

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: P921713

Luminaire Tested: DFN2DIP-HX3F0-070D030US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921713
REPORT IS A COMBINATION OF REPORTS P900730 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D030US940-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

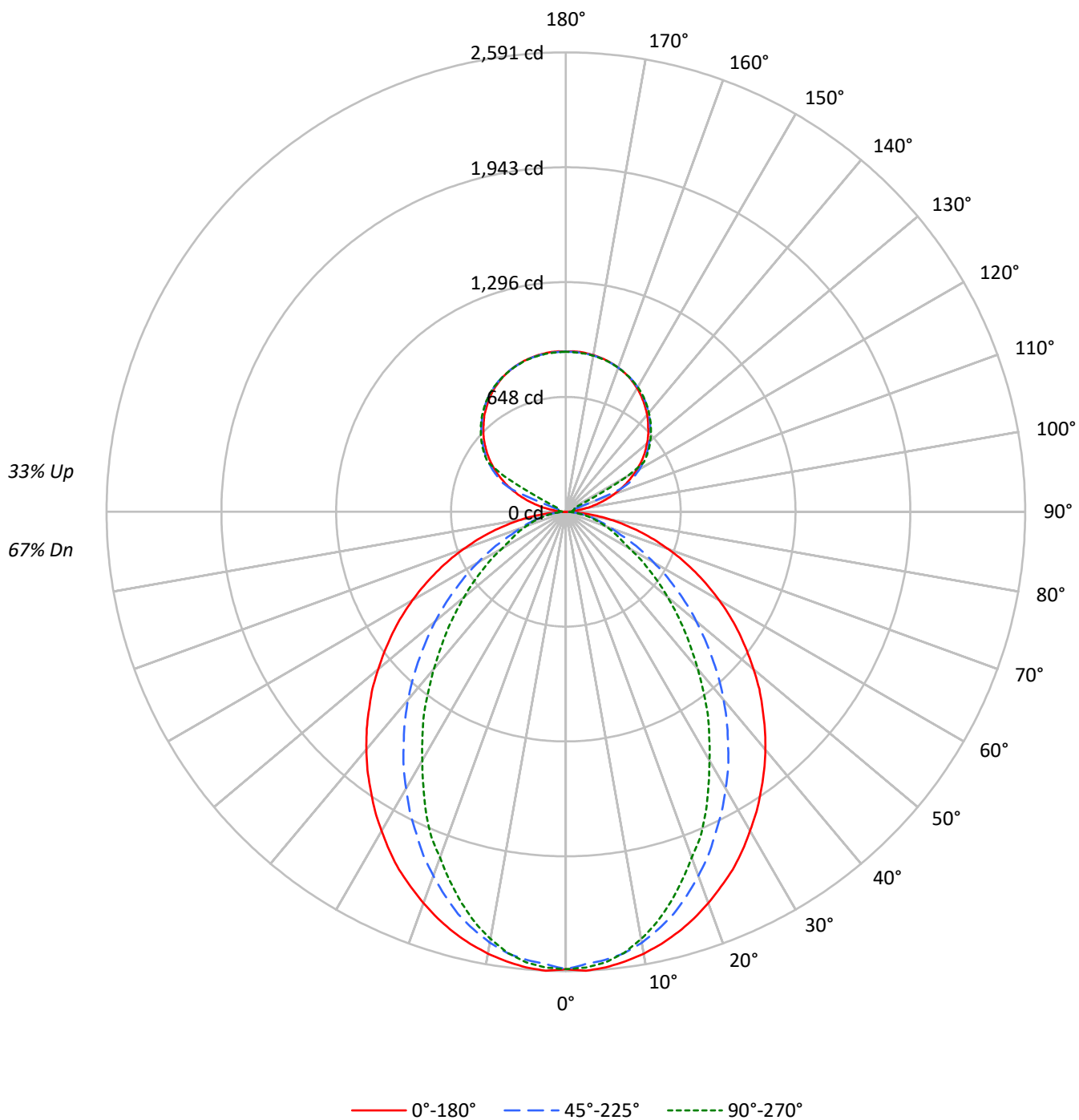
Lumens per Lamp: N/A
Luminaire Lumens: 7954.0 lumens
Efficiency: N/A
Efficacy: 86.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 92.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P921713

CATALOG NUMBER: DFN2DIP-HX3F0-070D030US940-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P921713

CATALOG NUMBER: DFN2DIP-HX3F0-070D030US940-RLLONL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71	69	69	69
1	102	98	94	91	96	93	89	86	82	80	78	73	71	69	64	63	62	61	60	58
2	94	86	80	75	88	82	76	72	73	69	65	65	62	59	57	55	53	51	49	49
3	86	77	69	64	81	72	66	61	65	60	56	58	54	51	51	48	46	44	42	42
4	79	68	60	54	74	65	58	52	58	53	48	52	48	44	46	43	40	37	37	37
5	73	61	53	47	68	58	51	45	52	47	42	47	42	39	42	38	35	33	33	33
6	67	55	47	41	63	53	45	40	48	42	37	43	38	34	38	35	31	29	29	29
7	62	50	42	37	59	48	41	36	43	37	33	39	34	31	35	31	28	26	26	26
8	58	46	38	33	55	44	37	32	40	34	30	36	31	28	33	29	26	23	23	23
9	54	42	35	30	51	40	33	29	37	31	27	33	29	25	30	26	23	21	21	21
10	51	39	32	27	48	37	31	26	34	28	24	31	26	23	28	24	21	19	19	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2988	2988	2988
5°	2992	2939	2958
10°	2961	2879	2860
15°	2919	2782	2710
20°	2863	2649	2526
25°	2807	2500	2348
30°	2731	2347	2124
35°	2657	2184	1927
40°	2582	2015	1701
45°	2494	1827	1496
50°	2403	1638	1296
55°	2308	1437	1104
60°	2199	1226	907
65°	2072	1013	815
70°	1919	813	735
75°	1726	712	665
80°	1447	591	571
85°	988	384	420

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2494 cd/sqm

TEST NUMBER: P921713

CATALOG NUMBER: DFN2DIP-HX3F0-070D030US940-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.8	3.0
10°-20°	663.7	8.3
20°-30°	931.9	11.7
30°-40°	1015.8	12.8
40°-50°	933.6	11.7
50°-60°	733.2	9.2
60°-70°	477.3	6.0
70°-80°	245.7	3.1
80°-90°	64.3	0.8
90°-100°	29.8	0.4
100°-110°	111.0	1.4
110°-120°	294.3	3.7
120°-130°	488.2	6.1
130°-140°	518.5	6.5
140°-150°	481.9	6.1
150°-160°	387.5	4.9
160°-170°	249.7	3.1
170°-180°	85.9	1.1
0°-30°	1837.4	23.1
0°-40°	2853.2	35.9
0°-60°	4520.0	56.8
0°-90°	5307.2	66.7
90°-120°	435.1	5.5
90°-150°	1923.7	24.2
90°-180°	2647.0	33.3
0°-180°	7954.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2580	2580	2580	2580	2580	
5°	2580	2568	2538	2559	2552	245
15°	2454	2428	2349	2304	2281	691
25°	2227	2152	1998	1903	1868	1024
35°	1919	1800	1595	1448	1396	1201
45°	1569	1412	1167	1002	946	1212
55°	1193	1011	759	619	574	1066
65°	806	616	406	327	320	799
75°	430	266	187	170	168	454
85°	100	51	44	44	44	115
90°	1	8	13	16	18	8
95°	42	21	25	29	28	50
105°	199	218	40	47	50	212
115°	376	387	403	101	54	370
125°	531	540	552	557	559	474
135°	657	668	674	680	679	508
145°	762	762	773	777	774	477
155°	840	834	841	845	840	387
165°	884	881	883	887	883	250
175°	905	900	902	906	900	86
180°	903	903	903	903	903	

TEST NUMBER: P921713

CATALOG NUMBER: DFN2DIP-HX3F0-070D030US940-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2579.8	2579.8	2579.8	2579.8	2579.8
2.5°	2591.4	2579.8	2554.0	2577.6	2572.9
5°	2579.8	2568.1	2537.7	2558.8	2551.8
7.5°	2558.8	2544.9	2512.2	2521.3	2509.7
10°	2530.8	2514.4	2467.8	2460.7	2446.8
12.5°	2495.8	2474.8	2411.6	2397.7	2371.9
15°	2453.7	2427.9	2348.7	2304.4	2281.1
17.5°	2404.7	2367.3	2269.2	2217.9	2180.5
20°	2348.7	2301.9	2185.2	2127.0	2075.5
22.5°	2288.0	2234.3	2098.7	2019.5	1984.6
25°	2227.3	2152.5	1998.4	1902.8	1867.7
27.5°	2155.0	2075.5	1905.1	1795.4	1741.6
30°	2078.0	1989.0	1802.2	1683.4	1620.2
32.5°	2003.1	1895.7	1704.4	1564.2	1505.7
35°	1919.1	1800.0	1594.7	1447.6	1396.1
37.5°	1837.5	1708.9	1491.9	1330.6	1272.5
40°	1751.0	1611.1	1384.4	1218.7	1158.0
42.5°	1662.3	1513.0	1277.1	1104.2	1046.1
45°	1569.0	1412.4	1167.4	1001.5	945.5
47.5°	1480.2	1314.6	1062.4	896.4	845.2
50°	1382.2	1216.5	959.6	798.3	749.6
52.5°	1286.3	1111.2	861.5	707.4	663.1
55°	1192.9	1010.8	758.7	618.8	574.4
57.5°	1097.3	910.5	667.8	537.0	499.6
60°	999.3	812.4	571.9	453.1	415.6
62.5°	903.6	716.8	490.2	378.3	359.6
65°	805.5	616.3	406.3	327.0	319.8
67.5°	712.1	522.9	327.0	287.0	280.2
70°	614.0	431.9	270.7	247.4	238.0
72.5°	520.7	347.8	226.4	207.9	203.1
75°	429.5	266.0	186.7	170.4	168.2
77.5°	338.6	189.0	147.1	137.7	133.0
80°	254.4	135.5	112.0	102.8	102.8
82.5°	177.4	91.1	77.0	72.3	72.3
85°	100.3	51.3	44.3	44.3	44.3
87.5°	37.4	18.5	18.5	16.3	16.3
90°	0.6	7.8	13.0	16.4	17.6
92.5°	16.4	13.7	15.7	17.0	17.6
95°	42.4	20.9	25.4	28.8	28.1
97.5°	76.4	22.9	33.3	35.3	35.9
100°	115.7	26.1	37.3	42.4	43.8
102.5°	158.7	157.5	38.5	45.7	47.7
105°	198.6	218.2	39.9	47.0	49.7
107.5°	245.0	261.3	41.2	48.3	51.0
110°	289.4	303.1	114.3	49.0	51.6

TEST NUMBER: P921713

CATALOG NUMBER: DFN2DIP-HX3F0-070D030US940-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	331.3	343.0	331.9	50.3	52.3
115°	375.6	386.7	403.1	100.6	53.6
117.5°	414.2	427.2	438.4	344.9	173.8
120°	457.3	467.1	478.8	486.7	398.5
122.5°	493.8	504.4	517.5	521.3	522.0
125°	531.1	539.6	552.1	556.6	558.6
127.5°	565.1	574.2	584.1	590.6	591.2
130°	597.1	607.6	614.7	621.9	621.3
132.5°	629.7	638.3	645.4	651.3	650.7
135°	657.2	667.7	673.5	680.1	678.8
137.5°	685.9	693.8	700.3	706.9	704.9
140°	714.0	719.3	726.4	732.3	729.1
142.5°	737.6	742.2	750.6	755.8	752.6
145°	762.4	761.7	772.8	777.4	774.1
147.5°	783.9	781.9	793.1	796.3	793.7
150°	804.9	800.3	810.7	814.6	811.4
152.5°	822.4	817.3	827.1	831.0	826.4
155°	839.5	833.7	841.4	845.3	840.2
157.5°	853.2	848.0	853.9	858.4	853.2
160°	865.0	861.0	865.0	868.9	864.2
162.5°	875.4	871.5	874.8	879.3	873.4
165°	884.5	880.7	882.6	887.2	882.6
167.5°	891.7	887.8	889.7	894.4	888.5
170°	897.6	893.7	895.0	899.6	893.7
172.5°	901.5	897.6	898.9	903.5	897.6
175°	904.7	900.2	901.5	906.1	899.6
177.5°	906.1	901.5	902.2	906.8	900.9
180°	902.9	902.9	902.9	902.9	902.9

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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	12.34	13.33	13.15	14.15	15.17	8.32	9.31	9.12	10.13	11.14
	3H	14.02	14.91	14.84	15.74	16.78	9.51	10.40	10.33	11.23	12.27
	4H	14.63	15.47	15.47	16.31	17.36	9.97	10.80	10.81	11.64	12.70
	6H	15.06	15.82	15.91	16.67	17.74	10.29	11.06	11.14	11.91	12.98
	8H	15.18	15.91	16.04	16.78	17.85	10.39	11.12	11.24	11.98	13.05
	12H	15.25	15.94	16.11	16.80	17.90	10.43	11.13	11.30	11.99	13.08
4H	2H	12.38	13.21	13.22	14.05	15.11	8.93	9.76	9.77	10.60	11.66
	3H	14.21	14.90	15.07	15.78	16.85	10.29	10.98	11.14	11.85	12.92
	4H	14.91	15.53	15.77	16.41	17.50	10.84	11.47	11.70	12.34	13.43
	6H	15.42	15.96	16.30	16.86	17.96	11.26	11.80	12.14	12.70	13.80
	8H	15.60	16.10	16.48	16.99	18.10	11.39	11.90	12.27	12.79	13.90
	12H	15.69	16.15	16.60	17.06	18.18	11.46	11.91	12.36	12.82	13.94
8H	4H	14.88	15.39	15.77	16.28	17.39	11.12	11.63	12.01	12.52	13.63
	6H	15.45	15.86	16.36	16.80	17.91	11.64	12.06	12.55	12.99	14.11
	8H	15.66	16.03	16.58	16.95	18.08	11.83	12.20	12.75	13.13	14.26
	12H	15.80	16.13	16.72	17.04	18.22	11.95	12.28	12.87	13.20	14.38
12H	4H	14.84	15.30	15.74	16.21	17.32	11.14	11.59	12.04	12.50	13.62
	6H	15.42	15.79	16.34	16.72	17.85	11.69	12.06	12.61	12.99	14.12
	8H	15.64	15.97	16.57	16.89	18.07	11.90	12.23	12.83	13.15	14.33