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## Hawko Lighting Group Australia

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LumCAT: Superflex-IP20-4000k-Samsung

Luminaire: LED Strip

Report No: BSR1501190201-10

Voltage(V): 23.9900

Test No: BSR1501190201-10

Current(A): 0.6180

LampCAT:

Power (W): 14.8300

Lamp flux(lm)

PF: 1.0000

Number of Lamps: 70

Ballast type:

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1691.98

Lumens(lm)/Power(W): 114.09

Central intensity(cd): 566.089

Maximum intensity(cd): 570.515

Angle of maximum intensity: C=90.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=114.6

[C90/270]Total=115.1

Field angle(10%Imax): [C0/180]Total=162.3

[C90/270]Total=165.2

Maximum s/h(1/2): C0\_180=1.30 C90\_270=1.24

Maximum s/h(1/4): C0\_180=2.62 C90\_270=1.92

Up flux rate of LUM(%): 1.53%

Down flux rate of LUM(%): 98.47%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 76.453%

# Hawko Lighting Group Australia Superflex-IP20-4000k-Samsung

Zonal flux distribution table

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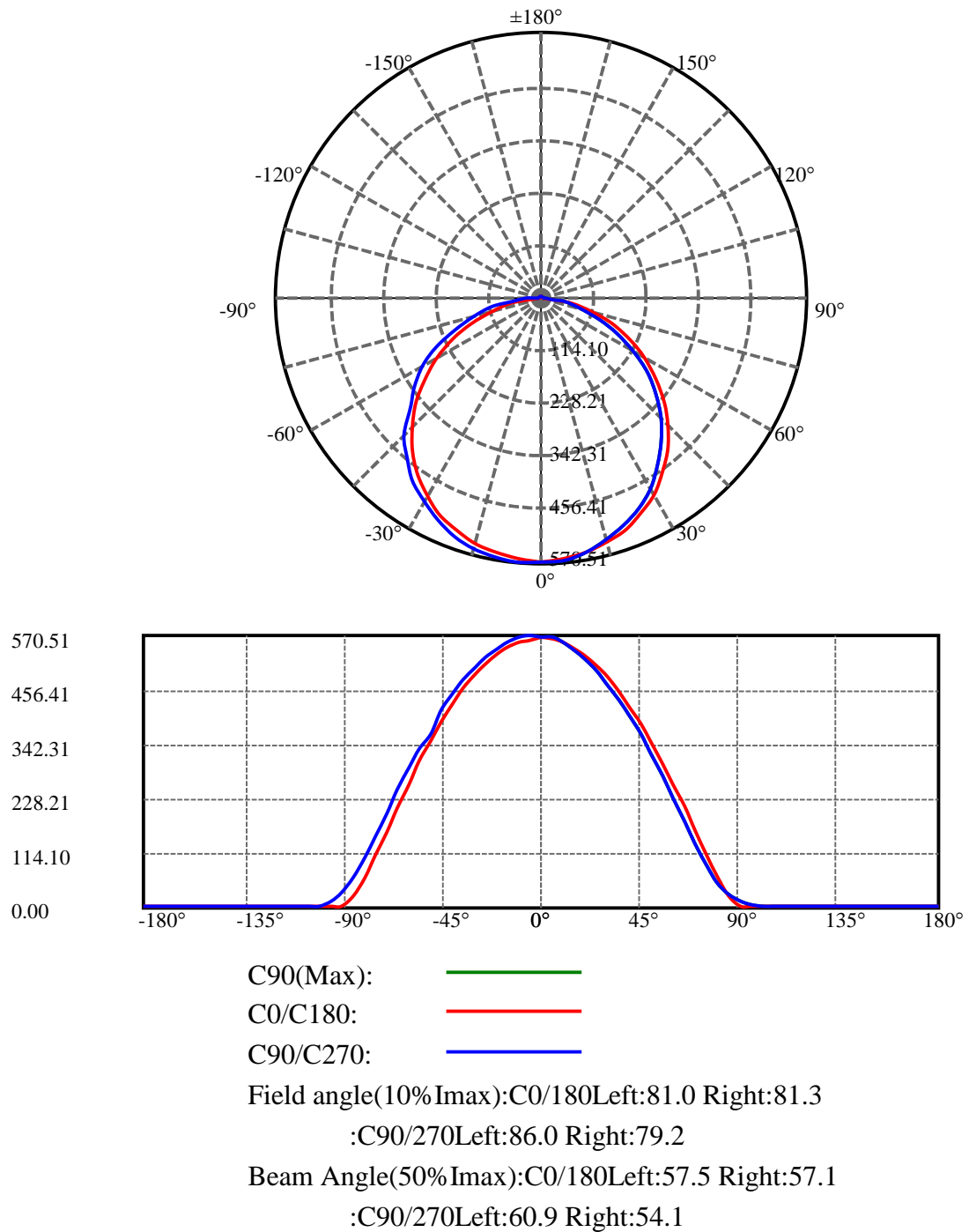
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	566.089	.000	.000	.000%	.000%
5.0	563.697	13.506	13.506	.798%	.798%
10.0	556.123	40.059	53.566	2.368%	3.166%
15.0	544.351	65.279	118.845	3.858%	7.024%
20.0	528.787	88.442	207.287	5.227%	12.251%
25.0	507.767	108.715	316.002	6.425%	18.676%
30.0	484.459	125.567	441.569	7.421%	26.098%
35.0	454.504	138.269	579.838	8.172%	34.270%
40.0	421.494	146.154	725.992	8.638%	42.908%
45.0	386.489	149.605	875.596	8.842%	51.750%
50.0	345.565	147.922	1023.518	8.743%	60.492%
55.0	301.779	140.754	1164.273	8.319%	68.811%
60.0	257.609	129.301	1293.574	7.642%	76.453%
65.0	210.554	113.811	1407.385	6.727%	83.180%
70.0	161.752	94.270	1501.655	5.572%	88.751%
75.0	113.868	72.042	1573.698	4.258%	93.009%
80.0	71.101	49.492	1623.190	2.925%	95.934%
85.0	36.291	29.181	1652.371	1.725%	97.659%
90.0	14.128	13.805	1666.176	.816%	98.475%
95.0	6.419	5.626	1671.802	.333%	98.807%
100.0	3.493	2.693	1674.495	.159%	98.967%
105.0	2.974	1.730	1676.226	.102%	99.069%
110.0	3.031	1.569	1677.795	.093%	99.162%
115.0	3.129	1.560	1679.355	.092%	99.254%
120.0	3.229	1.546	1680.900	.091%	99.345%
125.0	3.341	1.519	1682.419	.090%	99.435%
130.0	3.445	1.475	1683.894	.087%	99.522%
135.0	3.529	1.409	1685.303	.083%	99.605%
140.0	3.597	1.319	1686.623	.078%	99.683%
145.0	3.604	1.201	1687.824	.071%	99.754%
150.0	3.633	1.066	1688.889	.063%	99.817%
155.0	3.659	.923	1689.812	.055%	99.872%
160.0	3.685	.770	1690.583	.046%	99.917%
165.0	3.696	.608	1691.191	.036%	99.953%
170.0	3.693	.438	1691.629	.026%	99.979%
175.0	3.677	.264	1691.893	.016%	99.995%
180.0	3.741	.089	1691.981	.005%	100.000%

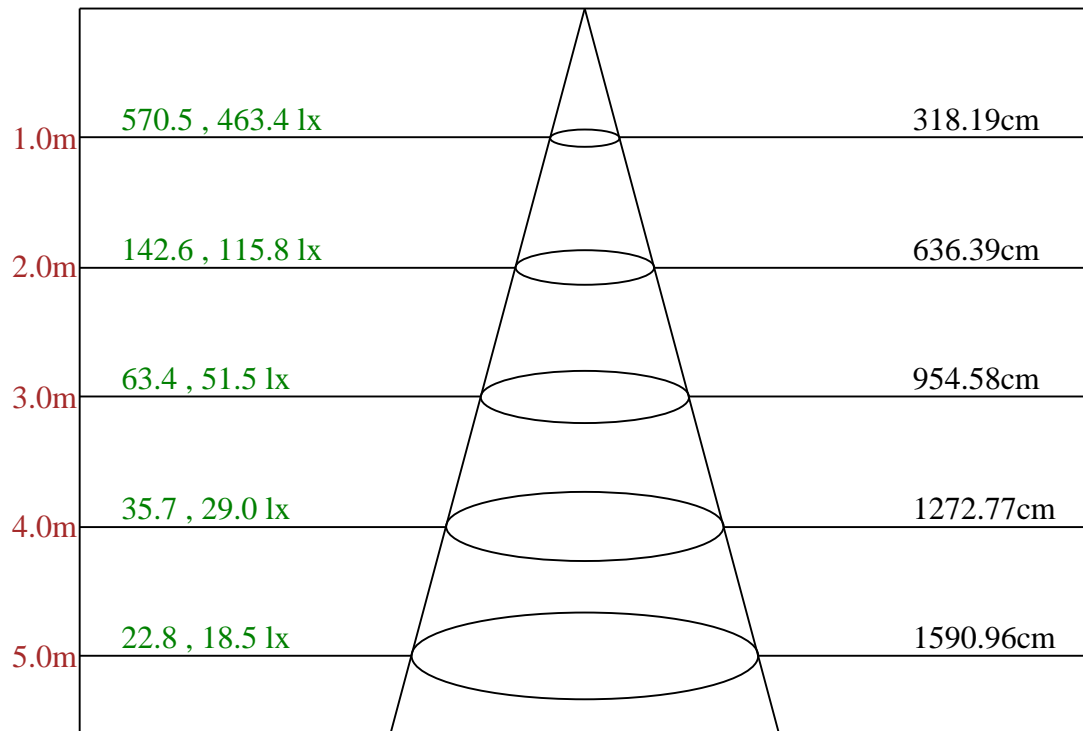
ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-30	441.57	26.10%
0-40	725.99	42.91%
0-60	1293.57	76.45%
0-90	1666.18	98.47%
0-120	1680.90	99.35%
0-180	1691.98	100.00%
60-90	501.90	29.66%
90-120	28.53	1.69%
90-130	31.52	1.86%
90-150	36.52	2.16%
90-180	39.52	2.34%
0-62.64	1353.59	80.00%

ZONAL LUMEN SUMMARY

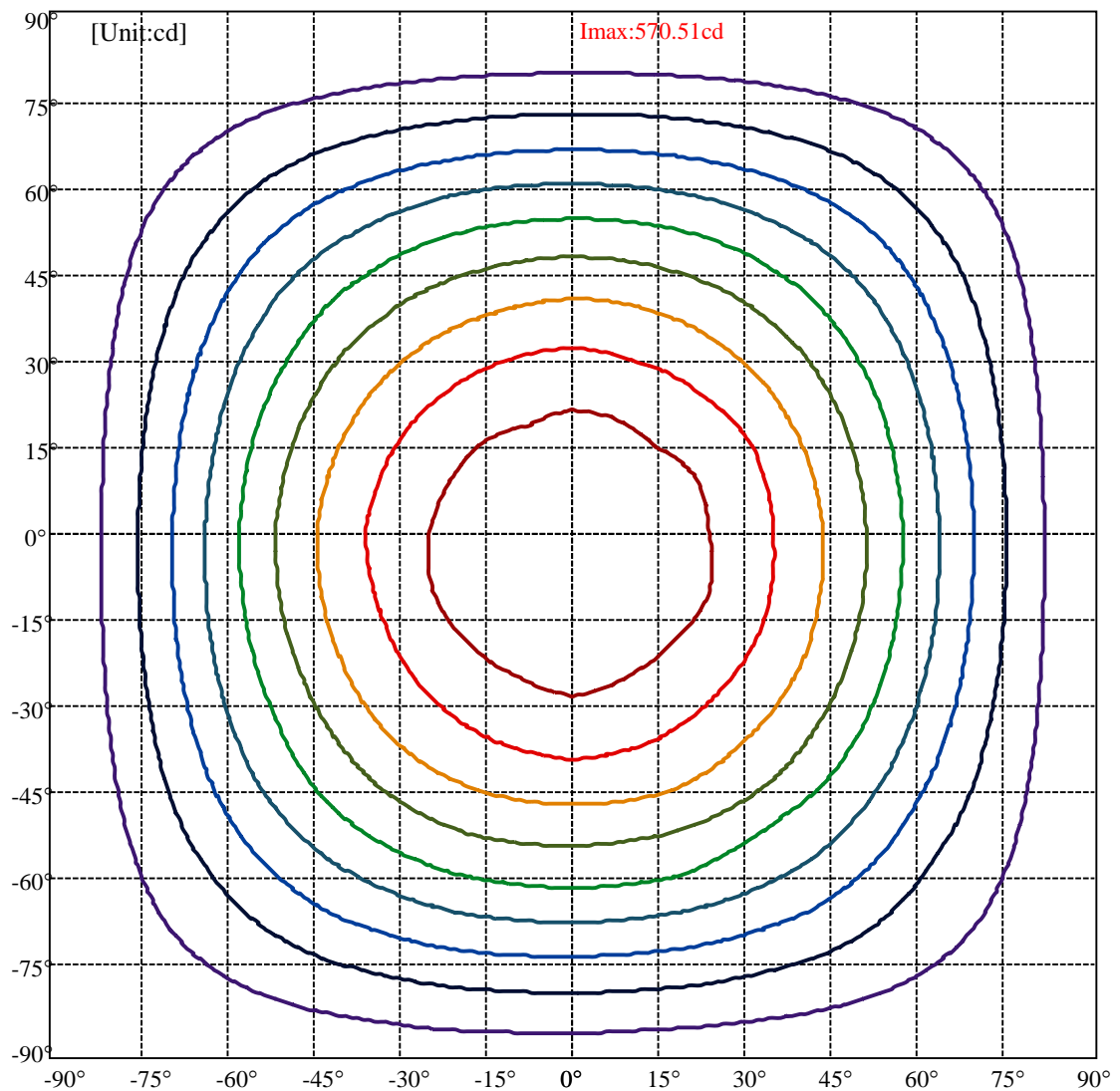
0-10	53.57
10-20	153.72
20-30	234.28
30-40	284.42
40-50	297.53
50-60	270.06
60-70	208.08
70-80	121.53
80-90	42.99
90-100	8.32
100-110	3.30
110-120	3.11
120-130	2.99
130-140	2.73
140-150	2.27
150-160	1.69
160-170	1.05
170-180	0.26



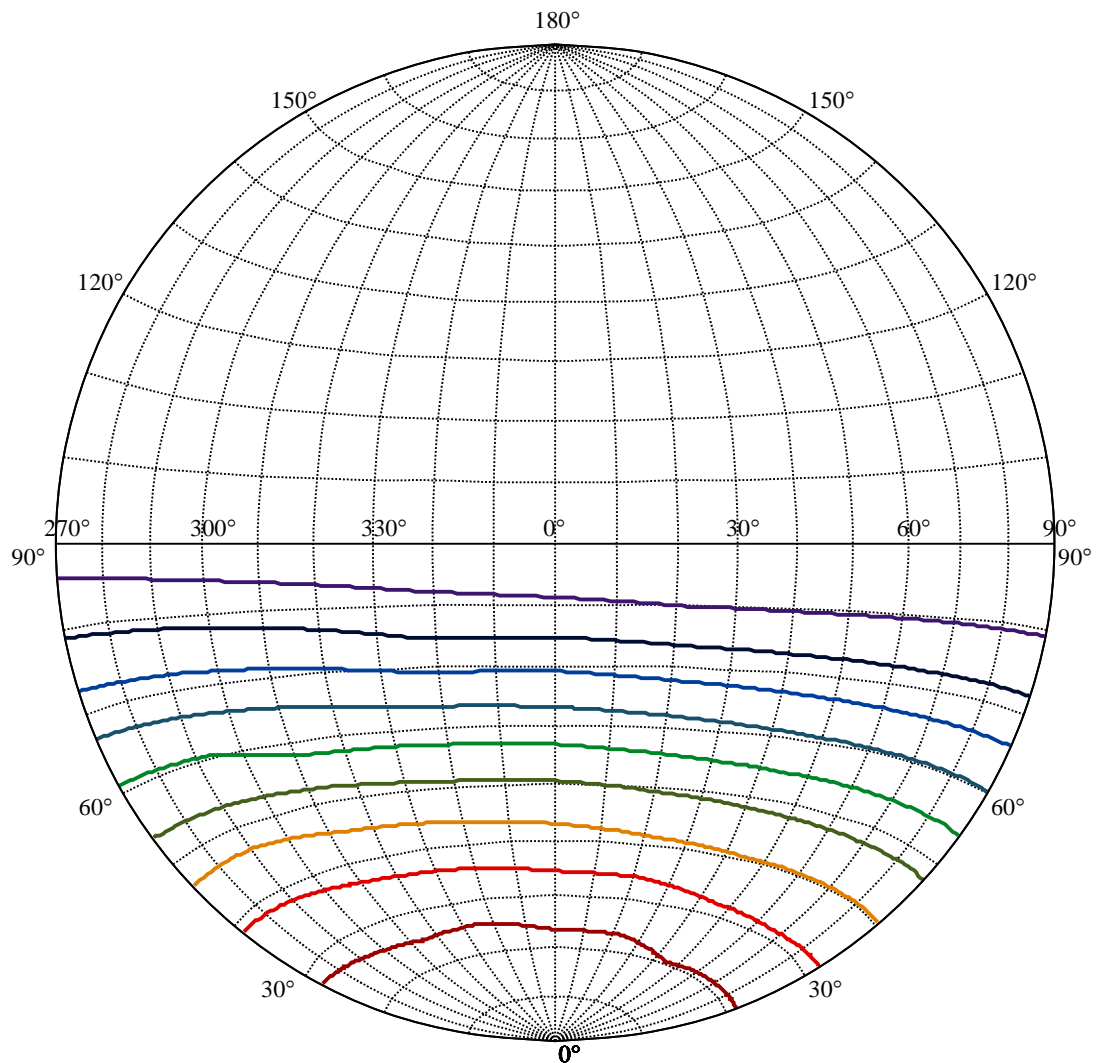


Max , Ave

Beam angle of C90plane115.07



(10% Imax) 57.0515	—
(20% Imax) 114.103	—
(30% Imax) 171.154	—
(40% Imax) 228.206	—
(50% Imax) 285.257	—
(60% Imax) 342.309	—
(70% Imax) 399.36	—
(80% Imax) 456.412	—
(90% Imax) 513.463	—



House

[Unit:cd]

Road

**Imax:570.51**

(10%Imax) 57.0515

(20%Imax) 114.103

(30%Imax) 171.154

(40%Imax) 228.206

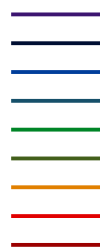
(50%Imax) 285.257

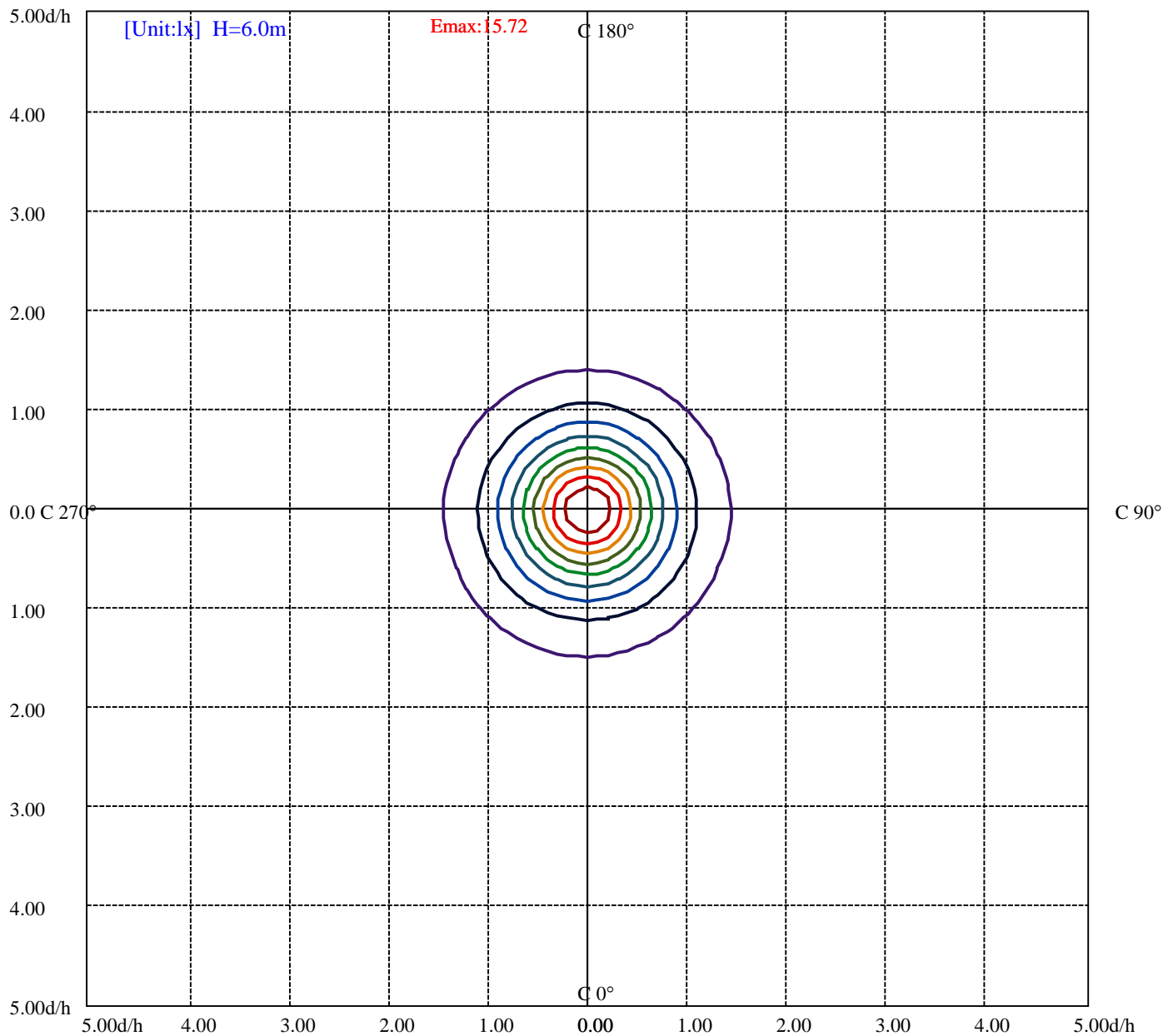
(60%Imax) 342.309

(70%Imax) 399.36

(80%Imax) 456.412

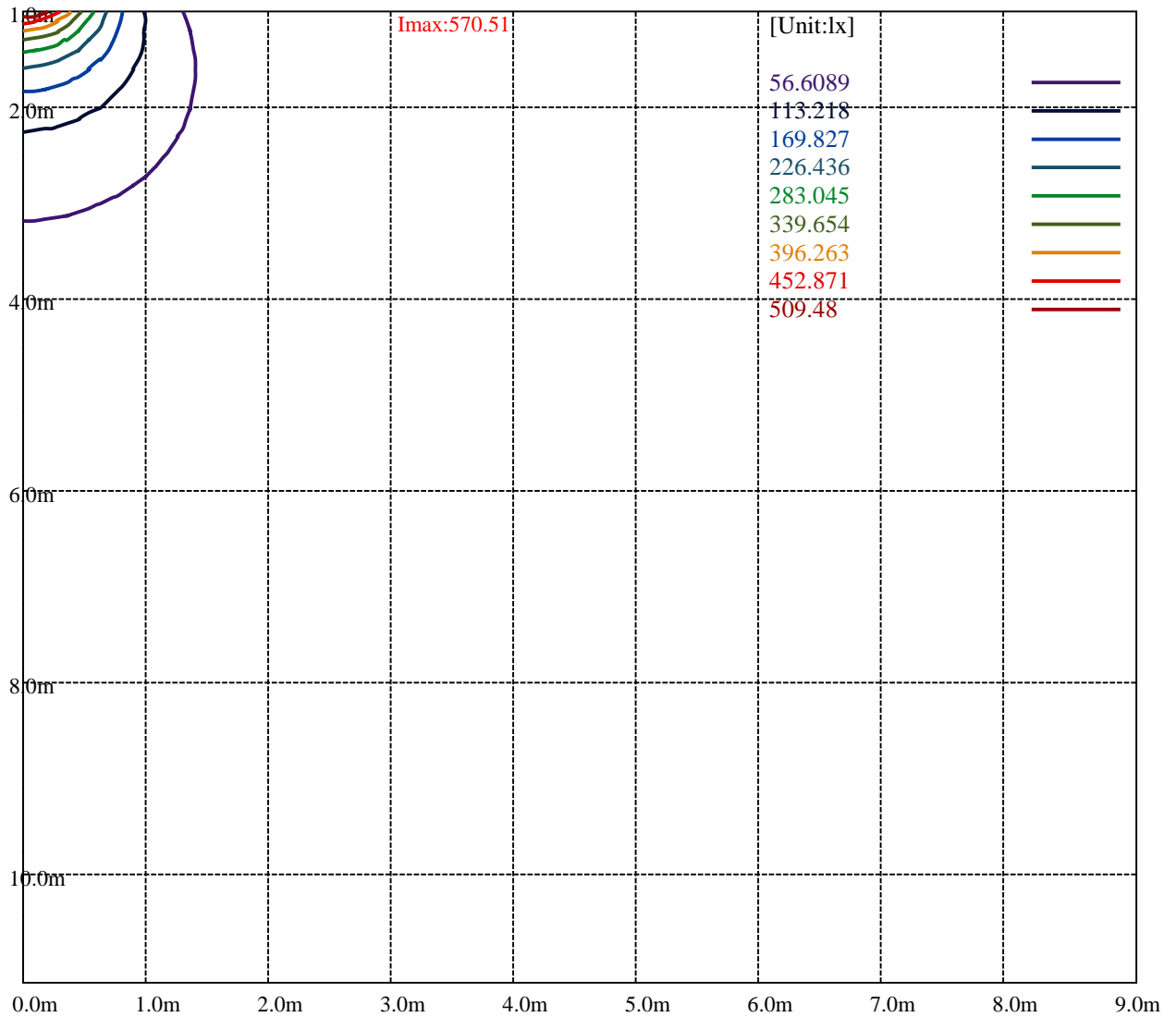
(90%Imax) 513.463





(10%Emax) 1.572469	—
(20%Emax) 3.144944	—
(30%Emax) 4.717417	—
(40%Emax) 6.289889	—
(50%Emax) 7.862361	—
(60%Emax) 9.434834	—
(70%Emax) 11.00728	—
(80%Emax) 12.57975	—
(90%Emax) 14.15222	—





# Hawko Lighting Group Australia Superflex-IP20-4000k-Samsung

Intensity data(cd)									Page: 10 Total:11
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	566.09	561.89	554.93	540.71	528.61	507.28	484.73	453.87	422.55
22.5	566.09	568.25	559.17	548.88	528.76	506.52	482.62	451.60	410.60
45.0	566.09	560.38	550.70	536.78	515.14	495.47	469.76	438.74	403.19
67.5	566.09	559.02	550.09	536.47	518.77	493.21	465.37	435.56	402.13
90.0	566.09	565.22	554.93	539.35	519.38	495.78	469.00	436.93	402.58
112.5	566.09	561.13	547.52	531.03	513.48	490.03	467.18	433.75	398.20
135.0	566.09	559.92	549.33	536.63	522.25	496.23	470.21	437.98	403.04
157.5	566.09	564.46	556.75	544.80	526.94	502.89	478.83	448.12	412.27
180.0	566.09	561.44	555.23	545.55	531.03	511.66	490.48	459.77	427.85
202.5	566.09	565.52	561.59	546.31	537.23	517.56	492.30	457.95	428.76
225.0	566.09	562.35	555.54	547.97	533.30	515.75	492.60	465.07	433.90
247.5	566.09	563.25	559.47	549.94	535.72	518.32	497.74	471.87	442.83
270.0	566.09	570.51	566.13	557.05	543.89	525.43	504.40	478.68	449.03
292.5	566.09	567.94	563.86	554.48	538.44	518.02	499.71	473.84	444.34
315.0	566.09	562.19	554.48	547.97	533.45	513.33	494.87	466.12	433.60
337.5	566.09	565.67	558.26	545.70	534.21	516.81	491.54	462.19	429.06
360.0	566.09	561.89	554.93	540.71	528.61	507.28	484.73	453.87	422.55
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	385.79	348.12	302.08	257.47	211.49	162.65	111.41	66.82	26.43
22.5	374.44	336.17	290.17	246.75	200.16	148.72	100.00	56.26	22.81
45.0	366.58	328.15	282.76	237.07	189.87	140.70	94.86	52.77	25.70
67.5	364.46	322.70	280.49	232.38	183.36	135.86	91.38	52.26	27.11
90.0	364.91	321.64	277.77	229.66	180.64	133.89	88.35	51.50	26.61
112.5	362.34	320.28	278.68	232.38	181.55	133.74	87.45	50.41	24.87
135.0	365.21	324.37	280.79	233.44	187.75	137.67	90.77	50.64	23.47
157.5	377.01	333.59	288.81	243.58	195.16	146.45	96.52	54.80	22.18
180.0	391.39	351.60	307.42	258.71	209.69	157.95	110.90	64.84	24.45
202.5	394.41	354.93	301.28	269.60	220.94	171.74	121.02	76.14	37.76
225.0	404.55	362.34	323.16	280.70	232.28	187.31	138.55	90.97	50.83
247.5	410.30	369.00	332.99	290.43	243.00	196.44	149.31	101.59	60.83
270.0	415.59	363.55	334.80	293.88	247.01	196.78	149.99	105.39	62.88
292.5	412.57	373.23	326.48	290.55	241.58	192.68	145.12	100.17	58.14
315.0	399.86	364.16	319.68	257.27	229.82	182.00	134.03	88.79	48.79
337.5	394.41	355.23	301.10	267.87	214.56	163.44	112.23	74.25	37.78
360.0	385.79	348.12	302.08	257.47	211.49	162.65	111.41	66.82	26.43
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	3.51	3.09	3.09	3.15	3.24	3.37	3.53	3.66	3.80
22.5	7.50	3.37	2.60	2.62	2.72	2.87	3.03	3.18	3.30
45.0	10.54	4.86	3.04	2.81	2.89	2.98	3.01	3.13	3.25
67.5	12.22	5.96	3.54	2.95	3.03	3.10	3.19	3.24	3.25
90.0	12.48	6.22	3.75	3.07	3.12	3.21	3.28	3.34	3.28
112.5	10.94	5.51	3.62	3.16	3.22	3.31	3.39	3.34	3.37
135.0	8.58	4.39	3.31	3.19	3.27	3.33	3.27	3.39	3.51
157.5	6.35	3.49	3.13	3.01	3.12	3.25	3.42	3.60	3.75
180.0	4.57	3.06	3.06	3.10	3.22	3.37	3.53	3.63	3.74
202.5	12.12	4.15	2.92	2.75	2.83	2.94	3.07	3.19	3.33
225.0	22.07	7.85	3.49	2.80	2.80	2.87	2.98	3.12	3.24
247.5	30.03	12.30	4.33	2.87	2.84	2.89	2.97	3.09	3.22
270.0	33.03	13.81	4.80	2.90	2.89	2.94	3.03	3.15	3.28
292.5	18.28	11.86	4.45	3.00	2.98	3.06	3.16	3.28	3.42
315.0	21.85	8.26	3.65	3.09	3.12	3.22	3.34	3.49	3.62
337.5	11.97	4.54	3.12	3.10	3.21	3.34	3.48	3.62	3.75
360.0	3.51	3.09	3.09	3.15	3.24	3.37	3.53	3.66	3.80

# Hawko Lighting Group Australia Superflex-IP20-4000k-Samsung

Intensity data(cd)										Page: 11 Total:11
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0	
0.0	3.86	3.90	3.87	3.87	3.89	3.92	3.95	3.96	3.92	
22.5	3.39	3.45	3.43	3.42	3.42	3.42	3.45	3.45	3.45	
45.0	3.34	3.45	3.46	3.48	3.48	3.49	3.51	3.49	3.51	
67.5	3.33	3.40	3.45	3.53	3.54	3.57	3.59	3.59	3.57	
90.0	3.39	3.45	3.49	3.59	3.63	3.66	3.66	3.68	3.66	
112.5	3.48	3.56	3.60	3.71	3.74	3.75	3.77	3.75	3.57	
135.0	3.63	3.75	3.81	3.81	3.81	3.83	3.86	3.65	3.84	
157.5	3.75	3.87	3.86	3.86	3.84	3.86	3.78	3.89	3.87	
180.0	3.74	3.75	3.71	3.69	3.84	3.86	3.71	3.86	3.89	
202.5	3.40	3.45	3.43	3.43	3.46	3.48	3.49	3.33	3.46	
225.0	3.34	3.40	3.40	3.42	3.45	3.49	3.54	3.54	3.40	
247.5	3.33	3.39	3.40	3.45	3.48	3.54	3.59	3.60	3.56	
270.0	3.39	3.45	3.46	3.51	3.56	3.60	3.68	3.69	3.66	
292.5	3.53	3.59	3.59	3.66	3.69	3.72	3.77	3.80	3.75	
315.0	3.71	3.77	3.77	3.80	3.81	3.84	3.87	3.89	3.84	
337.5	3.86	3.92	3.90	3.90	3.90	3.92	3.93	3.93	3.87	
360.0	3.86	3.90	3.87	3.87	3.89	3.92	3.95	3.96	3.92	
C/γ(°)										
0.0	180.0									
22.5	3.74									
45.0	3.74									
67.5	3.74									
90.0	3.74									
112.5	3.74									
135.0	3.74									
157.5	3.74									
180.0	3.74									
202.5	3.74									
225.0	3.74									
247.5	3.74									
270.0	3.74									
292.5	3.74									
315.0	3.74									
337.5	3.74									
360.0	3.74									