125.0	127.8	128.6	127.8
105°	153.6	155.6	157.1	158.4	158.4
107.5°	186.2	189.2	189.2	189.8	186.2
110°	217.8	221.9	221.9	221.9	219.9

TEST NUMBER: P921688

CATALOG NUMBER: DFN2DIP-HX3F0-060D030US940-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	252.0	256.4	255.6	253.5	252.0
115°	285.7	289.7	288.5	287.8	285.7
117.5°	319.1	324.7	321.1	319.1	317.0
120°	352.8	358.4	352.8	352.8	350.4
122.5°	383.3	390.5	386.9	384.9	383.3
125°	415.5	421.9	419.8	417.5	416.8
127.5°	446.8	454.8	452.0	448.9	446.8
130°	476.2	485.4	484.1	482.6	479.7
132.5°	509.1	516.2	516.7	513.2	511.1
135°	537.4	545.3	546.9	546.1	544.0
137.5°	569.0	575.4	576.7	576.2	573.1
140°	596.8	603.2	606.8	606.8	604.0
142.5°	625.4	631.8	633.8	634.6	631.8
145°	652.5	657.5	661.6	662.4	659.6
147.5°	676.7	683.1	686.1	687.4	684.6
150°	701.7	706.1	708.8	711.1	708.8
152.5°	723.9	728.2	731.7	734.6	731.7
155°	746.1	748.1	750.4	753.9	751.7
157.5°	765.2	766.7	768.0	773.1	769.5
160°	782.3	783.8	784.6	788.9	785.9
162.5°	798.1	798.1	798.9	803.7	800.1
165°	811.6	810.8	810.8	815.9	812.3
167.5°	823.9	821.5	821.5	826.6	823.0
170°	833.0	831.0	830.3	835.4	831.0
172.5°	839.4	837.4	836.6	841.7	837.4
175°	844.5	842.5	841.0	846.1	841.7
177.5°	847.3	845.3	843.7	848.1	843.7
180°	846.1	846.1	846.1	846.1	846.1

TEST NUMBER: P921688

CATALOG NUMBER: DFN2DIP-HX3F0-060D030US940-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	11.73	12.71	12.55	13.54	14.57	7.71	8.69	8.52	9.52	10.55
	3H	13.41	14.29	14.24	15.13	16.19	8.90	9.78	9.73	10.62	11.68
	4H	14.02	14.85	14.87	15.70	16.77	9.36	10.18	10.20	11.03	12.10
	6H	14.45	15.21	15.30	16.06	17.14	9.68	10.44	10.54	11.30	12.38
	8H	14.57	15.30	15.44	16.17	17.25	9.77	10.50	10.64	11.37	12.45
	12H	14.64	15.32	15.51	16.19	17.30	9.82	10.51	10.69	11.38	12.49
4H	2H	11.77	12.59	12.62	13.44	14.51	8.32	9.14	9.17	9.99	11.06
	3H	13.60	14.29	14.46	15.17	16.25	9.68	10.36	10.54	11.24	12.33
	4H	14.29	14.92	15.17	15.80	16.91	10.23	10.85	11.10	11.73	12.84
	6H	14.81	15.35	15.70	16.25	17.36	10.65	11.18	11.54	12.09	13.20
	8H	14.98	15.48	15.87	16.38	17.51	10.78	11.28	11.67	12.18	13.30
	12H	15.08	15.53	15.99	16.45	17.58	10.85	11.30	11.76	12.22	13.35
8H	4H	14.27	14.77	15.16	15.67	16.80	10.51	11.01	11.40	11.91	13.04
	6H	14.83	15.25	15.75	16.19	17.31	11.03	11.44	11.95	12.38	13.51
	8H	15.04	15.41	15.97	16.35	17.49	11.22	11.58	12.15	12.52	13.66
	12H	15.18	15.51	16.12	16.43	17.63	11.34	11.66	12.27	12.59	13.78
12H	4H	14.23	14.68	15.14	15.60	16.73	10.52	10.97	11.43	11.89	13.02
	6H	14.81	15.18	15.74	16.11	17.25	11.08	11.44	12.01	12.38	13.52
	8H	15.03	15.35	15.96	16.28	17.47	11.29	11.61	12.22	12.54	13.73

END OF REPORT