

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: P907938

Luminaire Tested: DFN2DIP-HX2F0-050D030US840-FLLFLL

Issue Date: 11/21/2024

**Test Information**

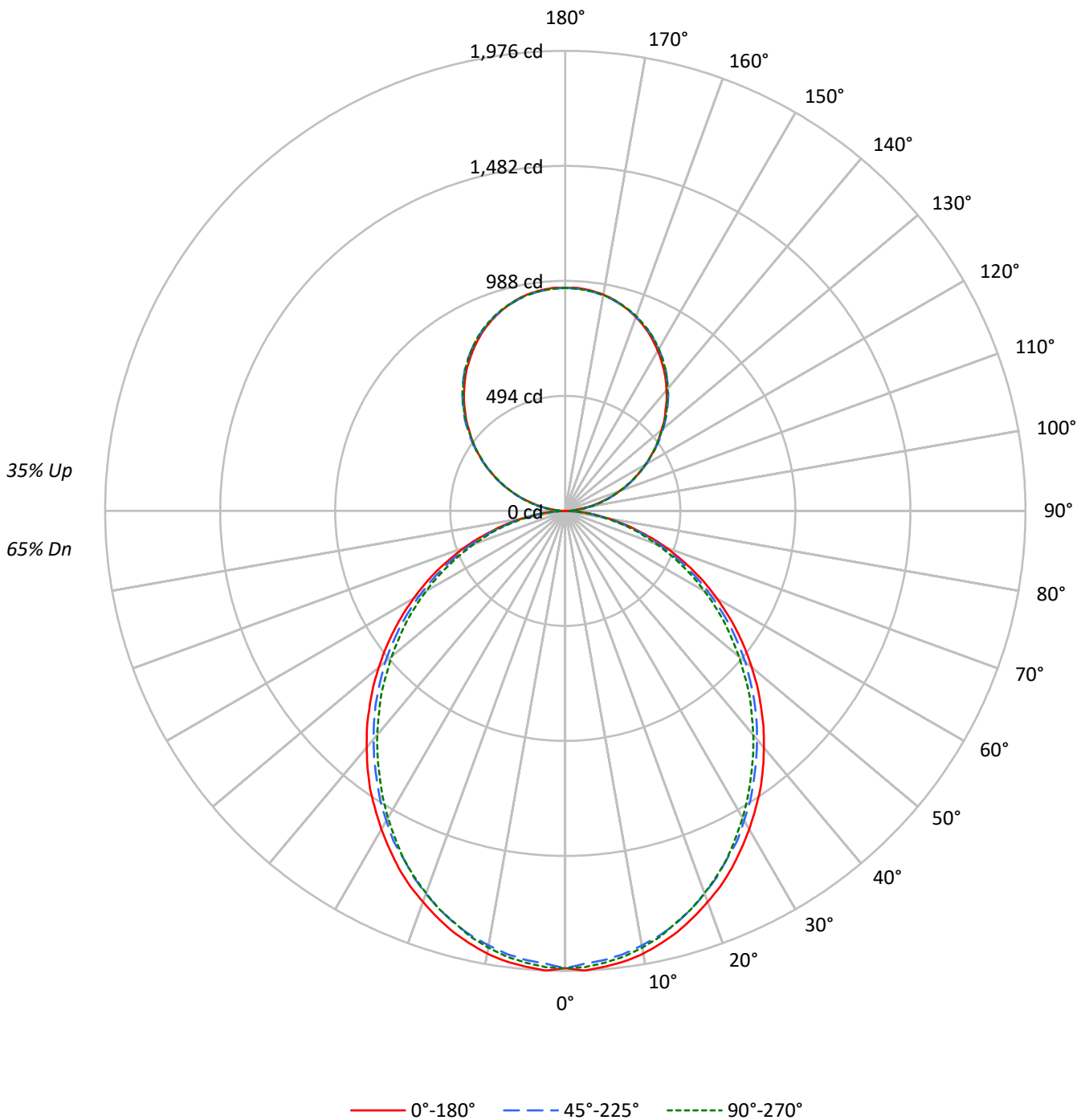
Test Method: LM-79-2019  
Report Number: P907938  
REPORT IS A COMBINATION OF REPORTS P899167 AND P896039  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-HX2F0-050D030US840-FLLFLL  
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7680.0 lumens  
Efficiency: N/A  
Efficacy: 110.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')  
CIE Type: Semi-Direct  
  
Input Watts (W): 69.3  
Input Voltage (V): 120  
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

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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			0	
RW	70	50	30	10	70	50	30	10	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	80	80	80	70	70	70	65			65
1	101	97	93	89	95	91	88	84	81	78	75	71	69	67	62	60	59	55			55
2	92	85	78	73	86	80	74	69	71	66	63	62	59	56	55	52	50	46			46
3	84	74	67	61	79	70	63	58	62	57	53	55	51	47	48	45	42	39			39
4	77	66	58	52	72	62	55	49	55	50	45	49	44	41	43	40	37	33			33
5	71	59	50	44	66	56	48	42	50	44	39	44	39	35	39	35	32	29			29
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	35	31	28	26			26
7	60	48	40	34	57	45	38	33	41	35	30	36	31	28	32	28	25	23			23
8	56	44	36	30	53	41	34	29	37	31	27	33	28	25	30	26	22	20			20
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	27	23	20	18			18
10	49	37	29	24	46	35	28	23	32	26	22	28	24	20	25	21	19	17			17

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4629	4629	4629
5°	4629	4553	4587
10°	4584	4481	4516
15°	4510	4396	4411
20°	4411	4283	4303
25°	4313	4150	4180
30°	4192	4025	4026
35°	4076	3879	3864
40°	3936	3732	3708
45°	3795	3583	3548
50°	3640	3427	3365
55°	3478	3247	3193
60°	3294	3035	2998
65°	3093	2812	2767
70°	2836	2543	2517
75°	2485	2219	2274
80°	2057	1806	1835
85°	1397	1133	1135

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3795 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	184.9	2.4
10°-20°	520.3	6.8
20°-30°	764.6	10.0
30°-40°	888.1	11.6
40°-50°	887.0	11.5
50°-60°	773.4	10.1
60°-70°	571.7	7.4
70°-80°	323.5	4.2
80°-90°	88.1	1.1
90°-100°	59.3	0.8
100°-110°	188.4	2.5
110°-120°	322.4	4.2
120°-130°	424.0	5.5
130°-140°	475.9	6.2
140°-150°	466.7	6.1
150°-160°	391.5	5.1
160°-170°	259.6	3.4
170°-180°	90.7	1.2
0°-30°	1469.8	19.1
0°-40°	2357.9	30.7
0°-60°	4018.3	52.3
0°-90°	5001.6	65.1
90°-120°	570.1	7.4
90°-150°	1936.6	25.2
90°-180°	2678.0	34.9
0°-180°	7680.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1952	1948	187
15°	1870	1859	1834	1842	1833	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
90°	1	10	28	27	28	7
95°	42	50	52	52	50	47
105°	174	176	178	179	179	184
115°	324	328	327	326	324	320
125°	471	478	475	473	472	420
135°	609	618	619	618	616	470
145°	739	745	749	750	747	462
155°	845	847	850	854	851	389
165°	919	918	918	924	920	259
175°	956	954	952	958	953	91
180°	958	958	958	958	958	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1964.7	1964.7	1964.7	1964.7	1964.7
2.5°	1976.1	1966.7	1945.9	1964.7	1961.2
5°	1964.7	1957.3	1936.4	1951.5	1947.9
7.5°	1951.5	1940.3	1919.5	1934.7	1930.9
10°	1930.9	1917.6	1895.0	1910.0	1904.4
12.5°	1902.4	1891.2	1868.6	1877.9	1874.1
15°	1870.3	1859.1	1834.4	1842.1	1832.6
17.5°	1830.6	1819.4	1794.7	1804.1	1794.7
20°	1787.2	1775.9	1749.5	1755.0	1747.7
22.5°	1743.8	1726.8	1702.1	1702.1	1698.3
25°	1692.7	1677.7	1645.6	1649.2	1645.6
27.5°	1636.0	1622.8	1598.3	1592.7	1583.3
30°	1579.4	1564.3	1536.0	1530.4	1522.8
32.5°	1518.9	1507.7	1477.4	1466.0	1458.4
35°	1460.4	1441.6	1411.3	1399.9	1390.5
37.5°	1394.2	1377.3	1347.0	1333.7	1324.3
40°	1326.4	1311.1	1280.8	1263.9	1256.4
42.5°	1260.2	1245.0	1214.9	1195.8	1184.6
45°	1188.4	1175.2	1146.7	1126.1	1118.4
47.5°	1118.4	1105.2	1075.0	1054.1	1042.9
50°	1044.7	1035.3	1008.9	982.4	972.9
52.5°	972.9	959.7	935.2	914.4	901.2
55°	899.4	888.0	865.3	842.6	833.2
57.5°	825.6	816.2	791.5	768.9	761.2
60°	751.8	744.5	718.0	697.1	691.6
62.5°	680.1	666.9	648.0	629.1	621.6
65°	606.5	595.1	576.2	559.3	549.8
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.4	423.1	415.8
72.5°	389.3	381.6	372.2	359.0	353.4
75°	317.3	313.7	304.1	292.9	296.7
77.5°	253.2	245.5	241.8	236.1	230.6
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.5	128.5	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
90°	0.9	10.4	28.3	26.6	27.5
92.5°	17.9	24.2	25.1	26.0	26.0
95°	42.2	50.3	51.7	51.7	50.3
97.5°	70.2	77.7	80.9	80.9	80.9
100°	102.5	109.2	111.5	111.5	110.7
102.5°	136.6	141.6	144.7	145.6	144.7
105°	173.9	176.2	177.9	179.4	179.4
107.5°	210.9	214.3	214.3	214.9	210.9
110°	246.7	251.4	251.4	251.4	249.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	285.4	290.3	289.4	287.1	285.4
115°	323.6	328.1	326.7	325.9	323.6
117.5°	361.3	367.7	363.7	361.3	359.0
120°	399.5	405.9	399.5	399.5	396.9
122.5°	434.1	442.2	438.2	435.9	434.1
125°	470.6	477.8	475.4	472.8	472.0
127.5°	506.0	515.0	511.9	508.4	506.0
130°	539.3	549.7	548.3	546.5	543.3
132.5°	576.5	584.6	585.2	581.2	578.9
135°	608.6	617.5	619.4	618.4	616.1
137.5°	644.4	651.7	653.1	652.6	649.0
140°	675.9	683.2	687.2	687.2	684.0
142.5°	708.3	715.5	717.8	718.7	715.5
145°	738.9	744.7	749.3	750.1	747.0
147.5°	766.4	773.6	777.0	778.5	775.3
150°	794.7	799.6	802.7	805.4	802.7
152.5°	819.8	824.7	828.7	831.9	828.7
155°	845.0	847.2	849.8	853.8	851.3
157.5°	866.6	868.3	869.8	875.6	871.5
160°	886.0	887.7	888.6	893.4	890.0
162.5°	903.8	903.8	904.7	910.2	906.2
165°	919.2	918.3	918.3	924.0	920.0
167.5°	933.0	930.4	930.4	936.1	932.1
170°	943.4	941.1	940.3	946.0	941.1
172.5°	950.6	948.4	947.5	953.2	948.4
175°	956.4	954.1	952.4	958.2	953.2
177.5°	959.6	957.3	955.5	960.5	955.5
180°	958.2	958.2	958.2	958.2	958.2



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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	13.75	14.76	14.56	15.60	16.64	13.33	14.34	14.14	15.18	16.22
	3H	15.39	16.31	16.22	17.15	18.22	14.93	15.85	15.76	16.69	17.76
	4H	15.97	16.83	16.82	17.69	18.77	15.51	16.38	16.36	17.23	18.31
	6H	16.36	17.16	17.22	18.02	19.11	15.90	16.70	16.76	17.56	18.65
	8H	16.46	17.22	17.33	18.10	19.19	16.00	16.76	16.87	17.64	18.73
	12H	16.51	17.23	17.38	18.10	19.22	16.04	16.76	16.91	17.64	18.76
4H	2H	14.22	15.08	15.07	15.94	17.01	13.88	14.74	14.73	15.60	16.67
	3H	16.07	16.79	16.93	17.68	18.77	15.69	16.40	16.55	17.29	18.38
	4H	16.77	17.43	17.64	18.31	19.43	16.38	17.03	17.25	17.92	19.03
	6H	17.27	17.84	18.16	18.75	19.87	16.87	17.44	17.76	18.35	19.47
	8H	17.41	17.94	18.30	18.84	19.98	17.01	17.54	17.91	18.45	19.58
	12H	17.48	17.96	18.39	18.88	20.02	17.08	17.55	17.99	18.48	19.62
8H	4H	16.97	17.50	17.86	18.40	19.54	16.62	17.15	17.51	18.05	19.18
	6H	17.58	18.01	18.49	18.96	20.09	17.22	17.66	18.14	18.61	19.74
	8H	17.78	18.17	18.71	19.11	20.26	17.43	17.81	18.36	18.75	19.90
	12H	17.90	18.25	18.84	19.18	20.38	17.54	17.88	18.47	18.81	20.01
12H	4H	16.96	17.44	17.87	18.36	19.50	16.61	17.09	17.53	18.01	19.15
	6H	17.60	17.99	18.53	18.93	20.08	17.26	17.65	18.19	18.59	19.74
	8H	17.83	18.18	18.77	19.11	20.31	17.49	17.83	18.42	18.76	19.96