

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: HALO

Report Number: P1214541

Luminaire Tested: HFL4001S/HFL4002S-930

Issue Date: 12/2/2025

Test Information

Test Method: LM-79-2019
Report Number: P1214541
Test Lab: THIRD PARTY NVLAP LAB
Issue Date: 12/2/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: HFL4001S/HFL4002S-930
Description: HALO FLEX LINEAR 400LM/FT 90 CRI COLOR SELECTABLE FIXTURE (ONE FOOT)
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

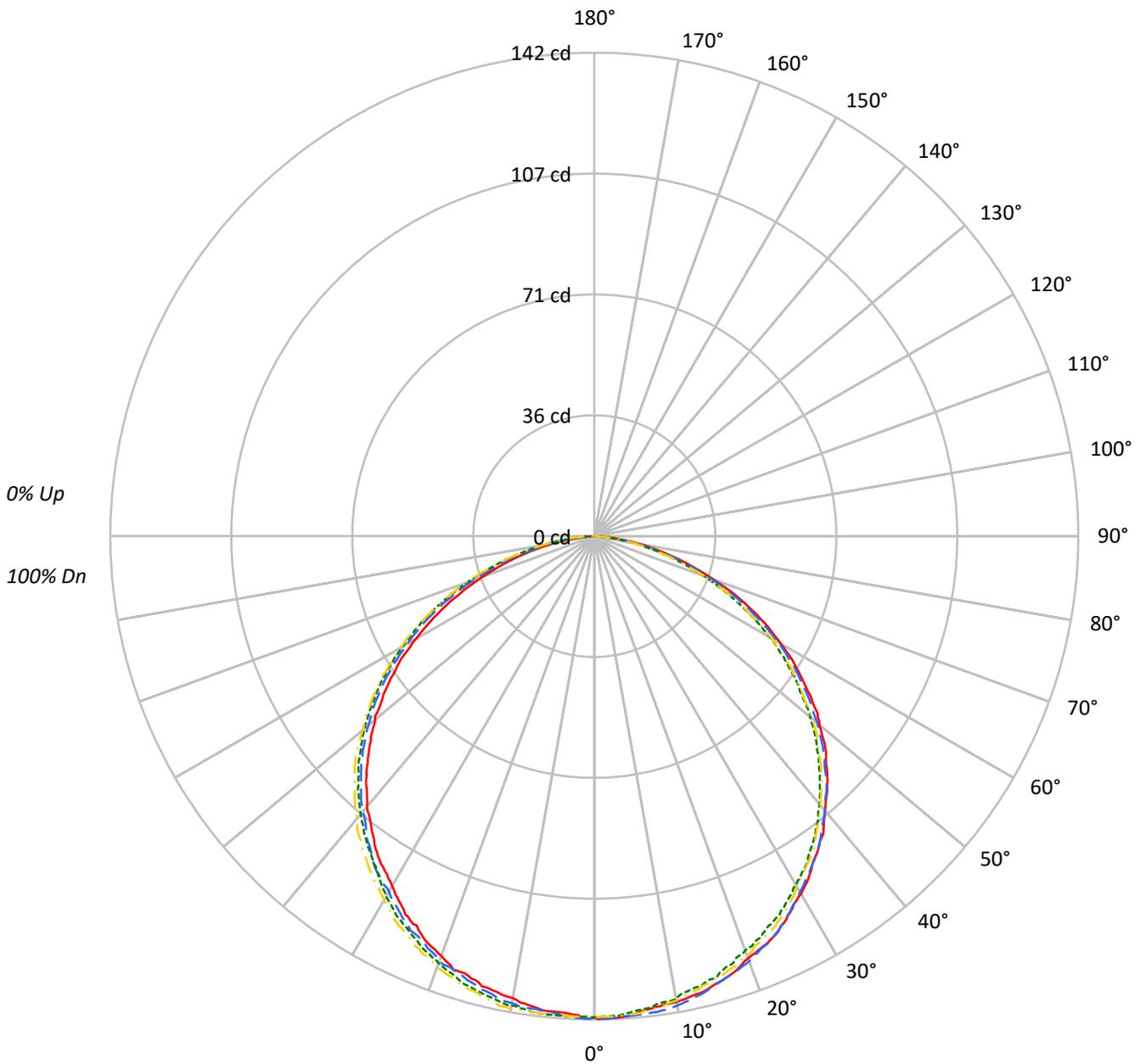
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 403.4 lumens
Efficiency: N/A
Efficacy: 89.6 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.26 / 1.39
Luminous Opening: Rectangular (W 0.03' x L: 1' x H: 0')
CIE Type: Direct

Input Watts (W): 4.5
Input Voltage (V): 24
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT

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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° ··· 90°-270° - · 135°-315°



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	76	72	72	72	72	70
3	90	80	72	65	88	78	71	65	75	69	63	72	67	62	70	65	61	61	61	61	59
4	83	71	62	55	80	69	61	55	67	60	54	64	58	53	62	57	53	53	53	53	50
5	76	63	54	47	74	62	54	47	60	52	47	58	51	46	56	50	46	46	46	46	44
6	70	57	48	41	68	56	47	41	54	46	41	52	46	40	51	45	40	40	40	40	38
7	65	51	43	37	63	51	42	36	49	42	36	48	41	36	46	40	36	36	36	36	34
8	60	47	38	33	59	46	38	32	45	37	32	44	37	32	42	36	32	32	32	32	30
9	56	43	35	29	55	42	35	29	41	34	29	40	34	29	39	33	29	29	29	29	27
10	53	40	32	26	52	39	32	26	38	31	26	37	31	26	36	30	26	26	26	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	50734	50734	50734	50734
5°	50676	50387	50496	50856
10°	50642	50314	50205	51007
15°	50666	49998	50146	51112
20°	50401	49446	50095	50974
25°	50674	49367	49763	50793
30°	50255	49095	49178	50586
35°	49846	48707	49057	50021
40°	49273	48196	48571	49929
45°	48966	47240	47697	49625
50°	48116	46162	46832	49121
55°	46916	44789	45602	48104
60°	45352	42697	43414	46572
65°	43129	39648	40497	44742
70°	39025	35668	36612	41542
75°	34380	30637	31469	37430
80°	28307	23555	24795	32027
85°	20584	15644	14409	25524

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 315°
 Vertical Angle: 89.5°
 Luminance: 65785 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	13.4	3.3
10°-20°	38.5	9.6
20°-30°	58.6	14.5
30°-40°	71.0	17.6
40°-50°	74.1	18.4
50°-60°	66.5	16.5
60°-70°	49.2	12.2
70°-80°	25.9	6.4
80°-90°	5.9	1.5
90°-100°	0.1	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	110.6	27.4
0°-40°	181.6	45.0
0°-60°	322.2	79.9
0°-90°	403.3	100.0
90°-120°	0.1	0.0
90°-150°	0.1	0.0
90°-180°	0.0	0.0
0°-180°	403.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	141	141	141	141	141	
5°	141	140	140	141	141	13
15°	136	135	135	138	136	38
25°	128	125	126	128	128	59
35°	114	111	112	114	114	71
45°	96	93	94	98	96	74
55°	75	72	73	77	75	67
65°	51	47	48	53	51	50
75°	25	22	23	27	25	26
85°	5	4	4	6	5	6
90°	0	0	0	1	0	0
95°	0	0	0	0	0	0
105°	0	0	0	0	0	0
115°	0	0	0	0	0	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	141.4	141.4	141.4	141.4	141.4	141.4	141.4	141.4	141.4	141.4	141.4
0.5°	141.9	141.3	141.7	141.6	141.2	141.4	141.2	140.8	141.7	141.3	141.8
1°	141.8	141.3	141.7	141.6	141.2	141.4	141.2	140.5	141.7	141.3	141.8
1.5°	141.8	141.3	141.7	141.7	141.1	141.5	141.2	140.5	141.3	141.3	141.7
2°	141.7	141.3	141.7	141.8	141.1	141.5	141.2	140.5	140.8	141.4	141.6
2.5°	141.7	141.3	141.7	141.7	141.0	141.3	141.2	140.5	140.7	141.4	141.6
3°	141.6	141.3	141.4	141.7	141.0	141.3	141.0	140.5	140.5	141.2	141.2
3.5°	141.4	141.3	141.3	141.7	140.7	140.3	141.1	140.5	140.3	141.2	141.2
4°	141.3	141.3	141.3	141.5	140.5	140.3	141.0	140.5	140.2	141.2	141.1
4.5°	141.1	141.3	141.3	141.5	140.2	140.3	140.9	140.5	140.2	141.2	140.7
5°	140.7	141.3	141.2	141.4	139.9	140.3	140.8	140.5	140.2	141.1	140.5
5.5°	140.4	141.4	141.2	141.4	139.8	140.3	140.8	140.5	140.2	140.9	140.3
6°	140.1	141.4	141.0	141.2	139.6	140.3	140.3	140.3	140.2	140.5	140.2
6.5°	139.9	141.1	141.1	141.1	139.6	140.3	140.2	140.1	139.9	140.4	140.2
7°	139.7	141.0	140.9	140.9	139.4	140.0	140.0	139.8	139.6	140.2	140.0
7.5°	139.5	140.8	141.0	140.9	138.8	140.0	139.7	139.7	139.3	140.1	140.0
8°	139.4	140.7	140.8	140.6	138.5	139.9	139.8	139.5	139.1	139.9	140.0
8.5°	139.1	140.3	140.7	140.3	138.4	139.9	139.4	139.4	138.8	140.0	140.0
9°	139.1	140.3	140.5	140.1	138.5	139.6	138.9	139.2	138.7	139.9	139.9
9.5°	139.0	140.2	140.3	140.0	138.3	139.0	138.7	139.3	138.1	139.4	139.5
10°	139.0	139.8	140.0	139.7	138.1	138.8	138.6	139.2	137.8	138.9	139.3
10.5°	138.7	139.4	139.8	139.6	137.2	138.6	138.2	139.1	137.7	138.8	139.2
11°	138.6	139.3	139.4	139.5	136.7	137.9	137.6	138.8	137.6	138.5	139.1
11.5°	138.3	138.8	139.3	139.1	136.5	137.6	137.2	138.4	137.3	138.3	138.7
12°	138.1	138.5	138.9	138.7	136.2	137.3	136.9	138.2	136.9	137.9	138.5
12.5°	137.8	138.3	138.5	138.3	135.9	136.9	136.8	137.8	136.8	137.6	137.9
13°	137.8	137.9	138.3	137.8	135.8	136.4	136.6	137.6	136.5	137.3	137.6
13.5°	137.6	137.6	137.9	137.6	135.6	136.1	135.9	137.1	136.3	137.3	137.3
14°	137.2	137.2	137.5	137.2	135.0	136.1	135.7	136.8	136.3	136.9	137.2
14.5°	136.8	136.9	137.0	137.0	134.6	136.2	135.6	136.4	135.4	136.7	136.6
15°	136.4	136.8	136.7	136.5	134.6	135.7	135.0	135.9	135.0	136.4	136.2
15.5°	136.1	136.4	136.2	136.1	134.5	135.1	134.5	135.3	134.9	136.2	135.9
16°	135.9	136.0	135.9	135.9	133.4	135.0	134.3	135.0	134.3	136.0	135.6
16.5°	135.4	135.7	135.5	135.5	132.9	134.7	134.2	134.5	133.9	135.8	135.0
17°	135.1	135.4	135.1	135.2	132.3	134.6	133.6	134.2	133.9	135.0	134.5
17.5°	134.7	134.9	134.7	134.7	132.2	133.6	133.2	134.2	133.9	134.6	134.4
18°	134.3	134.4	134.4	134.2	131.9	133.4	133.1	133.1	133.9	133.9	133.9
18.5°	133.7	134.2	134.1	133.5	130.8	132.4	132.7	132.6	132.9	133.5	133.5
19°	133.1	133.6	133.6	133.0	130.4	132.0	131.8	132.3	132.4	133.4	133.4
19.5°	132.4	133.1	133.3	132.4	130.2	131.9	131.2	131.5	131.9	132.6	133.4
20°	132.0	132.6	132.9	132.1	129.5	131.0	131.2	131.0	131.2	132.1	132.3
20.5°	131.6	132.3	132.3	131.5	129.1	130.7	130.8	130.6	130.8	131.7	131.9
21°	131.3	131.8	131.7	131.1	129.0	130.4	129.9	130.0	130.2	131.0	131.4
21.5°	130.9	131.2	131.3	130.6	128.2	129.7	129.2	129.8	129.8	130.5	130.9
22°	130.5	130.7	130.7	130.2	127.8	129.3	128.9	129.2	129.4	129.8	130.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	130.2	130.2	130.4	129.7	127.6	128.7	128.6	128.7	128.8	129.3	129.8
23°	129.9	129.8	130.1	129.2	126.7	128.1	127.8	128.2	128.2	129.1	129.3
23.5°	129.4	129.3	129.6	128.9	126.2	127.7	127.4	127.6	127.4	128.3	128.7
24°	129.0	128.7	129.0	128.1	125.4	126.9	127.1	127.1	126.7	127.8	128.2
24.5°	128.5	128.1	128.4	127.6	125.2	126.7	126.6	126.7	125.7	127.1	128.0
25°	128.0	127.6	127.8	127.0	124.7	125.9	126.1	126.1	125.7	126.7	127.7
25.5°	127.0	126.8	127.1	126.3	124.1	125.4	125.3	125.7	125.2	126.1	126.8
26°	126.6	126.3	126.3	125.7	123.9	124.5	124.8	124.8	124.5	125.5	126.2
26.5°	126.0	125.5	125.8	125.4	122.9	124.1	124.0	124.2	124.2	125.3	125.6
27°	125.1	124.8	125.0	124.7	122.5	123.3	123.5	123.4	123.2	124.7	124.9
27.5°	124.5	124.3	124.4	124.1	121.7	122.7	122.6	122.7	122.4	124.1	124.1
28°	123.8	123.7	123.5	123.3	120.9	122.2	122.1	122.2	121.7	123.3	123.4
28.5°	122.9	123.2	122.8	122.6	120.3	121.3	121.3	121.8	120.9	122.7	122.7
29°	122.4	122.8	122.3	122.1	119.7	120.7	120.7	121.2	120.3	121.9	122.2
29.5°	121.7	122.3	121.4	121.4	118.7	120.0	119.9	120.6	119.4	121.2	121.4
30°	121.3	121.7	120.8	120.6	118.5	119.5	118.9	119.6	118.7	120.3	120.5
30.5°	120.6	120.9	120.1	119.9	117.5	118.6	118.5	118.8	117.8	119.5	119.9
31°	119.9	120.3	119.4	119.2	117.2	117.9	117.6	118.0	117.3	118.8	119.7
31.5°	119.3	119.5	118.6	118.5	116.3	117.3	117.0	117.2	116.4	118.3	119.0
32°	118.6	118.7	117.9	117.7	115.7	116.5	116.2	116.4	116.0	117.7	118.3
32.5°	117.7	117.9	117.3	117.0	115.2	116.0	115.4	115.5	115.3	117.2	117.7
33°	116.9	117.0	116.5	116.3	114.6	114.8	114.9	114.9	114.9	116.4	117.3
33.5°	115.8	116.0	115.8	115.6	113.6	114.3	114.2	114.3	114.1	115.7	116.6
34°	115.0	115.2	115.2	114.8	112.6	113.4	113.5	113.6	113.5	114.7	115.8
34.5°	114.4	114.3	114.5	114.1	111.9	112.4	113.2	112.9	112.6	113.5	114.8
35°	113.8	113.6	113.7	113.3	111.2	112.0	112.4	112.6	112.0	112.6	113.9
35.5°	113.1	113.3	113.1	112.4	110.5	111.0	111.4	111.6	111.0	112.0	113.1
36°	112.3	112.5	112.2	111.6	109.7	110.4	110.2	110.8	110.0	111.4	112.2
36.5°	111.4	111.6	111.3	110.6	109.0	109.3	109.4	109.8	109.2	110.8	111.7
37°	110.8	110.5	110.4	109.9	108.0	108.4	108.4	108.7	108.5	110.5	110.9
37.5°	110.3	109.7	109.4	109.0	107.1	107.5	107.6	107.6	107.4	109.7	109.8
38°	109.3	108.7	108.6	108.1	106.5	106.7	106.8	106.7	106.7	108.7	108.8
38.5°	108.2	107.9	107.7	107.2	105.5	105.8	105.8	105.7	105.8	107.8	107.8
39°	107.1	107.1	106.9	106.3	104.4	105.0	105.0	105.0	105.1	106.8	107.0
39.5°	106.3	106.2	106.1	105.6	103.5	104.2	104.0	104.3	104.6	105.8	106.2
40°	105.2	105.5	105.2	104.9	102.9	103.2	103.3	103.6	103.7	104.6	105.6
40.5°	104.4	104.7	104.2	103.7	101.7	102.6	102.2	102.6	102.6	104.0	104.9
41°	103.5	103.8	103.3	102.9	100.9	101.4	101.3	101.5	101.6	103.2	104.1
41.5°	102.7	102.8	102.4	102.2	100.0	100.5	100.5	100.7	100.6	102.3	103.3
42°	102.0	102.0	101.7	101.3	98.9	99.5	99.5	99.7	99.8	101.3	102.3
42.5°	101.2	101.1	100.9	100.3	97.9	98.9	98.8	98.9	99.1	100.2	101.3
43°	100.1	100.1	99.9	99.7	97.0	97.7	97.7	98.0	98.2	99.3	100.3
43.5°	99.4	99.0	99.0	98.6	96.2	96.7	96.7	97.4	97.0	98.2	99.4
44°	98.4	98.1	97.8	97.5	95.0	95.9	95.8	96.3	96.2	97.2	98.5
44.5°	97.6	97.2	96.6	96.7	93.9	95.0	94.9	95.1	95.1	96.3	97.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	96.5	96.1	95.6	95.6	93.1	93.9	93.8	94.0	94.0	95.6	96.7
45.5°	95.3	95.2	94.8	94.5	92.5	92.9	92.8	93.0	93.2	94.5	95.9
46°	94.5	94.3	93.9	93.5	91.0	91.6	91.6	92.0	92.1	93.4	94.7
46.5°	93.7	93.4	92.7	92.6	90.0	90.7	90.6	91.2	91.1	92.3	93.7
47°	92.9	92.5	91.9	91.4	89.1	89.6	89.9	90.0	90.1	91.3	92.9
47.5°	91.9	91.6	90.8	90.3	88.2	88.4	88.6	88.8	88.8	90.5	91.9
48°	90.9	90.6	89.7	89.2	87.1	87.3	87.9	87.8	88.2	89.3	90.7
48.5°	89.6	89.4	88.5	88.1	86.0	86.6	86.8	86.9	87.0	88.4	89.7
49°	88.4	88.3	87.3	87.0	84.9	85.2	85.8	85.8	86.0	87.5	88.8
49.5°	87.4	86.9	86.4	85.9	83.6	84.2	84.6	84.6	84.8	86.2	87.7
50°	86.2	86.0	85.4	84.9	82.7	83.1	83.4	83.5	83.9	85.0	86.5
50.5°	85.5	84.8	84.2	83.9	81.9	82.0	82.0	82.4	83.3	84.1	85.4
51°	84.4	83.8	82.9	82.7	80.6	81.1	81.0	81.1	81.7	83.0	84.4
51.5°	83.7	82.7	81.9	81.5	79.3	80.0	79.9	79.7	80.5	82.0	83.4
52°	82.2	81.3	80.9	80.2	77.9	78.9	78.4	78.6	79.4	81.2	82.4
52.5°	81.0	80.3	79.8	79.0	76.8	77.7	77.3	77.8	78.3	80.0	81.3
53°	80.0	79.2	78.7	77.8	75.5	76.5	76.4	76.5	77.5	78.7	80.2
53.5°	78.9	78.2	77.5	76.6	74.7	75.2	75.2	75.3	76.3	77.5	78.9
54°	77.5	77.0	76.3	75.3	73.7	74.1	74.1	74.2	75.1	76.1	77.8
54.5°	76.3	75.8	75.0	74.3	72.5	73.2	72.8	72.9	73.9	75.0	76.6
55°	75.0	74.8	73.9	73.3	71.6	72.4	71.7	71.9	72.9	73.9	75.6
55.5°	73.9	73.5	73.0	72.1	70.1	70.9	70.6	70.7	71.5	72.8	74.6
56°	72.8	72.2	71.8	71.1	69.0	69.8	69.9	69.9	70.3	71.6	73.2
56.5°	71.7	71.0	70.8	69.8	67.7	68.3	68.7	68.7	69.4	70.4	71.9
57°	70.6	70.0	69.6	68.6	66.7	67.2	67.3	67.4	68.3	69.6	70.8
57.5°	69.5	68.8	68.2	67.3	65.7	65.8	66.1	66.2	67.2	68.2	69.7
58°	68.5	67.7	67.1	66.1	64.3	64.6	65.0	64.9	65.7	67.0	68.3
58.5°	67.2	66.5	66.0	65.0	63.3	63.2	63.8	63.5	64.4	65.6	67.1
59°	65.8	65.4	64.9	63.8	62.1	62.2	62.3	62.2	62.9	64.4	65.9
59.5°	64.4	64.2	63.5	62.6	60.9	61.3	61.2	61.1	61.9	63.2	64.5
60°	63.2	62.7	62.2	61.3	59.5	60.2	60.0	59.9	60.5	61.8	63.3
60.5°	62.0	61.4	60.9	60.1	58.2	58.7	58.7	58.7	59.2	60.6	62.2
61°	60.7	60.2	59.7	58.7	56.9	57.5	57.4	57.3	58.0	59.4	61.0
61.5°	59.5	59.2	58.4	57.3	55.9	56.3	56.1	55.7	56.7	58.3	59.8
62°	58.4	57.9	57.2	56.2	54.5	55.1	55.0	54.5	55.4	57.1	58.5
62.5°	57.3	56.5	55.7	54.9	53.2	53.6	53.5	53.3	54.2	55.7	57.3
63°	55.9	55.2	54.6	53.7	52.0	52.3	52.3	52.1	53.0	54.5	56.1
63.5°	54.5	53.9	53.3	52.4	50.6	51.0	50.9	50.8	51.6	53.4	55.0
64°	53.4	52.5	52.0	51.2	49.3	49.7	49.7	49.6	50.4	52.1	53.5
64.5°	52.1	51.2	50.8	49.8	48.1	48.4	48.7	48.7	49.0	50.7	52.2
65°	50.8	49.9	49.6	48.6	46.7	47.0	47.2	47.1	47.7	49.5	50.8
65.5°	49.4	48.7	48.1	47.4	45.4	45.8	46.0	45.8	46.6	48.1	49.5
66°	48.3	47.3	46.9	46.0	44.1	44.3	44.7	44.6	45.1	46.9	48.4
66.5°	46.9	46.1	45.7	44.7	42.9	43.2	43.4	43.3	43.7	45.5	46.9
67°	45.5	44.8	44.2	43.4	41.6	41.7	42.1	42.1	42.5	44.0	45.4



TEST NUMBER: P1214541

CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	44.2	43.5	43.0	42.3	40.3	40.6	40.7	40.7	41.4	42.8	44.1
68°	42.8	42.0	41.6	41.0	39.1	39.1	39.4	39.4	39.9	41.6	42.9
68.5°	41.4	40.9	40.2	39.7	37.8	37.8	38.1	38.2	38.6	40.1	41.5
69°	40.0	39.6	38.8	38.3	36.5	36.5	36.9	36.9	37.4	38.4	40.3
69.5°	38.6	38.3	37.5	37.1	35.3	35.2	35.4	35.7	36.1	37.4	38.7
70°	37.2	37.2	36.2	35.9	34.0	33.9	34.1	34.5	34.9	36.0	37.5
70.5°	36.0	35.8	35.0	34.4	32.8	32.6	32.8	33.3	33.6	34.8	36.3
71°	34.7	34.4	33.7	33.1	31.6	31.4	31.6	31.9	32.3	33.1	34.9
71.5°	33.3	33.2	32.4	31.9	30.3	30.2	30.2	30.7	30.9	32.3	33.6
72°	32.0	31.8	31.0	30.7	29.3	28.9	29.0	29.4	29.9	31.0	32.3
72.5°	30.8	30.5	29.8	29.3	28.0	27.7	27.8	28.1	28.5	29.7	31.0
73°	29.5	29.3	28.6	28.2	26.9	26.7	26.8	27.3	27.4	28.5	29.8
73.5°	28.5	28.4	27.4	27.0	25.6	25.7	25.6	25.8	26.2	27.5	28.6
74°	27.2	27.1	26.3	25.7	24.4	24.6	24.3	24.7	25.0	26.4	27.6
74.5°	26.1	25.9	25.1	24.6	23.2	23.3	23.2	23.5	23.9	25.1	26.4
75°	24.8	24.7	23.9	23.4	22.1	21.9	22.0	22.3	22.7	23.9	25.2
75.5°	23.6	23.4	22.8	22.2	20.9	20.7	20.9	21.1	21.7	22.8	24.0
76°	22.5	22.2	21.6	21.0	19.9	19.6	19.8	19.9	20.5	21.7	22.7
76.5°	21.4	21.1	20.4	20.0	19.0	18.4	18.6	18.8	19.4	20.5	21.5
77°	20.3	19.9	19.1	18.7	17.7	17.3	17.4	17.8	18.2	19.2	20.1
77.5°	19.1	18.9	18.1	17.6	16.5	16.5	16.7	16.6	17.1	18.1	18.9
78°	17.9	17.6	16.9	16.5	15.4	15.3	15.3	15.6	16.0	17.1	17.6
78.5°	16.9	16.6	15.9	15.4	14.5	14.1	14.4	14.5	15.1	15.9	16.5
79°	15.9	15.6	14.8	14.4	13.7	13.1	13.5	13.7	13.9	15.0	15.5
79.5°	14.9	14.5	13.8	13.3	12.4	12.4	12.6	12.5	12.9	13.8	14.5
80°	13.7	13.5	12.9	12.3	11.4	11.2	11.5	11.6	12.0	12.8	13.6
80.5°	12.7	12.4	11.9	11.3	10.4	10.2	10.5	10.6	11.1	11.8	12.7
81°	11.7	11.3	10.9	10.5	9.7	9.5	9.7	9.9	10.1	11.2	11.8
81.5°	10.8	10.4	9.9	9.6	8.6	8.7	8.7	8.9	9.1	10.1	11.2
82°	9.9	9.4	8.9	8.6	7.8	7.6	7.9	8.0	8.7	9.2	10.1
82.5°	9.1	8.4	8.1	7.8	7.0	7.0	7.2	7.2	7.4	8.5	9.2
83°	8.1	7.6	7.1	6.9	6.1	6.1	6.3	6.4	6.5	7.5	8.6
83.5°	7.3	6.8	6.4	6.1	5.3	5.3	5.7	6.1	6.2	6.6	7.6
84°	6.5	6.1	5.5	5.3	4.5	4.8	4.7	4.9	4.9	6.1	6.7
84.5°	5.7	5.3	4.8	4.6	3.8	3.9	4.1	4.1	4.1	4.9	6.1
85°	5.0	4.6	4.1	3.7	3.8	3.6	3.4	3.4	3.5	4.1	5.1
85.5°	4.3	4.0	3.3	3.1	2.5	2.6	2.9	2.7	2.9	3.5	4.5
86°	3.7	3.5	2.8	2.5	2.2	2.3	2.3	2.1	2.1	2.7	3.6
86.5°	3.1	3.0	2.2	2.0	1.7	2.1	1.9	1.7	2.0	2.1	3.1
87°	2.6	2.4	1.8	1.6	1.0	1.3	1.3	1.1	1.1	1.6	2.4
87.5°	2.1	1.9	1.5	1.2	0.7	0.8	1.0	0.8	0.6	1.1	2.0
88°	1.7	1.6	1.1	1.0	0.8	0.8	0.8	0.7	0.3	0.9	1.2
88.5°	1.2	1.2	0.7	0.7	0.2	0.6	0.8	0.1	0.0	0.2	0.7
89°	0.9	0.8	0.5	0.6	0.0	0.2	0.2	0.0	0.0	0.0	0.6
89.5°	0.7	0.6	0.3	0.3	0.1	0.0	0.2	0.0	0.0	0.0	0.2



TEST NUMBER: P1214541
 CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.4	0.3	0.3	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.2
90.5°	0.2	0.2	0.3	0.3	0.0	0.0	0.2	0.0	0.0	0.0	0.0
91°	0.0	0.2	0.2	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0
91.5°	0.0	0.0	0.1	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0
92°	0.0	0.0	0.1	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0
92.5°	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93°	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
93.5°	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
94°	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94.5°	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97°	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
106°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
106.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
109°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
109.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
111°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
111.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
112°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1214541
 CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
113°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
113.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
119°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
119.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
121°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
121.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
123°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
123.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
133°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
133.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
134°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
134.5°	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1214541
 CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
135°	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
135.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
136°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
136.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
138°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
138.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
139°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
139.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
141°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
141.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
143°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
143.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
144°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
144.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
146°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
146.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
148°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
148.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
149°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
149.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
151°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
151.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
153°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
153.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
154°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
154.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
156°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
156.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1214541
 CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
158°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
158.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
159°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
159.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
161°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
161.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
163°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
163.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
164°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
164.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
166°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
166.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
168°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
168.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
169°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
169.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
171°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
171.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
173°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
173.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
174°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
174.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
176°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
176.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
178°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
178.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
179°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
179.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1214541
CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1214541

CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	141.4	141.4	141.4	141.4	141.4	141.4
0.5°	141.5	141.2	141.4	141.2	140.9	141.9
1°	141.5	141.2	141.4	141.2	141.2	141.8
1.5°	141.5	141.2	141.4	141.2	141.1	141.8
2°	141.5	141.2	141.4	141.2	141.3	141.7
2.5°	141.5	141.2	141.4	141.2	141.7	141.7
3°	141.5	141.2	141.4	141.2	141.7	141.6
3.5°	141.5	141.2	141.4	141.1	141.7	141.4
4°	141.5	141.2	141.4	141.1	141.7	141.3
4.5°	141.5	141.2	141.5	141.1	141.9	141.1
5°	141.5	141.2	141.4	141.1	141.8	140.7
5.5°	141.5	141.2	141.6	141.1	141.8	140.4
6°	141.0	141.3	141.6	141.1	141.8	140.1
6.5°	140.4	141.1	141.4	141.2	141.8	139.9
7°	140.3	141.2	141.2	140.9	141.9	139.7
7.5°	140.3	140.9	141.2	140.9	141.9	139.5
8°	140.3	140.6	140.9	140.9	141.7	139.4
8.5°	140.2	140.4	140.9	140.9	141.4	139.1
9°	140.3	140.4	140.8	140.9	140.9	139.1
9.5°	140.3	140.0	140.8	141.0	140.7	139.0
10°	139.8	140.0	140.8	141.0	140.5	139.0
10.5°	139.3	140.1	140.5	140.8	140.2	138.7
11°	138.9	139.8	140.4	140.7	140.1	138.6
11.5°	138.8	139.5	140.1	140.7	139.7	138.3
12°	138.6	139.2	139.7	140.1	139.6	138.1
12.5°	138.1	138.9	139.4	139.8	139.4	137.8
13°	137.8	138.7	139.0	139.6	138.9	137.8
13.5°	137.6	138.5	138.8	139.3	138.6	137.6
14°	137.5	138.1	138.6	138.9	138.1	137.2
14.5°	137.4	137.9	138.3	138.3	137.6	136.8
15°	137.3	137.6	137.9	138.2	137.3	136.4
15.5°	136.8	137.1	137.4	138.1	136.9	136.1
16°	136.4	137.1	137.2	137.7	136.5	135.9
16.5°	136.4	136.8	136.9	137.2	136.3	135.4
17°	136.0	136.2	136.5	137.0	136.1	135.1
17.5°	135.5	135.6	136.2	136.5	135.8	134.7
18°	134.9	135.1	135.9	136.0	135.8	134.3
18.5°	134.7	134.9	135.8	136.0	135.4	133.7
19°	134.1	134.4	135.5	135.4	135.1	133.1
19.5°	133.7	133.9	135.3	135.1	134.8	132.4
20°	133.8	133.5	134.7	134.6	134.6	132.0
20.5°	132.6	132.8	134.4	134.1	133.9	131.6
21°	132.1	132.6	133.6	133.5	133.3	131.3
21.5°	132.0	132.0	133.0	133.1	132.7	130.9
22°	131.3	131.6	132.6	132.7	132.1	130.5



TEST NUMBER: P1214541

CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	130.8	131.2	132.0	132.4	132.0	130.2
23°	130.4	130.6	131.2	131.6	131.4	129.9
23.5°	129.7	129.9	130.6	131.4	130.7	129.4
24°	129.4	129.3	129.8	130.7	130.0	129.0
24.5°	128.7	128.9	129.3	130.1	129.5	128.5
25°	128.1	128.3	128.9	129.5	129.1	128.0
25.5°	127.6	127.6	128.1	129.0	128.4	127.0
26°	127.1	127.3	128.1	128.4	127.8	126.6
26.5°	126.7	126.6	127.4	128.1	127.1	126.0
27°	125.9	126.1	127.0	127.5	126.5	125.1
27.5°	125.4	125.7	126.3	127.0	125.9	124.5
28°	124.5	124.9	125.7	126.0	125.1	123.8
28.5°	124.0	124.2	125.0	125.4	124.4	122.9
29°	123.1	123.4	124.5	124.7	123.6	122.4
29.5°	122.3	122.8	123.7	124.2	123.0	121.7
30°	121.7	122.1	122.7	123.3	122.3	121.3
30.5°	121.3	121.2	122.0	122.6	121.7	120.6
31°	120.3	120.5	121.4	121.9	121.2	119.9
31.5°	119.9	119.7	120.9	121.1	120.5	119.3
32°	119.2	118.8	120.1	120.5	119.8	118.6
32.5°	118.5	118.0	119.6	120.1	119.4	117.7
33°	117.6	117.1	118.8	119.3	118.9	116.9
33.5°	117.2	116.3	118.1	118.6	118.1	115.8
34°	116.4	115.8	117.5	118.0	117.3	115.0
34.5°	115.6	114.9	116.8	117.2	116.7	114.4
35°	114.7	114.2	116.2	116.4	115.9	113.8
35.5°	113.9	113.5	115.4	115.6	115.2	113.1
36°	113.3	112.9	114.7	114.8	114.4	112.3
36.5°	112.6	112.1	113.7	114.3	113.8	111.4
37°	112.1	111.3	113.2	113.5	112.8	110.8
37.5°	111.1	110.7	112.3	112.6	111.8	110.3
38°	110.2	109.9	111.5	112.0	111.0	109.3
38.5°	109.4	108.8	110.6	111.3	110.0	108.2
39°	108.6	108.2	109.7	110.5	109.1	107.1
39.5°	107.9	107.4	108.9	109.3	108.3	106.3
40°	106.9	106.6	108.0	108.4	107.5	105.2
40.5°	105.9	105.8	107.1	107.6	106.7	104.4
41°	105.0	104.9	106.1	106.8	105.7	103.5
41.5°	104.4	104.2	105.1	105.9	104.9	102.7
42°	103.9	103.2	104.0	104.9	104.1	102.0
42.5°	102.7	102.4	103.1	104.0	103.3	101.2
43°	101.6	101.7	102.1	103.0	102.4	100.1
43.5°	100.8	100.5	101.3	102.1	101.4	99.4
44°	100.0	99.7	100.3	101.3	100.4	98.4
44.5°	99.0	98.7	99.5	100.3	99.6	97.6



TEST NUMBER: P1214541
 CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	98.2	97.8	98.5	99.5	98.8	96.5
45.5°	97.5	97.1	97.7	98.5	97.7	95.3
46°	96.4	96.2	96.9	97.8	96.7	94.5
46.5°	95.3	95.1	95.8	96.6	95.8	93.7
47°	94.3	94.0	94.5	95.8	94.6	92.9
47.5°	93.6	92.9	93.6	94.8	93.5	91.9
48°	91.9	92.2	92.6	93.6	92.4	90.9
48.5°	90.9	91.0	91.5	92.4	91.2	89.6
49°	89.7	90.1	90.6	91.0	90.1	88.4
49.5°	88.6	89.1	89.7	90.0	89.2	87.4
50°	87.8	88.0	88.9	88.7	87.9	86.2
50.5°	86.8	87.0	87.7	87.7	87.0	85.5
51°	85.7	85.8	86.5	86.7	86.0	84.4
51.5°	84.6	84.7	85.7	85.7	85.0	83.7
52°	83.5	83.8	84.6	84.9	83.9	82.2
52.5°	82.2	82.5	83.8	83.6	82.7	81.0
53°	80.9	81.5	82.2	82.3	81.3	80.0
53.5°	79.7	80.3	81.1	81.3	80.1	78.9
54°	78.6	79.3	79.9	80.3	78.8	77.5
54.5°	77.6	78.1	78.6	78.9	77.5	76.3
55°	76.3	76.9	77.6	77.8	76.6	75.0
55.5°	75.2	76.0	76.6	76.8	75.9	73.9
56°	74.1	74.6	75.2	75.7	74.9	72.8
56.5°	72.9	73.5	73.8	74.6	73.6	71.7
57°	71.8	72.2	72.7	72.9	72.1	70.6
57.5°	70.7	71.1	71.4	71.7	71.0	69.5
58°	69.8	69.8	70.5	70.5	69.7	68.5
58.5°	68.5	68.8	69.2	69.5	68.5	67.2
59°	67.2	67.5	68.0	68.2	67.2	65.8
59.5°	65.9	66.3	66.9	66.9	65.9	64.4
60°	64.6	64.9	65.6	65.5	64.6	63.2
60.5°	63.2	63.7	64.5	64.3	63.3	62.0
61°	62.0	62.6	63.5	63.4	62.1	60.7
61.5°	60.6	61.3	62.4	62.2	60.9	59.5
62°	59.5	60.1	61.0	60.7	59.7	58.4
62.5°	58.2	59.1	59.8	59.4	58.6	57.3
63°	57.0	57.7	58.4	58.1	57.3	55.9
63.5°	55.9	56.5	57.3	56.7	56.1	54.5
64°	54.8	55.2	55.8	55.6	54.8	53.4
64.5°	53.5	53.9	54.6	54.4	53.4	52.1
65°	52.3	52.7	53.3	53.2	52.0	50.8
65.5°	50.8	51.4	52.1	51.8	50.8	49.4
66°	49.4	50.1	50.7	50.4	49.4	48.3
66.5°	48.1	48.7	49.4	49.2	48.0	46.9
67°	46.5	47.5	48.0	47.9	46.6	45.5



TEST NUMBER: P1214541

CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	45.1	46.1	46.8	46.6	44.9	44.2
68°	43.7	44.8	45.4	45.3	43.7	42.8
68.5°	42.5	43.4	44.0	44.1	42.4	41.4
69°	41.3	42.2	42.8	42.9	41.1	40.0
69.5°	40.2	41.0	41.5	41.6	39.8	38.6
70°	38.7	39.6	40.0	40.3	38.5	37.2
70.5°	37.6	38.3	38.7	38.9	37.1	36.0
71°	36.3	37.1	37.4	37.7	35.8	34.7
71.5°	35.0	35.7	36.1	36.1	34.6	33.3
72°	33.8	34.4	34.8	35.0	33.3	32.0
72.5°	32.4	33.1	33.5	33.6	32.1	30.8
73°	31.2	31.9	32.2	32.2	30.9	29.5
73.5°	29.8	30.4	30.9	30.8	29.6	28.5
74°	28.6	29.3	29.6	29.6	28.6	27.2
74.5°	27.5	28.2	28.5	28.5	27.3	26.1
75°	26.2	27.0	27.3	27.2	26.1	24.8
75.5°	25.0	25.8	26.1	26.0	25.1	23.6
76°	23.8	24.4	24.7	24.8	23.9	22.5
76.5°	22.6	23.4	23.6	23.6	22.7	21.4
77°	21.4	22.1	22.4	22.4	21.5	20.3
77.5°	20.4	21.1	21.2	21.3	20.4	19.1
78°	19.3	19.9	20.1	20.1	19.3	17.9
78.5°	18.1	18.8	18.9	18.9	18.2	16.9
79°	16.9	17.6	17.8	17.9	17.1	15.9
79.5°	15.9	16.6	16.8	16.8	16.0	14.9
80°	14.9	15.5	15.7	15.7	15.0	13.7
80.5°	13.9	14.4	14.7	14.7	13.9	12.7
81°	12.7	13.5	13.7	13.6	13.0	11.7
81.5°	11.8	12.4	12.8	12.7	11.9	10.8
82°	10.8	11.4	11.8	11.8	11.0	9.9
82.5°	10.0	10.6	10.9	10.9	10.0	9.1
83°	9.0	9.5	10.0	10.0	9.2	8.1
83.5°	8.4	8.7	9.2	9.1	8.3	7.3
84°	7.3	8.0	8.3	8.2	7.5	6.5
84.5°	6.5	7.1	7.5	7.6	6.9	5.7
85°	6.1	6.2	6.8	6.9	6.0	5.0
85.5°	5.1	5.6	6.0	6.0	5.2	4.3
86°	4.7	4.9	5.4	5.3	4.5	3.7
86.5°	3.7	4.2	4.6	4.6	3.9	3.1
87°	3.2	3.5	4.0	3.9	3.3	2.6
87.5°	2.4	3.0	3.4	3.4	2.8	2.1
88°	1.9	2.5	2.8	2.8	2.4	1.7
88.5°	1.2	1.9	2.3	2.3	1.9	1.2
89°	1.1	1.5	1.8	1.8	1.5	0.9
89.5°	0.6	1.2	1.5	1.6	1.1	0.7



TEST NUMBER: P1214541
 CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.1	1.0	1.2	1.2	0.8	0.4
90.5°	0.1	0.7	0.8	0.8	0.6	0.2
91°	0.0	0.6	0.6	0.6	0.4	0.0
91.5°	0.0	0.3	0.5	0.3	0.3	0.0
92°	0.0	0.2	0.4	0.3	0.2	0.0
92.5°	0.0	0.2	0.3	0.2	0.2	0.0
93°	0.0	0.2	0.2	0.1	0.0	0.0
93.5°	0.0	0.1	0.2	0.1	0.0	0.0
94°	0.0	0.1	0.1	0.1	0.1	0.0
94.5°	0.0	0.1	0.1	0.0	0.0	0.0
95°	0.0	0.1	0.1	0.0	0.0	0.0
95.5°	0.0	0.0	0.1	0.0	0.0	0.0
96°	0.0	0.0	0.1	0.0	0.0	0.0
96.5°	0.0	0.0	0.1	0.0	0.0	0.0
97°	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	0.0	0.0	0.0	0.0	0.0	0.0
98°	0.0	0.0	0.0	0.0	0.0	0.0
98.5°	0.0	0.0	0.0	0.0	0.0	0.0
99°	0.0	0.0	0.0	0.0	0.0	0.0
99.5°	0.0	0.0	0.0	0.0	0.0	0.0
100°	0.0	0.0	0.1	0.0	0.0	0.0
100.5°	0.0	0.0	0.1	0.0	0.0	0.0
101°	0.0	0.0	0.0	0.0	0.0	0.0
101.5°	0.0	0.0	0.0	0.0	0.0	0.0
102°	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	0.0	0.0	0.0	0.0	0.0	0.0
103°	0.0	0.0	0.0	0.0	0.0	0.0
103.5°	0.0	0.0	0.0	0.0	0.0	0.0
104°	0.0	0.0	0.0	0.0	0.0	0.0
104.5°	0.0	0.0	0.0	0.0	0.0	0.0
105°	0.0	0.0	0.0	0.0	0.0	0.0
105.5°	0.0	0.0	0.0	0.0	0.0	0.0
106°	0.0	0.0	0.0	0.0	0.0	0.0
106.5°	0.0	0.0	0.0	0.0	0.0	0.0
107°	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	0.0	0.0	0.0	0.0	0.0	0.0
108°	0.0	0.0	0.0	0.0	0.0	0.0
108.5°	0.0	0.0	0.0	0.0	0.0	0.0
109°	0.0	0.0	0.0	0.0	0.0	0.0
109.5°	0.0	0.0	0.0	0.0	0.0	0.0
110°	0.0	0.0	0.0	0.0	0.0	0.0
110.5°	0.0	0.0	0.0	0.0	0.0	0.0
111°	0.0	0.0	0.0	0.0	0.0	0.0
111.5°	0.0	0.0	0.0	0.0	0.0	0.0
112°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1214541
CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	0.0	0.0	0.0	0.0	0.0	0.0
113°	0.0	0.0	0.0	0.0	0.0	0.0
113.5°	0.0	0.0	0.0	0.0	0.0	0.0
114°	0.0	0.0	0.0	0.0	0.0	0.0
114.5°	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0	0.0
115.5°	0.0	0.0	0.0	0.0	0.0	0.0
116°	0.0	0.0	0.0	0.0	0.0	0.0
116.5°	0.0	0.0	0.0	0.0	0.0	0.0
117°	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	0.0	0.0	0.0	0.0	0.0	0.0
118°	0.0	0.0	0.0	0.0	0.0	0.0
118.5°	0.0	0.0	0.0	0.0	0.0	0.0
119°	0.0	0.0	0.0	0.0	0.0	0.0
119.5°	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0	0.0
120.5°	0.0	0.0	0.0	0.0	0.0	0.0
121°	0.0	0.0	0.0	0.0	0.0	0.0
121.5°	0.0	0.0	0.0	0.0	0.0	0.0
122°	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0	0.0
123°	0.0	0.0	0.0	0.0	0.0	0.0
123.5°	0.0	0.0	0.0	0.0	0.0	0.0
124°	0.0	0.0	0.0	0.0	0.0	0.0
124.5°	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0
125.5°	0.0	0.0	0.0	0.0	0.0	0.0
126°	0.0	0.0	0.0	0.0	0.0	0.0
126.5°	0.0	0.0	0.0	0.0	0.0	0.0
127°	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0	0.0
128°	0.0	0.0	0.0	0.0	0.0	0.0
128.5°	0.0	0.0	0.0	0.0	0.0	0.0
129°	0.0	0.0	0.0	0.0	0.0	0.0
129.5°	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0
130.5°	0.0	0.0	0.0	0.0	0.0	0.0
131°	0.0	0.0	0.0	0.0	0.0	0.0
131.5°	0.0	0.0	0.0	0.0	0.0	0.0
132°	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0	0.0
133°	0.0	0.0	0.0	0.0	0.0	0.0
133.5°	0.0	0.0	0.0	0.0	0.0	0.0
134°	0.0	0.0	0.0	0.0	0.0	0.0
134.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1214541
CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
135°	0.0	0.0	0.0	0.0	0.0	0.0
135.5°	0.0	0.0	0.0	0.0	0.0	0.0
136°	0.0	0.0	0.0	0.0	0.0	0.0
136.5°	0.0	0.0	0.0	0.0	0.0	0.0
137°	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0	0.0
138°	0.0	0.0	0.0	0.0	0.0	0.0
138.5°	0.0	0.0	0.0	0.0	0.0	0.0
139°	0.0	0.0	0.0	0.0	0.0	0.0
139.5°	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0
140.5°	0.0	0.0	0.0	0.0	0.0	0.0
141°	0.0	0.0	0.0	0.0	0.0	0.0
141.5°	0.0	0.0	0.0	0.0	0.0	0.0
142°	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0
143°	0.0	0.0	0.0	0.0	0.0	0.0
143.5°	0.0	0.0	0.0	0.0	0.0	0.0
144°	0.0	0.0	0.0	0.0	0.0	0.0
144.5°	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0
145.5°	0.0	0.0	0.0	0.0	0.0	0.0
146°	0.0	0.0	0.0	0.0	0.0	0.0
146.5°	0.0	0.0	0.0	0.0	0.0	0.0
147°	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0
148°	0.0	0.0	0.0	0.0	0.0	0.0
148.5°	0.0	0.0	0.0	0.0	0.0	0.0
149°	0.0	0.0	0.0	0.0	0.0	0.0
149.5°	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0
150.5°	0.0	0.0	0.0	0.0	0.0	0.0
151°	0.0	0.0	0.0	0.0	0.0	0.0
151.5°	0.0	0.0	0.0	0.0	0.0	0.0
152°	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0
153°	0.0	0.0	0.0	0.0	0.0	0.0
153.5°	0.0	0.0	0.0	0.0	0.0	0.0
154°	0.0	0.0	0.0	0.0	0.0	0.0
154.5°	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0
155.5°	0.0	0.0	0.0	0.0	0.0	0.0
156°	0.0	0.0	0.0	0.0	0.0	0.0
156.5°	0.0	0.0	0.0	0.0	0.0	0.0
157°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1214541
CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
157.5°	0.0	0.0	0.0	0.0	0.0	0.0
158°	0.0	0.0	0.0	0.0	0.0	0.0
158.5°	0.0	0.0	0.0	0.0	0.0	0.0
159°	0.0	0.0	0.0	0.0	0.0	0.0
159.5°	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0
160.5°	0.0	0.0	0.0	0.0	0.0	0.0
161°	0.0	0.0	0.0	0.0	0.0	0.0
161.5°	0.0	0.0	0.0	0.0	0.0	0.0
162°	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0
163°	0.0	0.0	0.0	0.0	0.0	0.0
163.5°	0.0	0.0	0.0	0.0	0.0	0.0
164°	0.0	0.0	0.0	0.0	0.0	0.0
164.5°	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0
165.5°	0.0	0.0	0.0	0.0	0.0	0.0
166°	0.0	0.0	0.0	0.0	0.0	0.0
166.5°	0.0	0.0	0.0	0.0	0.0	0.0
167°	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0
168°	0.0	0.0	0.0	0.0	0.0	0.0
168.5°	0.0	0.0	0.0	0.0	0.0	0.0
169°	0.0	0.0	0.0	0.0	0.0	0.0
169.5°	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0
170.5°	0.0	0.0	0.0	0.0	0.0	0.0
171°	0.0	0.0	0.0	0.0	0.0	0.0
171.5°	0.0	0.0	0.0	0.0	0.0	0.0
172°	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0
173°	0.0	0.0	0.0	0.0	0.0	0.0
173.5°	0.0	0.0	0.0	0.0	0.0	0.0
174°	0.0	0.0	0.0	0.0	0.0	0.0
174.5°	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0
175.5°	0.0	0.0	0.0	0.0	0.0	0.0
176°	0.0	0.0	0.0	0.0	0.0	0.0
176.5°	0.0	0.0	0.0	0.0	0.0	0.0
177°	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0
178°	0.0	0.0	0.0	0.0	0.0	0.0
178.5°	0.0	0.0	0.0	0.0	0.0	0.0
179°	0.0	0.0	0.0	0.0	0.0	0.0
179.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1214541
CATALOG NUMBER: HFL4001S/HFL4002S-930

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
180°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1214541
 CATALOG NUMBER: HFL4001S/HFL4002S-930

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	25.7	27.3	26.1	27.6	27.9	25.3	27.0	25.7	27.3	27.6
	3H	27.4	28.8	27.7	29.2	29.5	26.9	28.4	27.3	28.7	29.1
	4H	27.9	29.3	28.3	29.7	30.1	27.4	28.8	27.8	29.2	29.6
	6H	28.3	29.6	28.7	30.0	30.4	27.8	29.1	28.2	29.4	29.8
	8H	28.4	29.7	28.8	30.0	30.4	27.8	29.1	28.3	29.4	29.8
	12H	28.5	29.7	28.9	30.0	30.5	27.9	29.0	28.3	29.4	29.8
4H	2H	26.3	27.7	26.7	28.0	28.4	25.9	27.3	26.3	27.7	28.1
	3H	28.2	29.4	28.6	29.8	30.2	27.7	28.9	28.1	29.3	29.7
	4H	28.9	29.9	29.3	30.4	30.8	28.4	29.4	28.8	29.8	30.3
	6H	29.4	30.3	29.8	30.7	31.2	28.8	29.7	29.2	30.1	30.6
	8H	29.5	30.4	30.0	30.8	31.3	28.9	29.7	29.3	30.2	30.6
	12H	29.6	30.4	30.1	30.8	31.3	28.9	29.7	29.4	30.2	30.6
8H	4H	29.2	30.0	29.6	30.5	30.9	28.6	29.5	29.1	29.9	30.4
	6H	29.8	30.5	30.3	31.0	31.4	29.1	29.8	29.6	30.3	30.8
	8H	30.0	30.6	30.5	31.1	31.6	29.3	29.9	29.8	30.4	30.9
	12H	30.1	30.6	30.6	31.1	31.7	29.3	29.9	29.8	30.4	30.9
12H	4H	29.2	30.0	29.7	30.4	30.9	28.6	29.4	29.1	29.9	30.4
	6H	29.8	30.5	30.3	30.9	31.4	29.2	29.8	29.7	30.3	30.8
	8H	30.0	30.6	30.5	31.1	31.7	29.3	29.9	29.8	30.4	30.9

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

Halo Track & Surface

Report Number: SP1-2509-560-2

Test Date: 10/10/2025

Luminaire Tested: HFLESD4-HFL4001S-HFLP60A-930

Data in this report applies to families of products including HFLESD4-HFL4001S-HFLP60A*

The results of this test have not been influenced by sources from within Eaton or from external interests.

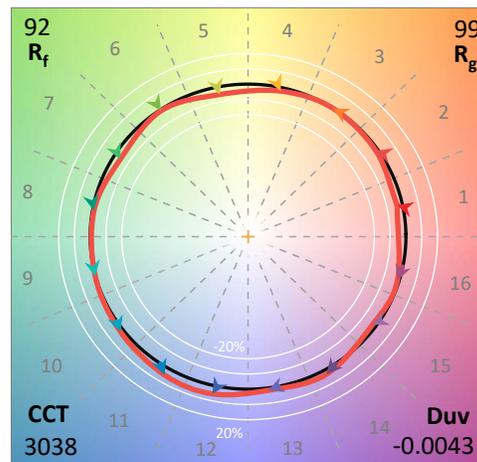
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2509-560-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/20/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Halo Track & Surface
 Catalog Number: **HFLESD4-HFL4001S-HFLP60A-930**
 Description: HALO FLEX LINEAR 4 SURFACE MOUNT DEEP 400LM/FT 60W UNV

Spectral Parameters

CCT (K): 3038
 CIE u': 0.2508
 CIE v': 0.5146
 Duv: -0.0043
 CIE x: 0.4282
 CIE y: 0.3905
 CIE z: 0.1812
 Peak Wavelength (nm): 618
 Dominant Wavelength (nm): 584
 Purity: 45.7
 R_f: 91.7
 R_g: 98.9

CRI (Ra):	94.5		
R1:	98.2	R9:	75.3
R2:	97.4	R10:	96.1
R3:	95.8	R11:	97.6
R4:	95.8	R12:	82.2
R5:	97.6	R13:	99.0
R6:	93.3	R14:	98.8
R7:	90.9	R15:	96.0
R8:	86.8		



Test Conditions

Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 25.3

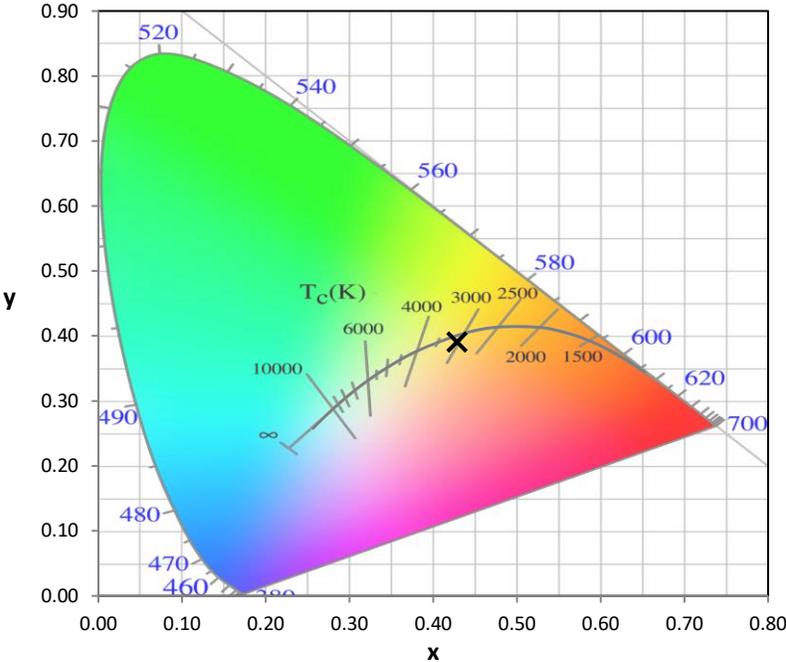
REPORT NUMBER: SP1-2509-560-2

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	1/21/2025	1/21/2026
AC Power Source	CHROMA 61603 IN0063	10/22/2024	10/22/2025
DC Power Source	AGILENT E3634A IN0208	10/22/2024	10/22/2025
Sphere Thermometer	ONSET IN0085	10/22/2024	10/22/2025
Room Thermometer	ONSET IN0046	10/22/2024	10/22/2025

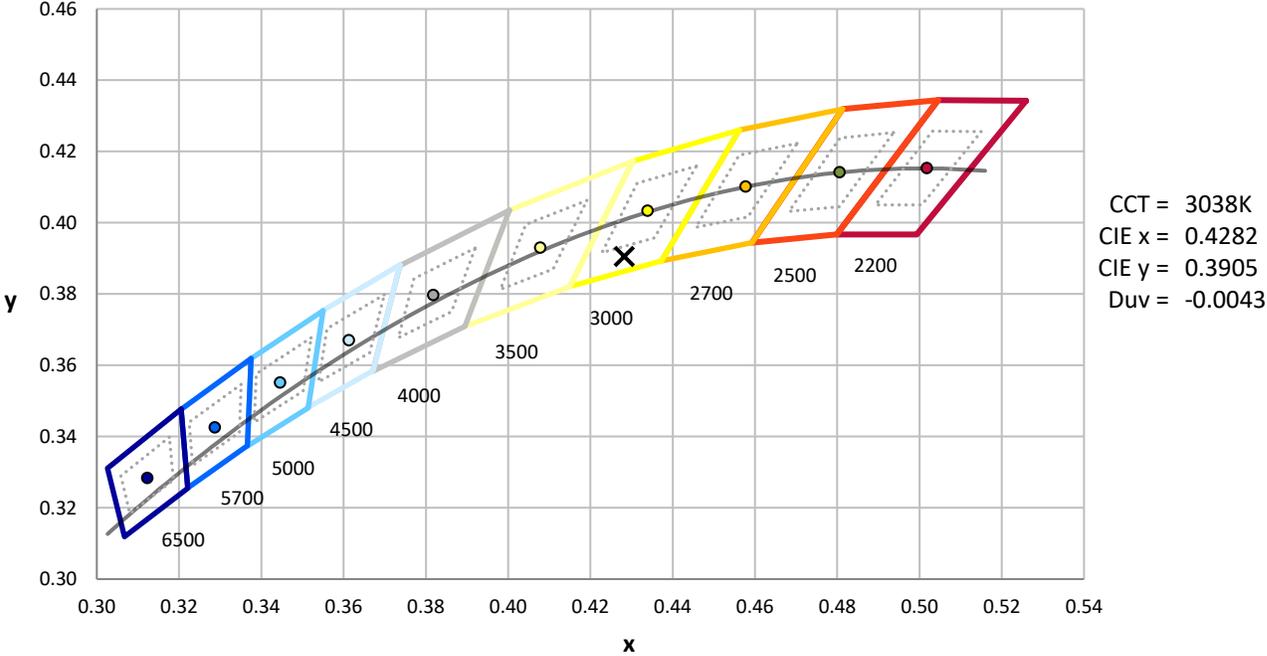
Sample Number	Condition	Description
P2509-560-LM.4	Good	EX LINEAR 4' SURFACE MOUNT DEEP, 400LM/FT 6

REPORT NUMBER: SP1-2509-560-2

CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles

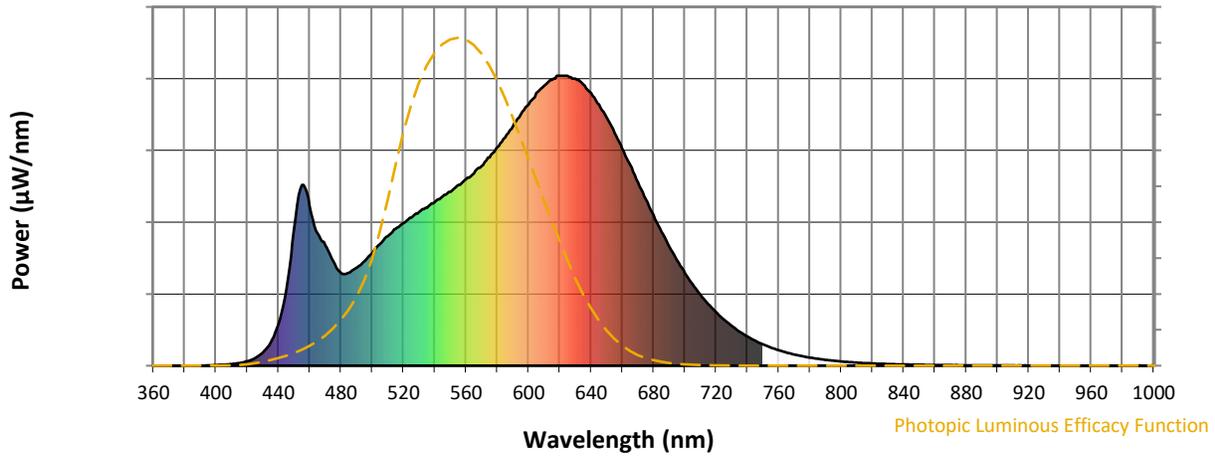


CCT = 3038K
 CIE x = 0.4282
 CIE y = 0.3905
 Duv = -0.0043

Point lies inside the ANSI 3000K 7-step quadrangle

REPORT NUMBER: SP1-2509-560-2

Photopic Flux vs. Wavelength

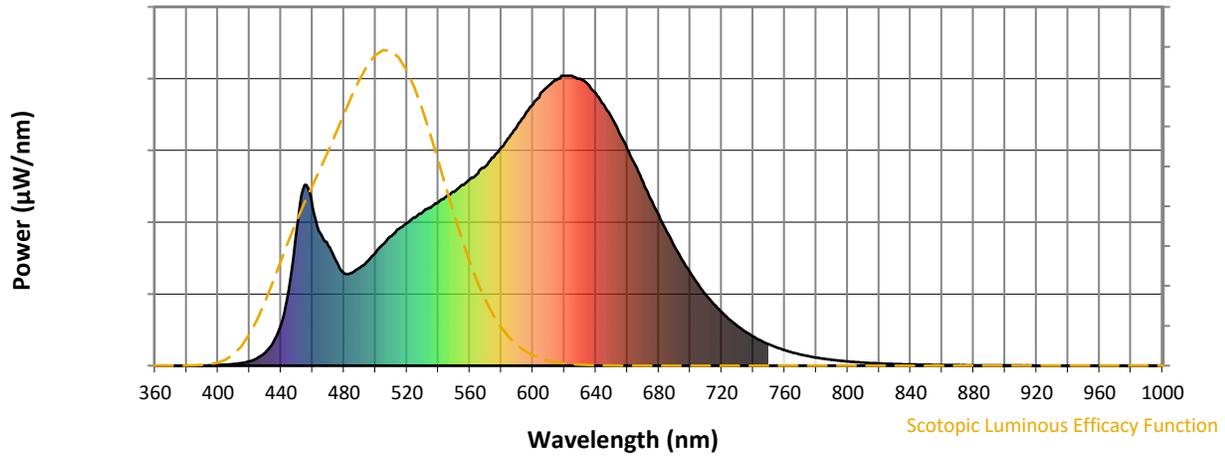


Photopic Lumens: NR

λ (nm)	Power W^{\wedge}/nm	Lumens (ϕ/nm)	λ (nm)	Power W^{\wedge}/nm	Lumens (ϕ/nm)	λ (nm)	Power W^{\wedge}/nm	Lumens (ϕ/nm)	λ (nm)	Power W^{\wedge}/nm	Lumens (ϕ/nm)	λ (nm)	Power W^{\wedge}/nm	Lumens (ϕ/nm)
360	0	NR	490	339	NR	620	1000	NR	750	73	NR	880	1	NR
365	0	NR	495	360	NR	625	1000	NR	755	63	NR	885	1	NR
370	0	NR	500	389	NR	630	990	NR	760	53	NR	890	1	NR
375	0	NR	505	419	NR	635	970	NR	765	46	NR	895	1	NR
380	0	NR	510	447	NR	640	941	NR	770	39	NR	900	1	NR
385	0	NR	515	472	NR	645	901	NR	775	33	NR	905	1	NR
390	0	NR	520	492	NR	650	856	NR	780	28	NR	910	1	NR
395	1	NR	525	510	NR	655	802	NR	785	24	NR	915	1	NR
400	2	NR	530	530	NR	660	748	NR	790	20	NR	920	1	NR
405	3	NR	535	545	NR	665	693	NR	795	17	NR	925	0	NR
410	6	NR	540	564	NR	670	634	NR	800	15	NR	930	0	NR
415	9	NR	545	584	NR	675	574	NR	805	13	NR	935	1	NR
420	15	NR	550	599	NR	680	520	NR	810	11	NR	940	0	NR
425	26	NR	555	624	NR	685	462	NR	815	9	NR	945	0	NR
430	45	NR	560	644	NR	690	412	NR	820	8	NR	950	0	NR
435	81	NR	565	663	NR	695	364	NR	825	7	NR	955	0	NR
440	143	NR	570	688	NR	700	320	NR	830	6	NR	960	0	NR
445	263	NR	575	718	NR	705	281	NR	835	5	NR	965	0	NR
450	471	NR	580	752	NR	710	245	NR	840	4	NR	970	0	NR
455	624	NR	585	787	NR	715	212	NR	845	4	NR	975	0	NR
460	550	NR	590	827	NR	720	185	NR	850	3	NR	980	0	NR
465	457	NR	595	866	NR	725	159	NR	855	3	NR	985	0	NR
470	413	NR	600	901	NR	730	137	NR	860	2	NR	990	0	NR
475	361	NR	605	941	NR	735	117	NR	865	2	NR	995	0	NR
480	320	NR	610	965	NR	740	100	NR	870	2	NR	1000	0	NR
485	321	NR	615	985	NR	745	87	NR	875	2	NR			

REPORT NUMBER: SP1-2509-560-2

Scotopic Flux vs. Wavelength



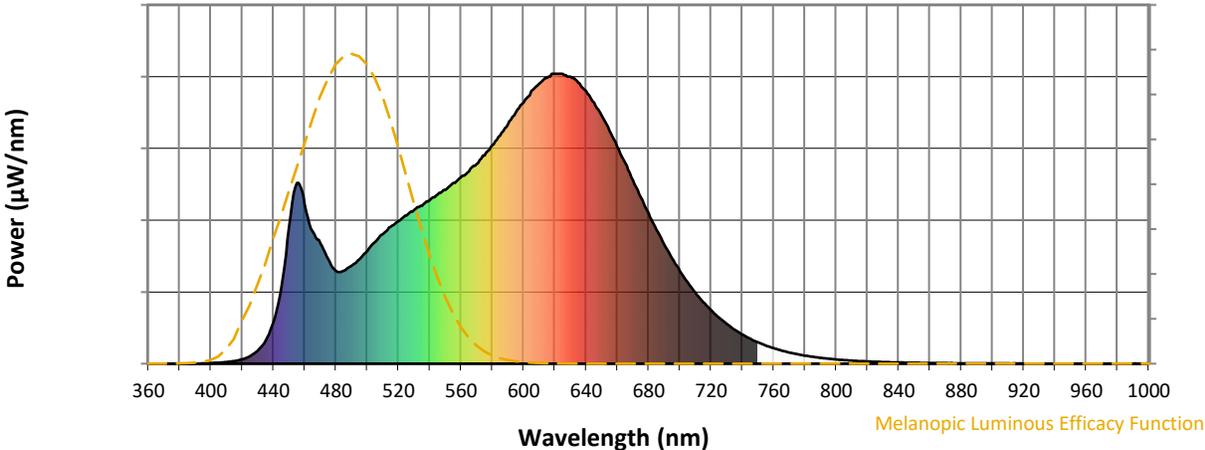
Scotopic Lumens: NR

S/P: 1.53

λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	339	NR	620	1000	NR	750	73	NR	880	1	NR
365	0	NR	495	360	NR	625	1000	NR	755	63	NR	885	1	NR
370	0	NR	500	389	NR	630	990	NR	760	53	NR	890	1	NR
375	0	NR	505	419	NR	635	970	NR	765	46	NR	895	1	NR
380	0	NR	510	447	NR	640	941	NR	770	39	NR	900	1	NR
385	0	NR	515	472	NR	645	901	NR	775	33	NR	905	1	NR
390	0	NR	520	492	NR	650	856	NR	780	28	NR	910	1	NR
395	1	NR	525	510	NR	655	802	NR	785	24	NR	915	1	NR
400	2	NR	530	530	NR	660	748	NR	790	20	NR	920	1	NR
405	3	NR	535	545	NR	665	693	NR	795	17	NR	925	0	NR
410	6	NR	540	564	NR	670	634	NR	800	15	NR	930	0	NR
415	9	NR	545	584	NR	675	574	NR	805	13	NR	935	1	NR
420	15	NR	550	599	NR	680	520	NR	810	11	NR	940	0	NR
425	26	NR	555	624	NR	685	462	NR	815	9	NR	945	0	NR
430	45	NR	560	644	NR	690	412	NR	820	8	NR	950	0	NR
435	81	NR	565	663	NR	695	364	NR	825	7	NR	955	0	NR
440	143	NR	570	688	NR	700	320	NR	830	6	NR	960	0	NR
445	263	NR	575	718	NR	705	281	NR	835	5	NR	965	0	NR
450	471	NR	580	752	NR	710	245	NR	840	4	NR	970	0	NR
455	624	NR	585	787	NR	715	212	NR	845	4	NR	975	0	NR
460	550	NR	590	827	NR	720	185	NR	850	3	NR	980	0	NR
465	457	NR	595	866	NR	725	159	NR	855	3	NR	985	0	NR
470	413	NR	600	901	NR	730	137	NR	860	2	NR	990	0	NR
475	361	NR	605	941	NR	735	117	NR	865	2	NR	995	0	NR
480	320	NR	610	965	NR	740	100	NR	870	2	NR	1000	0	NR
485	321	NR	615	985	NR	745	87	NR	875	2	NR			

REPORT NUMBER: SP1-2509-560-2

Melanopic Flux vs. Wavelength



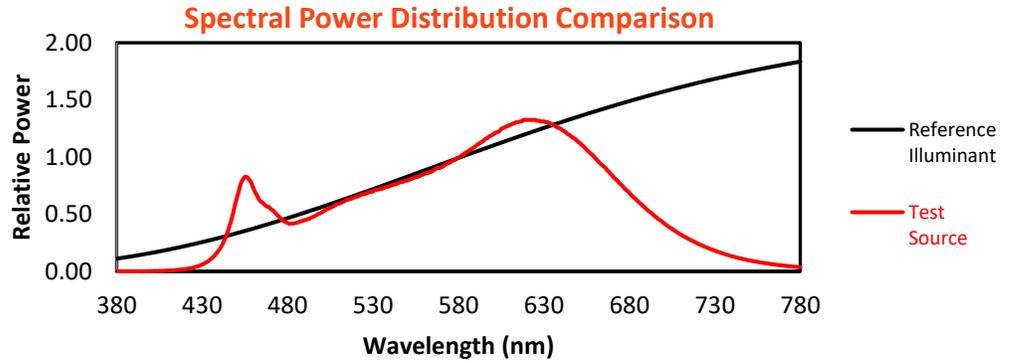
Melanopic Lumens: NR

M/P: 3.12

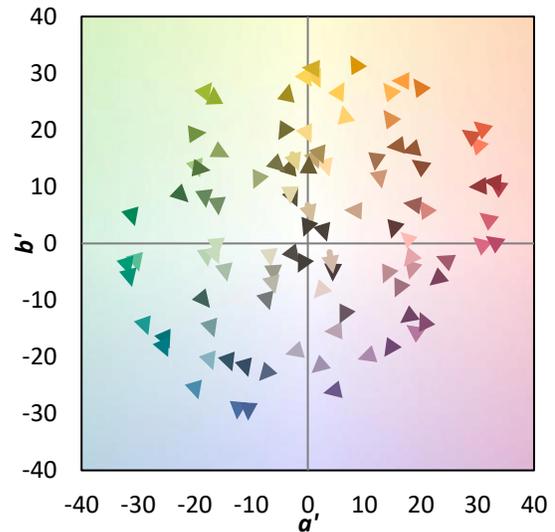
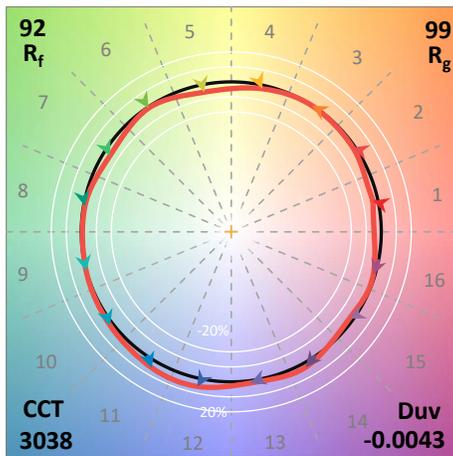
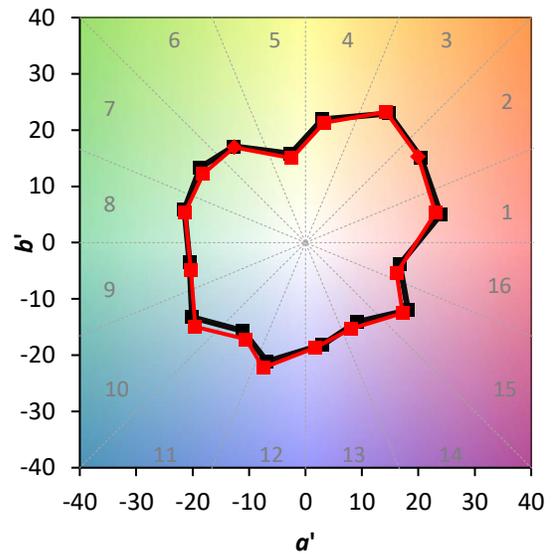
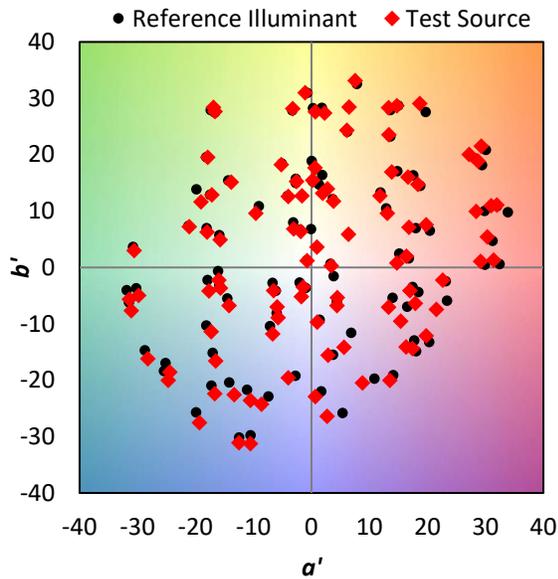
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	339	NR	620	1000	NR	750	73	NR	880	1	NR
365	0	NR	495	360	NR	625	1000	NR	755	63	NR	885	1	NR
370	0	NR	500	389	NR	630	990	NR	760	53	NR	890	1	NR
375	0	NR	505	419	NR	635	970	NR	765	46	NR	895	1	NR
380	0	NR	510	447	NR	640	941	NR	770	39	NR	900	1	NR
385	0	NR	515	472	NR	645	901	NR	775	33	NR	905	1	NR
390	0	NR	520	492	NR	650	856	NR	780	28	NR	910	1	NR
395	1	NR	525	510	NR	655	802	NR	785	24	NR	915	1	NR
400	2	NR	530	530	NR	660	748	NR	790	20	NR	920	1	NR
405	3	NR	535	545	NR	665	693	NR	795	17	NR	925	0	NR
410	6	NR	540	564	NR	670	634	NR	800	15	NR	930	0	NR
415	9	NR	545	584	NR	675	574	NR	805	13	NR	935	1	NR
420	15	NR	550	599	NR	680	520	NR	810	11	NR	940	0	NR
425	26	NR	555	624	NR	685	462	NR	815	9	NR	945	0	NR
430	45	NR	560	644	NR	690	412	NR	820	8	NR	950	0	NR
435	81	NR	565	663	NR	695	364	NR	825	7	NR	955	0	NR
440	143	NR	570	688	NR	700	320	NR	830	6	NR	960	0	NR
445	263	NR	575	718	NR	705	281	NR	835	5	NR	965	0	NR
450	471	NR	580	752	NR	710	245	NR	840	4	NR	970	0	NR
455	624	NR	585	787	NR	715	212	NR	845	4	NR	975	0	NR
460	550	NR	590	827	NR	720	185	NR	850	3	NR	980	0	NR
465	457	NR	595	866	NR	725	159	NR	855	3	NR	985	0	NR
470	413	NR	600	901	NR	730	137	NR	860	2	NR	990	0	NR
475	361	NR	605	941	NR	735	117	NR	865	2	NR	995	0	NR
480	320	NR	610	965	NR	740	100	NR	870	2	NR	1000	0	NR
485	321	NR	615	985	NR	745	87	NR	875	2	NR			

Summary

$R_f = 91.7$
 $R_g = 98.9$
 $CIE R_a = 94.5$
 $R_9 = 75.3$

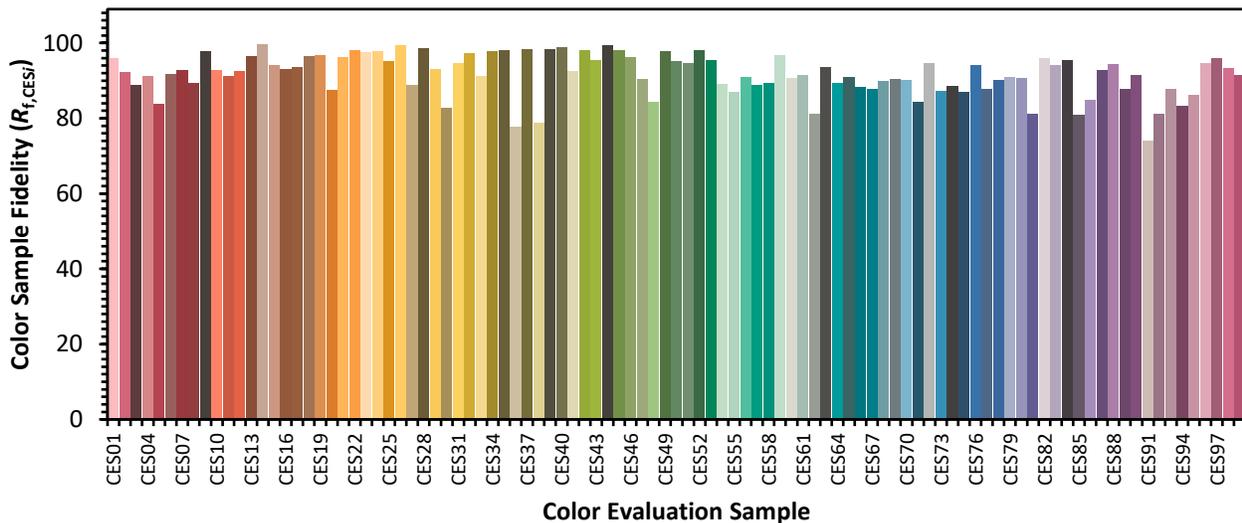


Color Vector Graphics

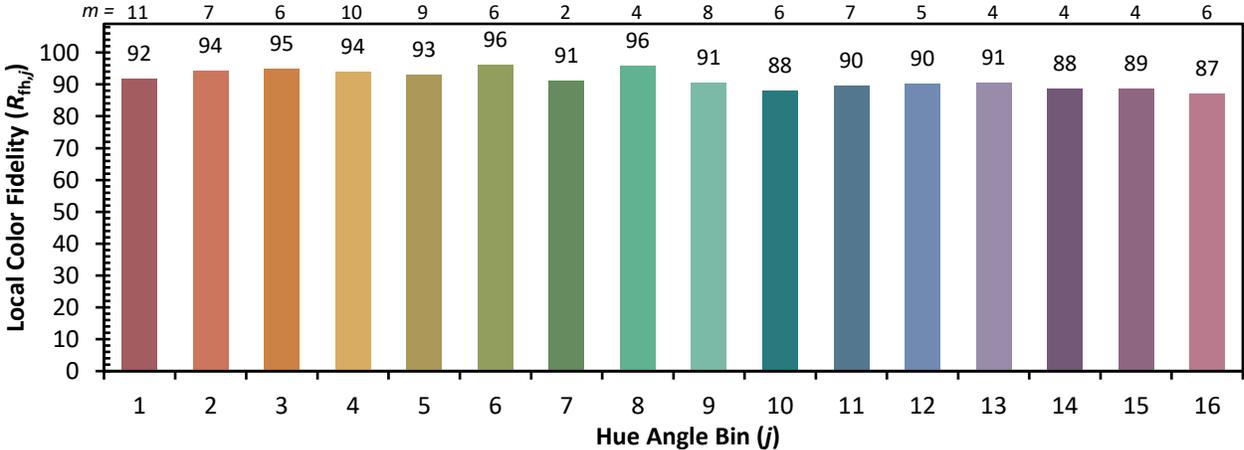
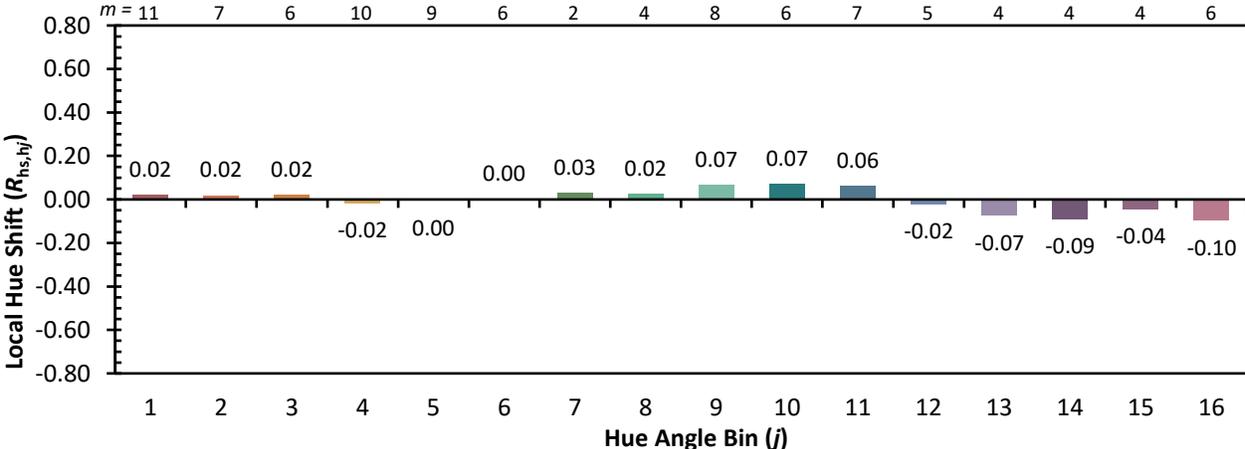
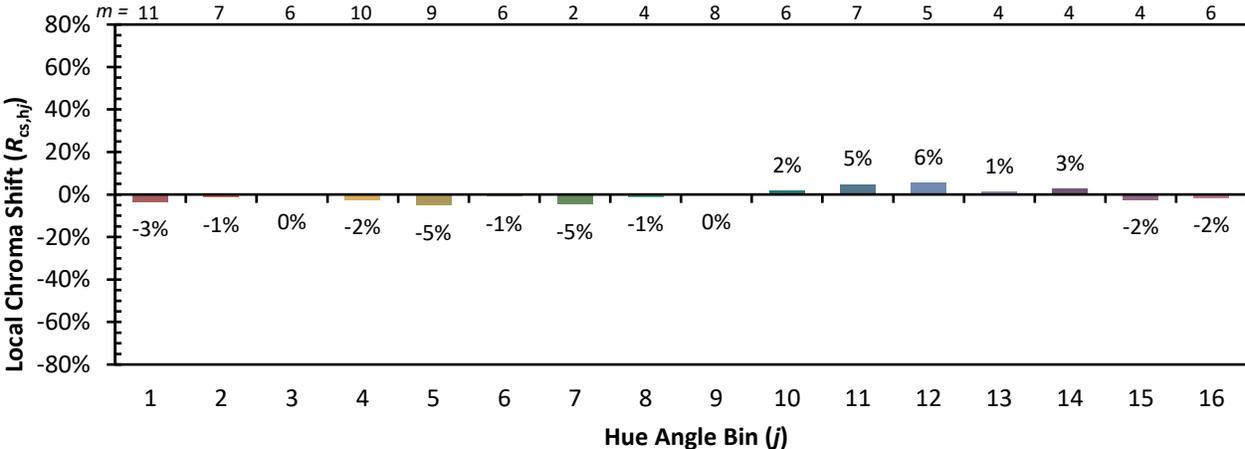


Individual Sample Fidelity Index ($R_{f,i}$)

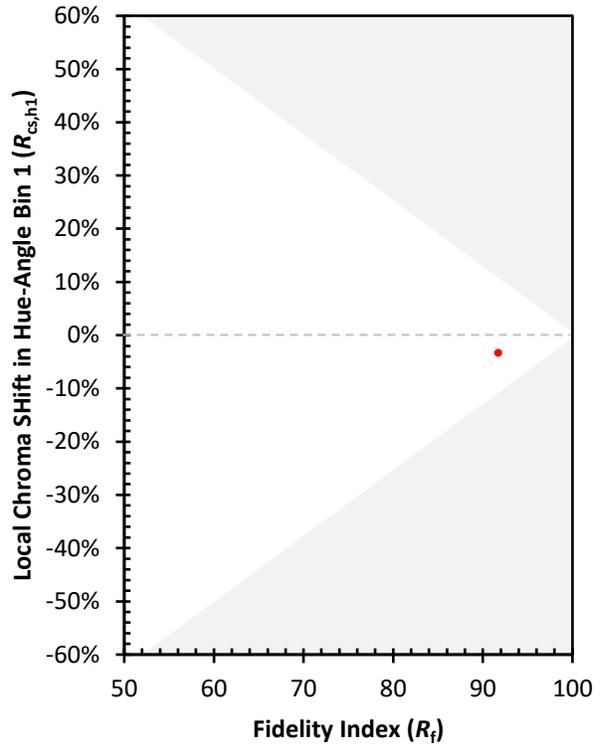
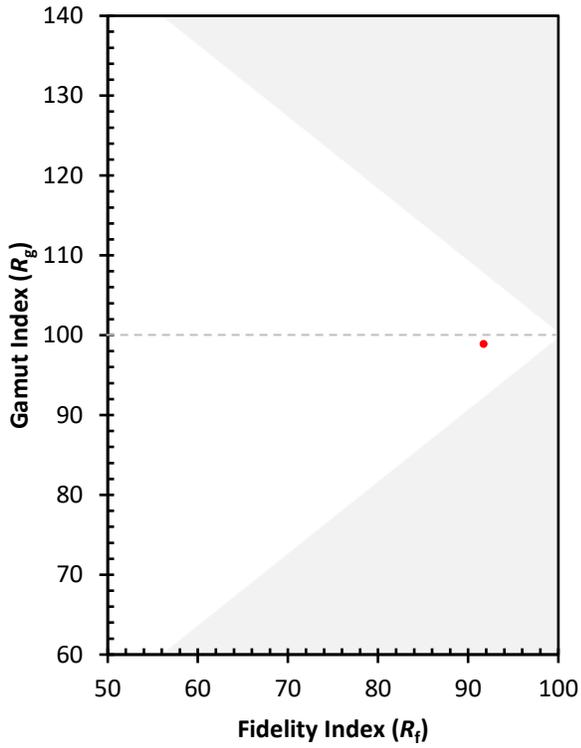
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CES02 = 63	CES27 = 89	CES52 = 98	CES77 = 88
CES03 = 32	CES28 = 99	CES53 = 95	CES78 = 90
CES04 = 70	CES29 = 93	CES54 = 89	CES79 = 91
CES05 = 51	CES30 = 83	CES55 = 87	CES80 = 91
CES06 = 51	CES31 = 95	CES56 = 91	CES81 = 81
CES07 = 44	CES32 = 97	CES57 = 89	CES82 = 96
CES08 = 42	CES33 = 91	CES58 = 89	CES83 = 94
CES09 = 29	CES34 = 98	CES59 = 97	CES84 = 96
CES10 = 76	CES35 = 98	CES60 = 91	CES85 = 81
CES11 = 59	CES36 = 78	CES61 = 92	CES86 = 85
CES12 = 65	CES37 = 98	CES62 = 81	CES87 = 93
CES13 = 44	CES38 = 79	CES63 = 94	CES88 = 94
CES14 = 74	CES39 = 98	CES64 = 89	CES89 = 88
CES15 = 72	CES40 = 99	CES65 = 91	CES90 = 91
CES16 = 48	CES41 = 93	CES66 = 88	CES91 = 74
CES17 = 50	CES42 = 98	CES67 = 88	CES92 = 81
CES18 = 57	CES43 = 95	CES68 = 90	CES93 = 88
CES19 = 72	CES44 = 99	CES69 = 90	CES94 = 83
CES20 = 67	CES45 = 98	CES70 = 90	CES95 = 86
CES21 = 86	CES46 = 96	CES71 = 84	CES96 = 95
CES22 = 79	CES47 = 90	CES72 = 95	CES97 = 96
CES23 = 92	CES48 = 84	CES73 = 87	CES98 = 93
CES24 = 90	CES49 = 98	CES74 = 89	CES99 = 92
CES25 = 72	CES50 = 95	CES75 = 87	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)