



LiT by Cardi

Client:

LumCAT: 0028920120

Luminaire: Batten 1220mm Tricolour Dual Wattage 40W 3000K IP20 ONOFF

Report No: Voltage(V):230.0400

Test No: Current(A):0.1740

LampCAT: Power (W): 39.0570

Lamp flux(lm) PF:0.9731

Number of Lamps: 1 Ballast type:

Length(mm): 1220 Width(mm): 70

Phm Type: C Height(mm): 77

Photometric Results

Lumens(lm): 4755.28

Lumens(lm)/Power(W): 121.75

Central intensity(cd): 1286.810

Maximum intensity(cd): 1287.420

Angle of maximum intensity: $C=0.0$ $\gamma=5.0$

Beam Angle(50%Imax): [C0/180]Total=133.3

[C90/270]Total=109.6

Field angle(10%Imax): [C0/180]Total=237.2

[C90/270]Total=159.0

Maximum s/h(1/2): C0_180=1.28 C90_270=1.24

Maximum s/h(1/4): C0_180=1.43 C90_270=1.36

Up flux rate of LUM(%): 10.09%

Down flux rate of LUM(%): 89.91%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 63.331%

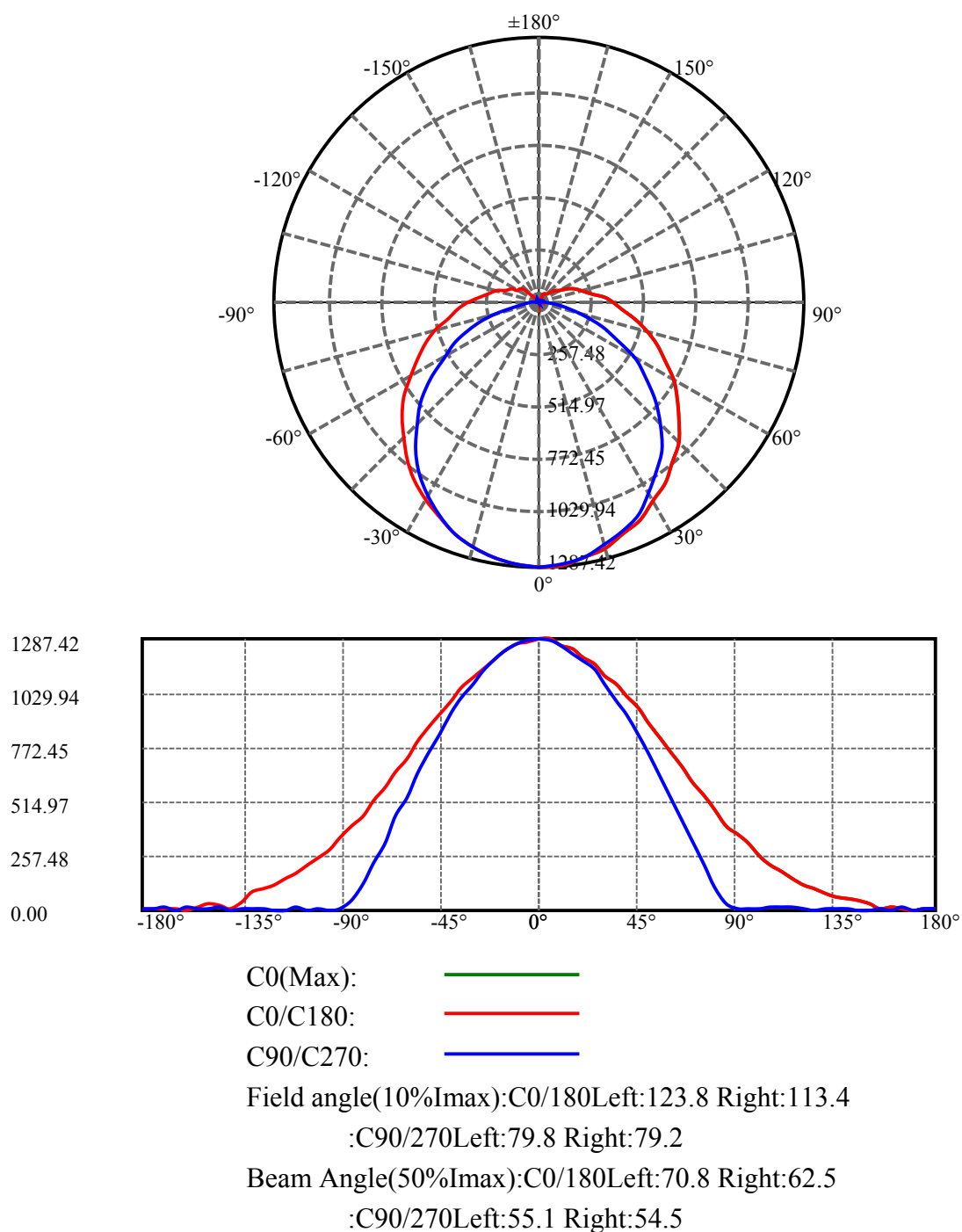
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1286.810	0.000	0	.000%	.000%
5.0	1277.699	30.658	30.658	.645%	.645%
10.0	1264.180	90.931	121.589	1.912%	2.557%
15.0	1239.839	148.537	270.126	3.124%	5.681%
20.0	1200.750	201.139	471.264	4.230%	9.910%
25.0	1157.032	247.288	718.552	5.200%	15.111%
30.0	1104.439	286.191	1004.743	6.018%	21.129%
35.0	1043.103	316.241	1320.984	6.650%	27.779%
40.0	975.609	336.807	1657.791	7.083%	34.862%
45.0	901.173	347.501	2005.292	7.308%	42.170%
50.0	820.551	347.900	2353.192	7.316%	49.486%
55.0	735.785	338.399	2691.591	7.116%	56.602%
60.0	648.446	319.961	3011.552	6.729%	63.331%
65.0	564.234	294.805	3306.357	6.200%	69.530%
70.0	478.407	264.003	3570.36	5.552%	75.082%
75.0	397.822	229.032	3799.392	4.816%	79.898%
80.0	319.891	192.040	3991.432	4.038%	83.937%
85.0	257.443	156.875	4148.307	3.299%	87.236%
90.0	206.153	126.936	4275.244	2.669%	89.905%
95.0	169.069	102.739	4377.982	2.161%	92.066%
100.0	139.697	83.899	4461.881	1.764%	93.830%
105.0	115.521	68.289	4530.171	1.436%	95.266%
110.0	97.065	55.566	4585.737	1.169%	96.435%
115.0	79.365	44.673	4630.41	.939%	97.374%
120.0	63.252	34.670	4665.081	.729%	98.103%
125.0	51.182	26.451	4691.532	.556%	98.659%
130.0	40.631	19.963	4711.495	.420%	99.079%
135.0	26.066	13.477	4724.972	.283%	99.363%
140.0	23.865	9.245	4734.217	.194%	99.557%
145.0	18.544	7.076	4741.293	.149%	99.706%
150.0	17.354	5.286	4746.579	.111%	99.817%
155.0	10.749	3.556	4750.135	.075%	99.892%
160.0	9.342	2.107	4752.242	.044%	99.936%
165.0	8.131	1.440	4753.682	.030%	99.966%
170.0	6.854	0.889	4754.571	.019%	99.985%
175.0	7.809	0.525	4755.096	.011%	99.996%
180.0	7.668	0.185	4755.281	.004%	100.000%

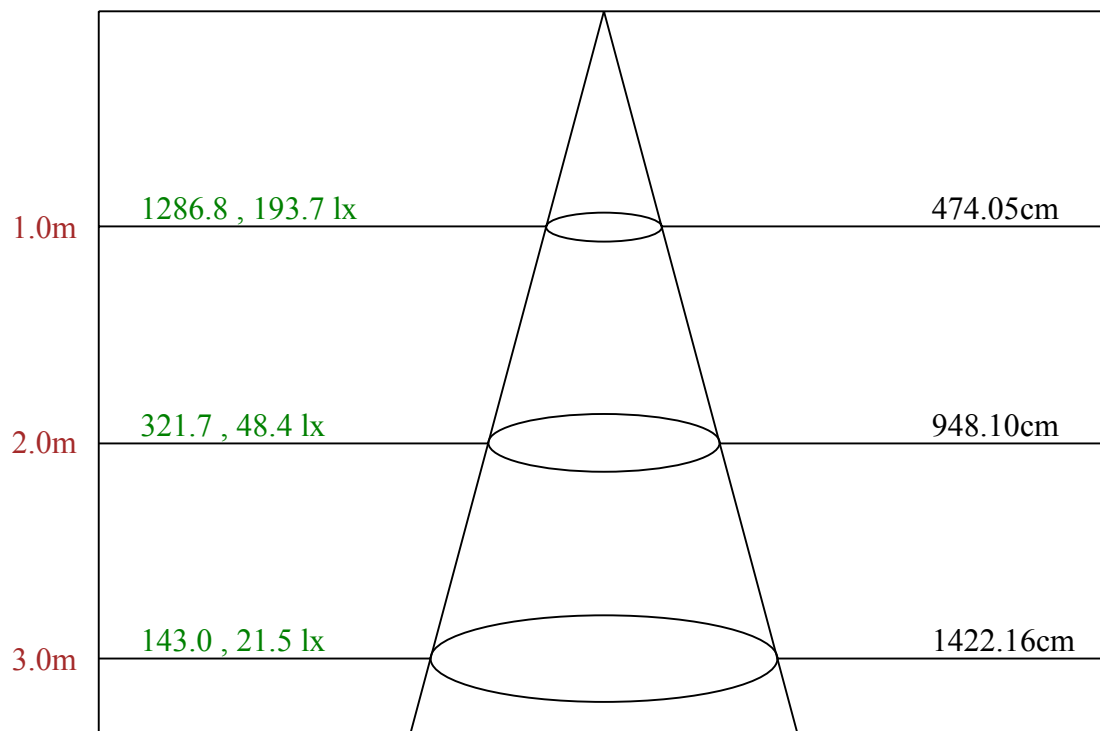
ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-30	1004.74	21.13%
0-40	1657.79	34.86%
0-60	3011.55	63.33%
0-90	4275.24	89.91%
0-120	4665.08	98.10%
0-180	4755.28	100.00%
60-90	1583.65	33.30%
90-120	516.77	10.87%
90-130	563.19	11.84%
90-150	598.27	12.58%
90-180	606.79	12.76%
0-75.13	3804.23	80.00%

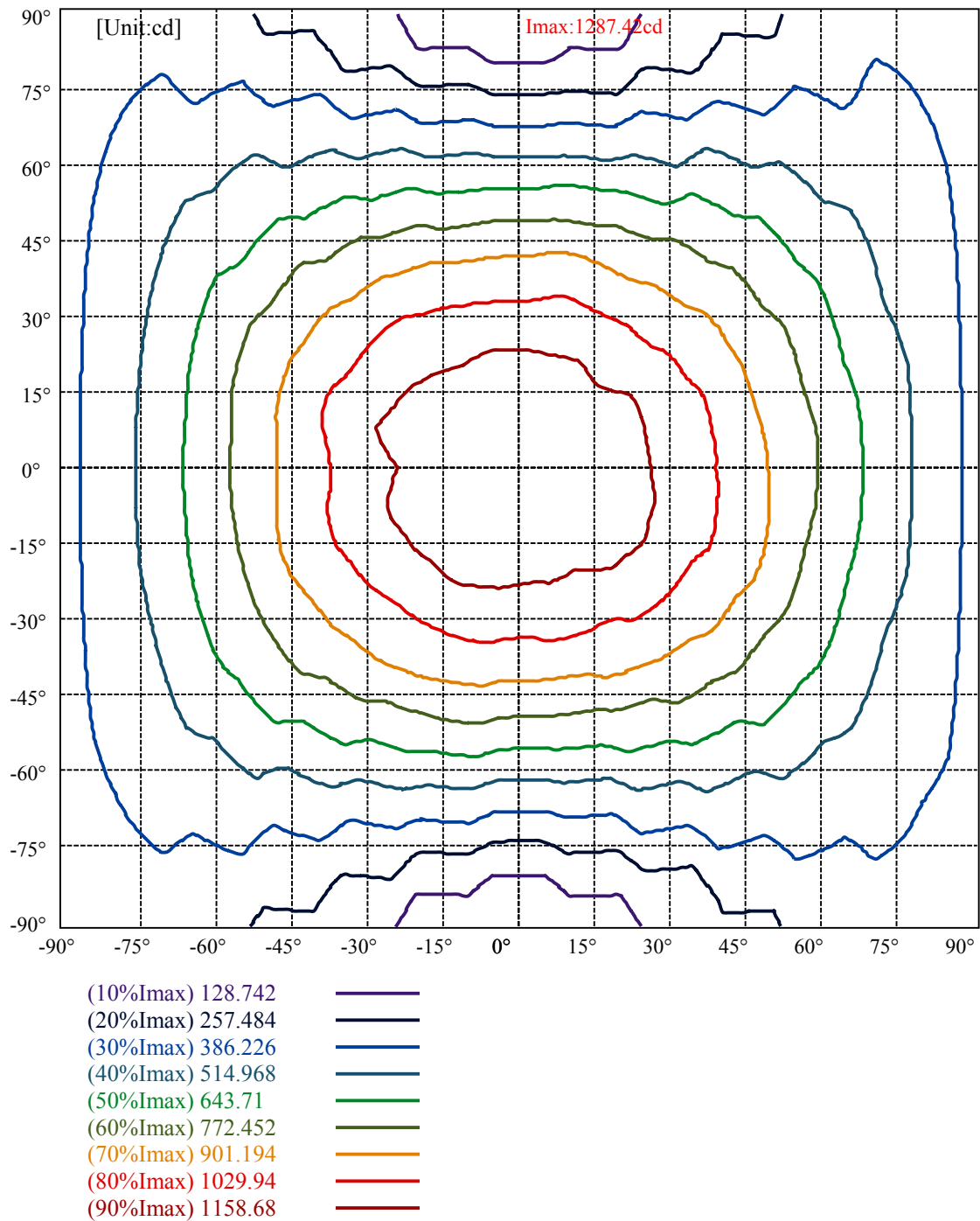
ZONAL LUMEN SUMMARY

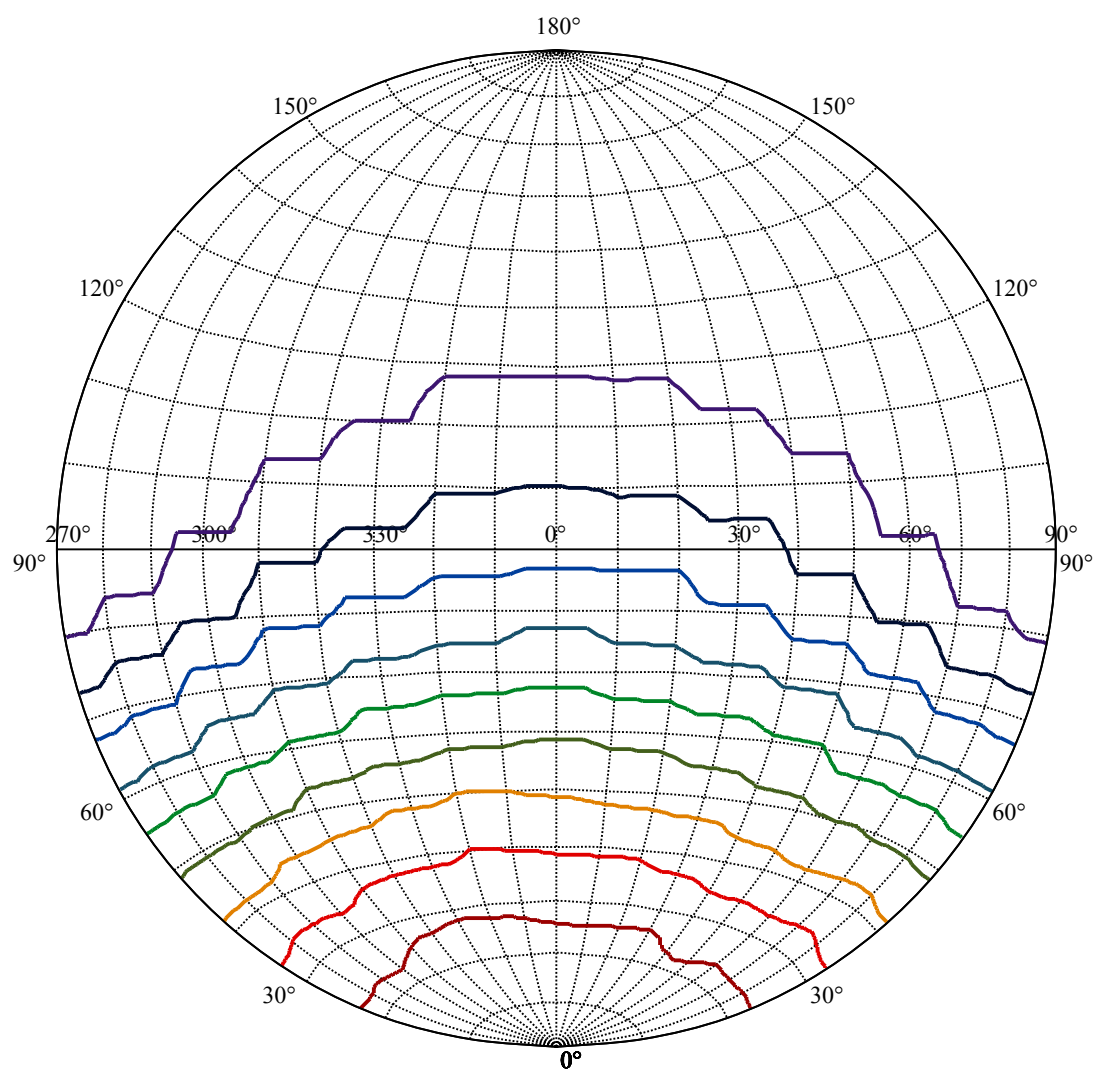
0-10	121.59
10-20	349.68
20-30	533.48
30-40	653.05
40-50	695.40
50-60	658.36
60-70	558.81
70-80	421.07
80-90	283.81
90-100	186.64
100-110	123.86
110-120	79.34
120-130	46.41
130-140	22.72
140-150	12.36
150-160	5.66
160-170	2.33
170-180	0.52





Max , Ave Beam angle of C0 plane 134.25





House

[Unit:cd]

Road

Imax:1287.42

(10%Imax) 128.742

(20%Imax) 257.484

(30%Imax) 386.226

(40%Imax) 514.968

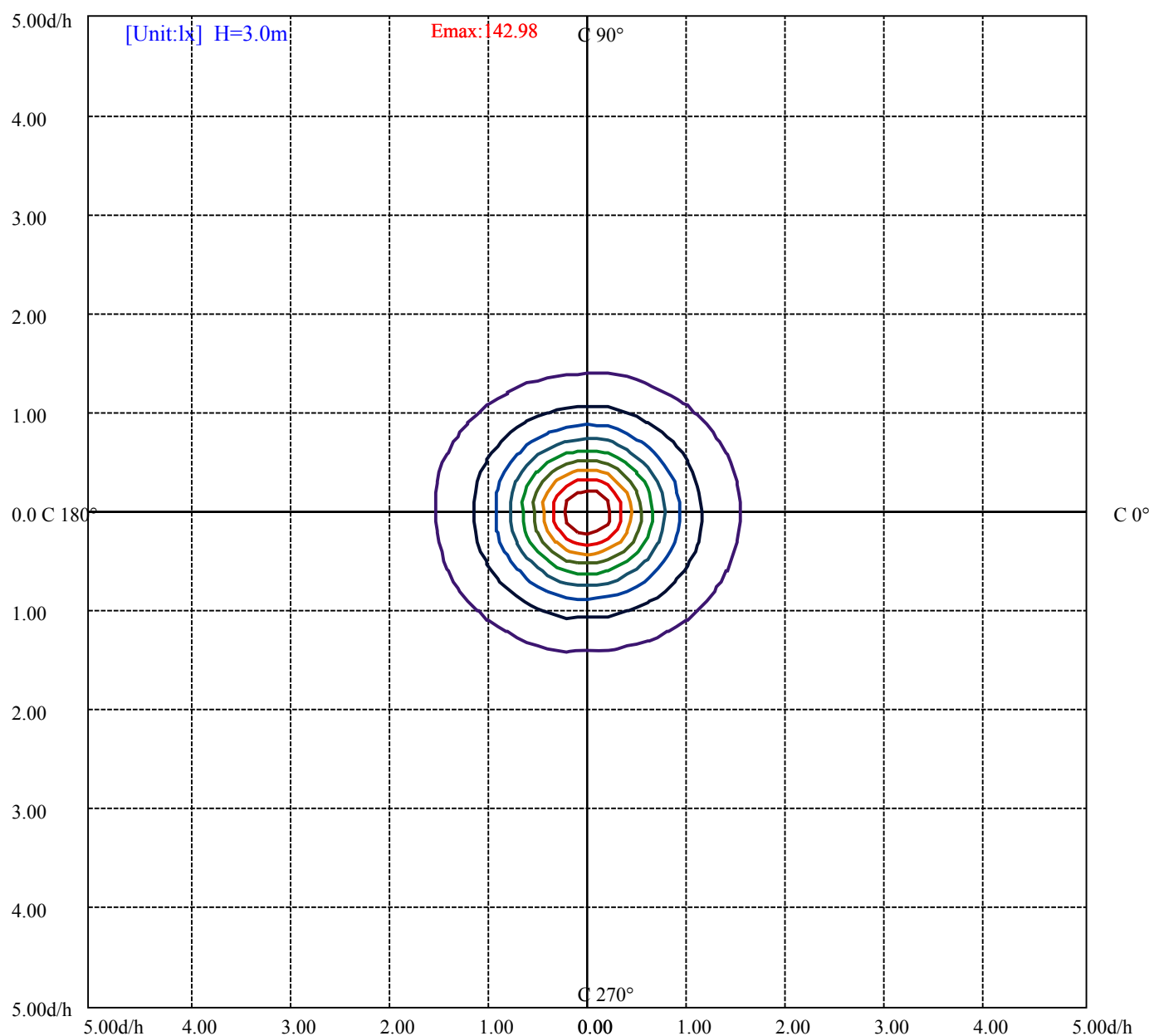
(50%Imax) 643.71

(60%Imax) 772.452

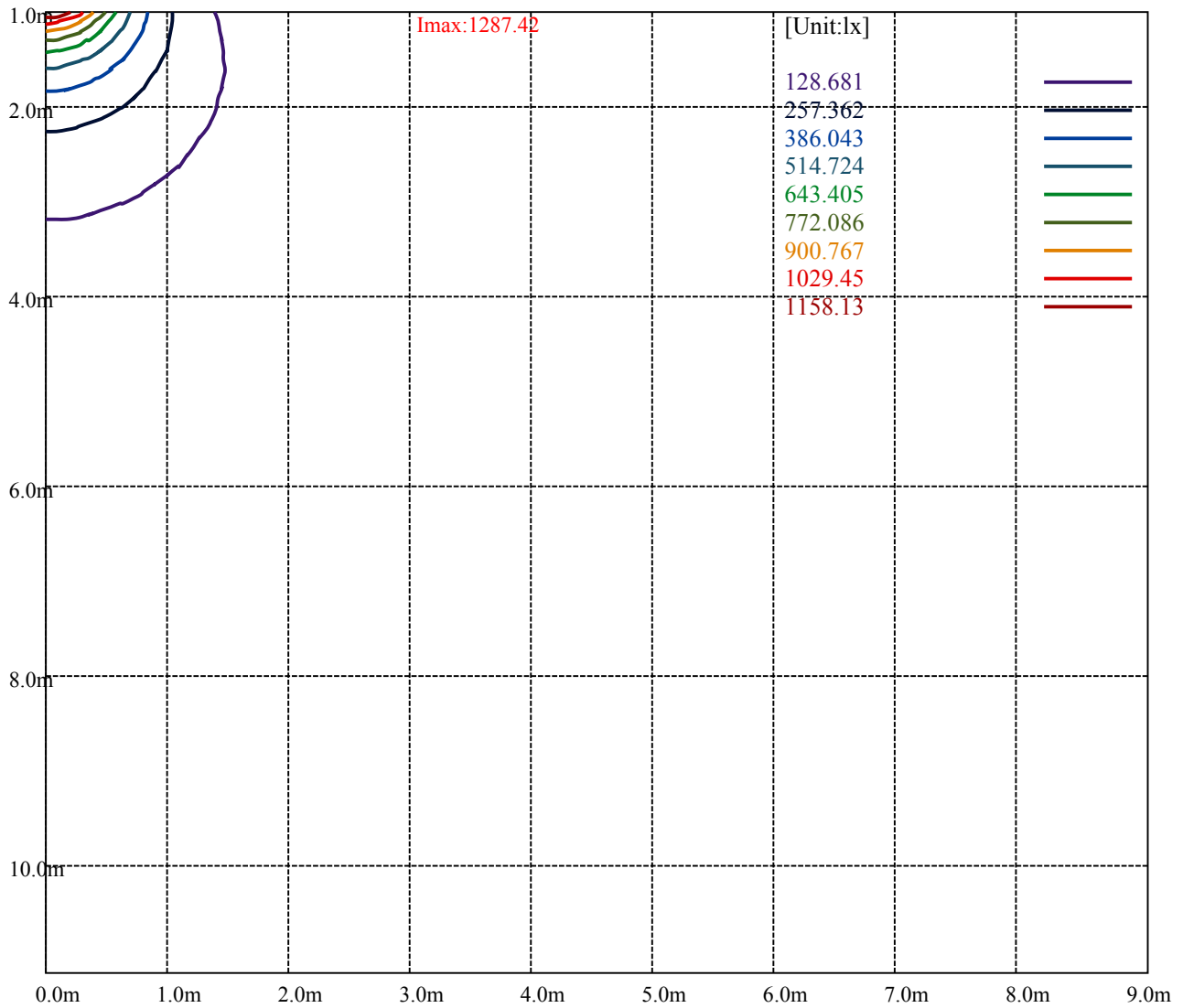
(70%Imax) 901.194

(80%Imax) 1029.94

(90%Imax) 1158.68



(10%Emax)	14.29789	—
(20%Emax)	28.59578	—
(30%Emax)	42.89367	—
(40%Emax)	57.19156	—
(50%Emax)	71.48945	—
(60%Emax)	85.78733	—
(70%Emax)	100.0852	—
(80%Emax)	114.3833	—
(90%Emax)	128.6811	—



Luminance Table

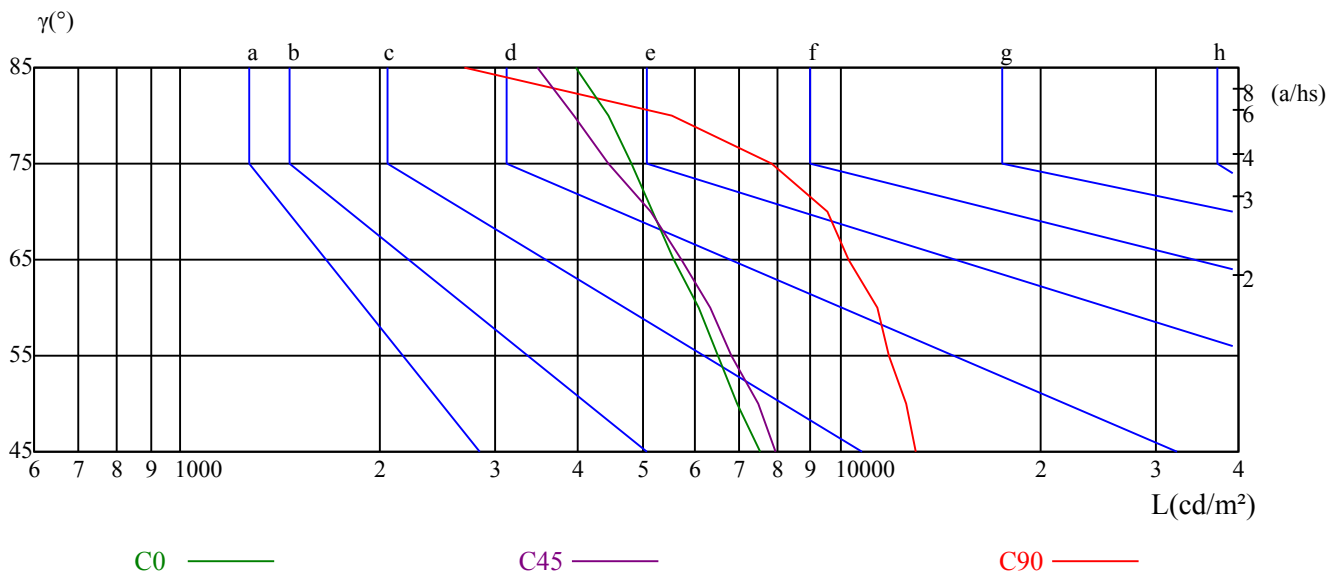
γ	45	50	55	60	65	70	75	80	85
C0	7560	6967	6506	6079	5576	5195	4807	4435	3973
C45	7988	7492	6840	6361	5740	5167	4446	3932	3459
C90	12999	12565	11853	11351	10248	9533	7849	5527	2685

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
18449	12006	15916	23966	9838	18801	53571	5341	37126

Glare Table

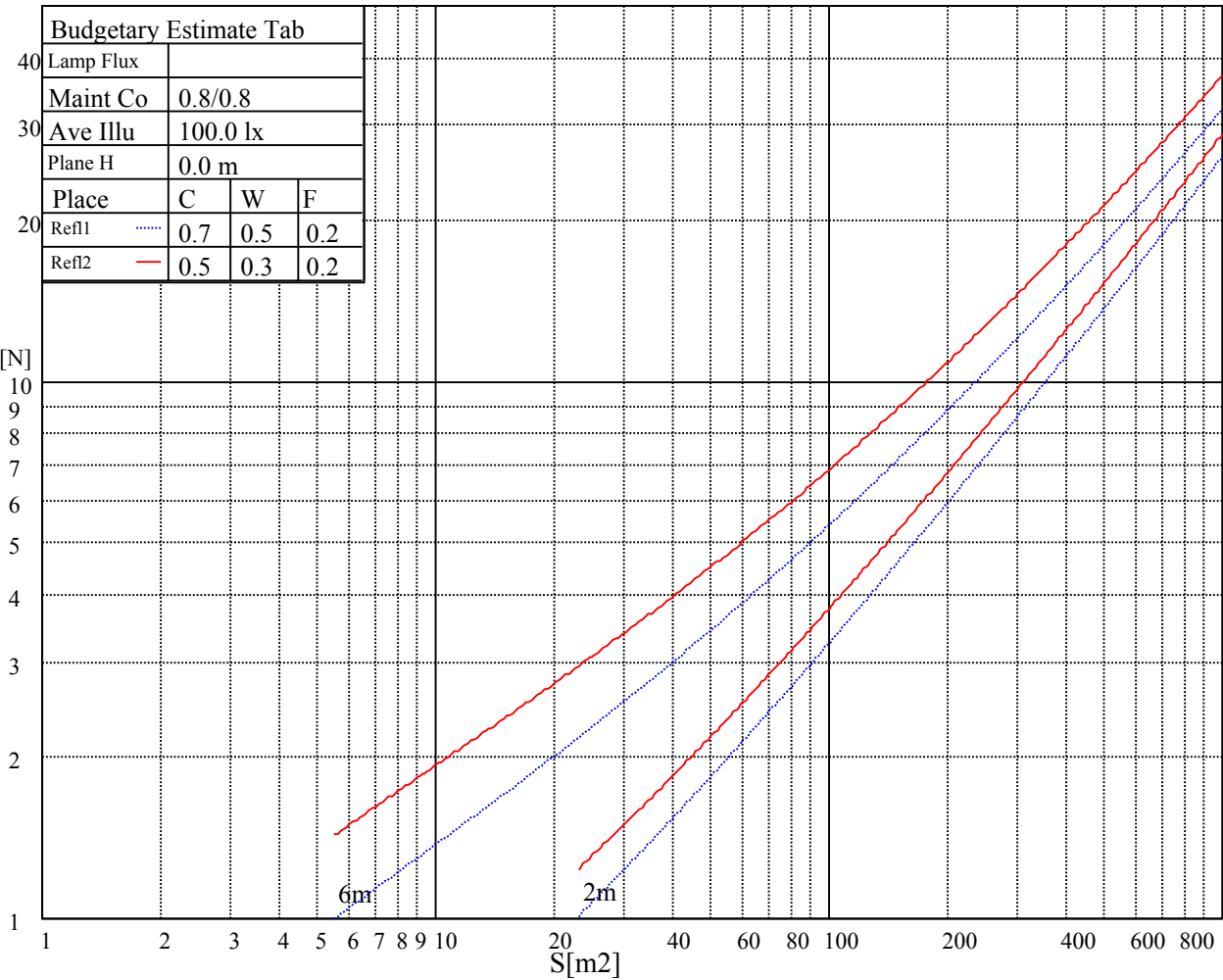
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve



Illumination assessment according UGR											
Rf of Ceiling		70	70	50	50	30	70	70	50	50	30
Rf of Wall		50	30	50	30	30	50	30	50	30	30
Rf of Floor		20	20	20	20	20	20	20	20	20	20
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	18.32	19.81	18.82	20.32	20.87	17.67	19.17	18.18	19.68	20.23
	3H	20.36	21.72	20.89	22.25	22.83	19.21	20.58	19.74	21.11	21.69
	4H	21.30	22.59	21.84	23.13	23.73	19.75	21.04	20.29	21.58	22.18
	6H	22.22	23.44	22.77	23.98	24.61	20.11	21.32	20.66	21.87	22.49
	8H	22.64	23.81	23.19	24.36	24.99	20.16	21.34	20.72	21.89	22.52
	12H	23.01	24.14	23.57	24.71	25.34	20.16	21.29	20.72	21.85	22.49
4H	2H	19.01	20.30	19.55	20.84	21.44	18.50	19.80	19.04	20.34	20.93
	3H	21.22	22.34	21.78	22.91	23.54	20.23	21.35	20.79	21.92	22.55
	4H	22.36	23.37	22.93	23.96	24.62	20.95	21.96	21.53	22.55	23.21
	6H	23.40	24.32	24.00	24.93	25.59	21.37	22.29	21.97	22.89	23.55
	8H	23.93	24.79	24.54	25.40	26.08	21.52	22.38	22.13	22.99	23.67
	12H	24.43	25.24	25.05	25.84	26.55	21.61	22.41	22.22	23.01	23.72
8H	4H	22.66	23.52	23.27	24.13	24.81	21.44	22.30	22.05	22.91	23.59
	6H	23.90	24.63	24.53	25.26	25.97	22.07	22.81	22.70	23.43	24.14
	8H	24.62	25.27	25.26	25.93	26.63	22.38	23.03	23.03	23.69	24.39
	12H	25.30	25.86	25.95	26.53	27.24	22.54	23.10	23.19	23.77	24.48
12H	4H	22.69	23.49	23.31	24.10	24.81	21.55	22.35	22.16	22.95	23.67
	6H	24.03	24.68	24.68	25.34	26.04	22.32	22.97	22.97	23.63	24.33
	8H	24.77	25.33	25.42	26.00	26.71	22.66	23.22	23.31	23.88	24.60
Variation with the observer position at spacings:											
S = 1.0H		0.3/-0.6					0.1/-0.8				
S = 1.5H		0.5/-0.6					0.5/-0.6				
S = 2.0H		0.7/-0.7					0.4/-0.6				
Standard tables:		BK4					BKBF				
Uncorrected UGR		4.5					9.0				

UGR calculation is based on CIE Publ. 117 ,S/H = 0.25



RHOC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOF=20 CU															
0	1.17	1.17	1.17	1.13	1.13	1.13	1.06	1.06	1.06	0.99	0.99	0.99	0.93	0.93	0.93	0.90
1	0.99	0.94	0.89	0.95	0.91	0.87	0.89	0.85	0.82	0.83	0.80	0.78	0.78	0.76	0.74	0.71
2	0.85	0.77	0.71	0.82	0.75	0.69	0.77	0.71	0.66	0.72	0.67	0.63	0.67	0.64	0.60	0.57
3	0.74	0.65	0.58	0.72	0.63	0.57	0.67	0.60	0.55	0.63	0.57	0.52	0.59	0.54	0.50	0.47
4	0.65	0.56	0.49	0.63	0.54	0.48	0.59	0.52	0.46	0.56	0.49	0.44	0.52	0.47	0.43	0.40
5	0.58	0.49	0.42	0.56	0.47	0.41	0.53	0.45	0.40	0.50	0.43	0.38	0.47	0.41	0.37	0.34
6	0.52	0.43	0.36	0.50	0.42	0.36	0.48	0.40	0.34	0.45	0.38	0.33	0.42	0.37	0.32	0.30
7	0.47	0.38	0.32	0.46	0.37	0.31	0.43	0.36	0.30	0.41	0.34	0.29	0.39	0.33	0.28	0.26
8	0.43	0.34	0.28	0.42	0.33	0.28	0.39	0.32	0.27	0.37	0.31	0.26	0.36	0.30	0.25	0.23
9	0.39	0.31	0.25	0.38	0.30	0.25	0.36	0.29	0.24	0.34	0.28	0.24	0.33	0.27	0.23	0.21
10	0.36	0.28	0.23	0.35	0.28	0.22	0.34	0.27	0.22	0.32	0.26	0.21	0.30	0.25	0.21	0.19

Intensity data(cd)

Appendix Page: 14 Total:23

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	1286.81	1287.42	1255.72	1241.94	1199.71	1169.48	1107.69	1073.38	1013.89
5.0	1286.81	1284.05	1257.17	1246.70	1202.44	1163.81	1116.72	1075.02	1015.61
10.0	1286.81	1279.07	1257.14	1243.50	1205.44	1162.99	1125.73	1065.58	1013.24
15.0	1286.81	1276.55	1259.51	1243.57	1214.59	1164.56	1122.72	1064.39	1015.92
20.0	1286.81	1277.16	1256.49	1247.16	1213.50	1166.11	1118.09	1064.86	1012.37
25.0	1286.81	1279.76	1257.92	1243.79	1206.91	1168.05	1118.86	1053.11	988.26
30.0	1286.81	1276.22	1258.13	1240.60	1202.47	1171.31	1112.33	1052.53	978.47
35.0	1286.81	1278.68	1256.29	1240.65	1192.57	1157.40	1099.42	1043.28	980.48
40.0	1286.81	1269.41	1257.91	1233.20	1195.76	1132.36	1089.36	1024.85	967.34
45.0	1286.81	1273.00	1261.28	1238.03	1184.25	1117.46	1085.51	1019.92	961.58
50.0	1286.81	1277.39	1262.76	1238.63	1189.54	1125.94	1087.39	1023.74	960.17
55.0	1286.81	1271.62	1266.74	1248.55	1195.25	1138.38	1084.33	1017.12	936.22
60.0	1286.81	1272.11	1276.16	1250.52	1202.91	1146.78	1080.55	1013.15	934.22
65.0	1286.81	1273.13	1279.29	1245.47	1195.33	1141.67	1075.80	1016.59	941.57
70.0	1286.81	1270.76	1278.48	1244.23	1189.59	1140.13	1077.62	1022.94	950.27
75.0	1286.81	1269.09	1272.25	1230.00	1185.32	1139.81	1082.00	1025.69	957.72
80.0	1286.81	1269.38	1264.59	1224.09	1185.59	1142.14	1075.92	1013.99	952.97
85.0	1286.81	1275.37	1262.24	1218.58	1185.86	1140.65	1071.36	997.65	932.44
90.0	1286.81	1276.55	1256.06	1218.75	1184.10	1140.04	1071.26	994.08	929.19
95.0	1286.81	1278.40	1246.73	1227.42	1187.36	1141.65	1072.93	995.01	926.47
100.0	1286.81	1272.86	1244.48	1235.51	1188.65	1142.72	1072.27	997.28	923.40
105.0	1286.81	1275.23	1253.30	1244.40	1187.18	1146.56	1071.19	1005.48	924.13
110.0	1286.81	1273.07	1245.25	1238.61	1185.78	1143.35	1075.27	1008.03	929.78
115.0	1286.81	1277.73	1247.61	1230.50	1182.77	1143.47	1081.51	1018.03	950.31
120.0	1286.81	1279.70	1247.07	1229.01	1176.12	1142.56	1086.70	1022.36	955.16
125.0	1286.81	1286.27	1253.25	1227.68	1190.04	1139.92	1090.18	1030.75	964.47
130.0	1286.81	1274.46	1258.92	1227.91	1197.03	1146.02	1102.80	1050.73	975.69
135.0	1286.81	1281.67	1266.51	1232.54	1203.03	1155.23	1106.60	1060.14	980.34
140.0	1286.81	1280.34	1275.28	1241.14	1200.15	1160.87	1109.60	1062.28	980.51
145.0	1286.81	1280.71	1272.00	1242.57	1202.14	1170.44	1115.35	1061.03	989.64
150.0	1286.81	1279.99	1280.62	1244.72	1203.57	1177.17	1117.62	1059.24	994.54
155.0	1286.81	1278.60	1272.91	1250.09	1214.33	1179.60	1126.59	1067.47	998.40
160.0	1286.81	1278.68	1272.05	1250.53	1221.27	1187.14	1136.34	1083.11	1021.89
165.0	1286.81	1279.46	1266.50	1249.69	1233.67	1195.71	1149.07	1092.39	1029.20
170.0	1286.81	1273.08	1262.17	1249.81	1218.51	1184.12	1133.84	1081.25	1020.21
175.0	1286.81	1276.49	1253.15	1238.80	1207.71	1163.72	1113.77	1063.10	998.52
180.0	1286.81	1273.58	1260.93	1231.70	1194.44	1147.04	1105.16	1053.05	991.18
185.0	1286.81	1276.48	1262.66	1231.02	1198.42	1156.42	1109.21	1055.53	989.53
190.0	1286.81	1273.98	1264.25	1235.07	1204.21	1162.84	1122.73	1074.16	1006.65
195.0	1286.81	1271.47	1267.78	1241.41	1213.01	1175.95	1126.05	1081.28	1008.58
200.0	1286.81	1272.52	1274.99	1243.77	1208.17	1175.10	1129.05	1072.33	1009.49
205.0	1286.81	1267.02	1271.79	1247.30	1206.03	1170.22	1124.49	1058.86	999.47
210.0	1286.81	1272.96	1263.17	1247.20	1207.23	1163.84	1121.03	1055.01	993.63
215.0	1286.81	1276.06	1261.95	1240.40	1200.41	1166.56	1116.75	1050.71	985.67
220.0	1286.81	1276.01	1258.26	1231.93	1192.73	1162.72	1098.90	1042.25	976.84
225.0	1286.81	1271.92	1259.76	1232.21	1191.52	1158.23	1091.85	1031.52	971.85
230.0	1286.81	1272.44	1261.33	1229.72	1201.64	1158.78	1089.15	1032.29	974.07
235.0	1286.81	1270.70	1263.73	1230.73	1203.57	1162.52	1097.29	1032.57	969.12
240.0	1286.81	1270.22	1270.98	1231.35	1205.89	1164.69	1105.85	1030.97	967.23
245.0	1286.81	1275.06	1270.41	1237.12	1201.95	1160.67	1105.28	1029.91	962.86
250.0	1286.81	1279.12	1269.94	1230.97	1198.59	1154.76	1101.41	1033.06	956.88
255.0	1286.81	1281.29	1263.80	1230.80	1201.03	1148.12	1103.24	1029.37	955.37
260.0	1286.81	1282.58	1269.20	1234.12	1199.72	1147.61	1099.88	1024.74	946.74
265.0	1286.81	1277.36	1258.16	1233.00	1195.58	1140.74	1084.34	1011.18	938.51
270.0	1286.81	1279.18	1260.55	1233.82	1193.78	1135.70	1074.89	1008.45	935.07
275.0	1286.81	1280.37	1261.36	1231.47	1186.52	1135.37	1076.95	1008.00	937.47
280.0	1286.81	1277.21	1261.52	1228.47	1184.77	1136.67	1090.23	1019.85	934.65
285.0	1286.81	1280.76	1260.35	1230.23	1189.57	1142.90	1095.15	1024.37	931.77

Intensity data(cd)

Appendix Page: 15 Total:23

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
290.0	1286.81	1282.80	1255.82	1233.63	1190.06	1140.30	1093.79	1024.81	938.41
295.0	1286.81	1283.34	1260.91	1230.78	1187.86	1139.81	1091.91	1023.45	960.03
300.0	1286.81	1282.00	1262.13	1240.77	1187.85	1136.67	1092.02	1017.55	967.67
305.0	1286.81	1283.67	1267.65	1247.50	1195.27	1151.45	1095.35	1026.64	967.50
310.0	1286.81	1284.68	1269.72	1251.27	1204.03	1162.58	1113.14	1055.27	981.80
315.0	1286.81	1281.30	1270.98	1261.26	1213.15	1174.90	1124.50	1065.19	983.40
320.0	1286.81	1284.88	1278.46	1259.12	1218.66	1175.52	1123.81	1070.84	991.42
325.0	1286.81	1282.60	1278.97	1258.93	1222.25	1179.17	1136.77	1069.53	997.82
330.0	1286.81	1283.56	1281.10	1263.54	1230.59	1180.94	1144.57	1072.77	999.69
335.0	1286.81	1285.62	1280.26	1263.62	1225.67	1178.95	1144.82	1073.70	1002.58
340.0	1286.81	1281.43	1281.78	1253.84	1221.23	1177.50	1139.02	1081.14	1031.31
345.0	1286.81	1286.69	1269.15	1251.74	1222.71	1181.43	1136.61	1083.14	1029.93
350.0	1286.81	1284.77	1268.39	1244.64	1219.36	1178.45	1129.01	1081.79	1023.41
355.0	1286.81	1285.27	1264.82	1245.04	1206.06	1171.86	1121.13	1078.58	1021.70
360.0	1286.81	1287.42	1255.72	1241.94	1199.71	1169.48	1107.69	1073.38	1013.89

Intensity data(cd)										Appendix Page: 16 Total:23	
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	958.68	883.85	819.37	754.07	675.97	610.30	542.41	476.07	401.33		
5.0	956.66	877.34	819.74	754.21	671.06	609.28	543.35	473.74	401.08		
10.0	941.19	863.52	804.70	728.95	650.92	578.42	507.94	437.02	405.87		
15.0	939.15	858.21	806.75	725.23	649.71	575.55	509.74	439.47	408.67		
20.0	932.18	859.10	805.79	721.35	648.15	575.64	506.12	436.87	407.66		
25.0	918.67	860.05	773.60	704.17	620.20	544.75	466.87	401.35	342.42		
30.0	916.20	863.20	770.34	699.62	620.89	543.20	465.43	400.25	341.85		
35.0	912.53	857.85	766.51	696.14	619.63	539.47	465.42	398.96	343.46		
40.0	887.08	822.26	730.84	662.41	575.58	494.05	403.51	329.97	267.64		
45.0	879.07	814.42	728.56	658.58	572.52	491.92	399.91	330.31	267.77		
50.0	874.56	813.14	723.35	654.05	568.66	489.77	400.16	328.97	267.78		
55.0	853.36	779.03	680.26	585.68	492.44	415.20	335.40	249.13	185.98		
60.0	852.27	773.04	676.27	582.12	491.48	411.45	335.55	248.34	186.05		
65.0	851.42	774.14	678.12	579.34	489.19	409.35	332.98	248.32	185.59		
70.0	857.95	753.81	665.88	549.03	446.34	345.00	238.81	155.25	98.16		
75.0	860.78	752.25	665.64	547.01	443.94	342.96	237.04	155.12	97.65		
80.0	855.75	751.32	663.27	544.24	441.59	342.61	236.86	154.49	97.96		
85.0	837.10	743.90	636.92	538.77	423.51	327.25	214.23	112.46	34.56		
90.0	834.51	741.61	632.92	537.66	419.93	326.73	214.36	111.31	34.40		
95.0	838.37	744.64	635.04	538.01	423.39	326.94	215.34	112.21	34.47		
100.0	845.43	737.61	640.59	555.57	454.45	353.90	263.39	163.93	92.14		
105.0	845.26	731.83	641.84	556.69	454.77	354.99	265.17	163.95	92.40		
110.0	852.50	737.69	649.58	555.66	461.38	353.29	266.40	164.40	93.11		
115.0	868.30	776.69	689.03	594.41	510.74	415.82	334.56	251.98	206.56		
120.0	872.89	784.94	694.26	597.47	515.75	417.53	334.58	251.58	206.94		
125.0	878.71	790.80	695.18	602.83	518.52	418.44	335.63	252.12	206.60		
130.0	896.29	813.67	737.21	645.09	564.59	486.48	413.66	345.67	270.09		
135.0	901.22	820.85	738.87	648.60	566.08	489.70	415.92	345.57	270.85		
140.0	904.22	824.76	741.04	654.37	570.60	493.00	419.41	346.75	271.10		
145.0	928.64	853.58	782.07	705.94	610.98	555.96	482.41	405.28	349.95		
150.0	935.09	859.93	783.33	708.63	613.56	560.17	485.08	404.95	349.38		
155.0	939.67	858.85	786.21	707.88	616.94	559.25	485.81	406.26	349.12		
160.0	948.62	879.37	813.83	730.87	658.81	589.66	517.00	454.31	393.16		
165.0	952.29	881.42	817.58	732.24	660.47	589.72	517.87	454.81	394.52		
170.0	955.12	878.58	815.32	729.11	660.92	587.45	517.06	456.27	394.80		
175.0	935.58	867.48	797.07	716.63	653.81	576.80	516.73	448.98	395.36		
180.0	928.30	868.37	796.72	719.92	655.75	580.99	517.02	449.67	396.14		
185.0	934.41	871.98	793.78	722.60	653.15	575.98	516.75	449.64	396.26		
190.0	947.44	879.73	796.09	713.18	661.28	573.53	508.25	446.03	387.99		
195.0	948.78	884.58	793.50	710.30	661.10	575.90	507.97	449.05	386.56		
200.0	944.54	880.26	794.50	715.43	660.46	576.65	509.18	447.77	386.80		
205.0	929.33	865.51	795.02	702.01	638.06	538.08	489.51	410.32	350.05		
210.0	921.11	860.27	792.77	702.30	636.01	538.19	490.04	407.71	351.21		
215.0	922.02	858.44	786.92	702.28	635.27	538.82	488.97	409.19	349.13		
220.0	910.89	829.65	750.91	665.41	582.61	490.02	418.01	334.15	285.24		
225.0	908.55	821.52	747.02	664.49	580.38	488.50	417.49	334.66	285.49		
230.0	908.66	820.27	743.30	664.18	576.75	486.90	417.02	334.18	286.33		
235.0	898.68	792.85	711.66	615.58	525.98	426.83	346.20	280.16	204.44		
240.0	894.99	790.47	706.44	614.27	522.88	426.58	344.90	278.14	205.00		
245.0	890.56	786.25	706.12	612.47	521.22	424.58	342.64	279.02	204.46		
250.0	881.02	789.96	691.90	581.13	487.89	387.39	276.62	186.68	112.65		
255.0	878.55	788.61	691.29	580.35	486.91	386.82	275.11	186.74	112.48		
260.0	872.99	782.50	687.66	576.92	483.89	386.28	273.67	185.49	112.05		
265.0	838.51	756.10	651.26	535.75	448.50	323.75	222.93	125.63	45.33		
270.0	834.95	753.09	644.72	533.31	446.69	321.88	220.53	125.48	45.10		
275.0	836.21	754.90	646.10	534.93	447.02	321.77	222.04	126.30	45.35		
280.0	847.75	753.36	655.16	556.80	456.31	363.35	271.27	182.20	115.89		
285.0	848.63	754.26	657.18	559.81	454.80	368.12	271.95	182.56	115.85		

Intensity data(cd)

Appendix Page: 17 Total:23

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
290.0	855.47	758.14	663.16	565.14	458.98	367.97	273.35	183.61	116.17
295.0	885.26	777.38	699.44	614.93	521.09	447.82	353.72	256.57	204.39
300.0	890.24	781.83	703.77	617.88	526.74	449.81	354.54	257.47	204.40
305.0	892.60	789.43	704.13	622.57	529.57	451.51	355.93	258.89	204.44
310.0	906.81	835.88	748.47	662.98	575.68	501.75	428.34	361.66	279.39
315.0	910.85	843.04	751.79	666.80	578.78	500.02	428.88	361.86	281.22
320.0	916.10	848.21	755.19	671.04	580.38	503.61	430.41	360.60	279.97
325.0	943.40	872.24	783.00	704.62	641.09	544.28	484.92	416.18	353.93
330.0	944.71	874.94	781.73	708.49	641.05	547.64	486.18	416.91	353.95
335.0	943.62	877.06	789.07	712.58	644.27	548.09	486.28	416.30	353.87
340.0	962.00	901.23	811.11	732.08	664.31	589.80	509.11	445.98	391.65
345.0	964.38	904.11	810.46	735.33	664.02	590.56	509.25	447.08	393.40
350.0	964.65	899.76	809.98	736.03	663.96	589.88	509.84	447.46	391.77
355.0	960.22	888.76	818.38	751.59	674.62	609.65	542.32	474.38	401.17
360.0	958.68	883.85	819.37	754.07	675.97	610.30	542.41	476.07	401.33

Intensity data(cd)

Appendix Page: 18 Total:23

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	360.19	317.52	258.85	213.25	186.64	154.74	116.89	101.28	78.79
5.0	360.19	317.86	257.19	213.11	186.76	154.28	116.36	101.61	79.34
10.0	338.56	288.01	243.97	211.21	183.73	147.99	111.83	101.34	80.78
15.0	339.11	288.52	244.58	210.62	183.66	147.46	111.87	101.30	80.87
20.0	338.44	288.62	244.18	210.25	182.77	145.98	110.62	99.08	79.82
25.0	302.31	253.84	215.35	180.28	143.34	112.32	99.43	79.06	74.04
30.0	302.91	253.87	215.62	179.99	142.43	110.62	98.56	77.22	73.07
35.0	303.00	254.24	214.66	178.69	140.68	109.17	96.20	76.46	70.42
40.0	224.65	198.65	150.36	126.79	94.72	87.78	63.12	68.03	53.77
45.0	225.14	198.16	149.88	126.39	93.04	86.89	60.67	67.12	51.08
50.0	225.04	198.52	149.50	124.83	91.63	84.06	58.59	64.40	48.26
55.0	138.23	113.88	84.17	67.67	47.25	30.07	27.96	37.82	28.32
60.0	137.78	113.42	84.30	66.52	46.05	27.18	25.62	34.76	25.19
65.0	138.47	113.67	83.66	65.53	45.39	26.82	24.83	32.28	23.63
70.0	53.39	35.76	37.74	19.28	27.04	18.45	12.95	9.03	12.52
75.0	53.20	35.55	37.10	18.49	26.46	18.01	11.96	6.42	10.79
80.0	53.00	35.55	36.98	18.37	26.10	17.86	11.93	5.93	10.68
85.0	4.41	6.92	7.85	12.52	15.92	13.01	10.86	1.68	10.06
90.0	4.40	6.81	7.62	12.38	15.58	12.84	10.81	1.23	10.02
95.0	4.42	6.85	7.70	12.35	15.29	12.90	10.60	1.72	10.09
100.0	49.35	39.61	24.62	11.64	7.05	13.92	7.79	6.29	10.71
105.0	49.15	39.61	24.78	11.62	6.82	14.02	7.65	6.79	10.80
110.0	49.17	39.82	25.22	12.59	8.24	15.51	7.73	7.23	12.90
115.0	138.61	98.76	80.17	69.18	53.03	45.36	8.84	11.19	26.63
120.0	139.30	98.93	80.52	69.96	54.46	46.69	8.91	11.64	28.76
125.0	138.88	98.47	81.25	71.00	55.52	48.46	12.52	13.14	26.53
130.0	230.02	177.45	139.24	115.86	89.82	75.46	58.24	26.61	12.23
135.0	230.88	177.72	139.54	116.38	90.98	76.87	61.87	28.20	10.04
140.0	230.88	177.79	139.83	117.77	92.55	79.06	64.49	32.81	13.42
145.0	285.12	242.04	200.05	175.62	144.70	123.31	92.71	75.98	35.56
150.0	285.70	242.10	200.29	176.83	146.41	124.81	95.25	80.92	38.85
155.0	283.76	243.23	200.81	176.71	146.73	125.25	96.75	82.81	43.92
160.0	332.25	286.07	241.59	202.39	172.11	132.71	117.26	101.24	76.70
165.0	331.61	286.14	242.65	202.44	172.67	133.35	118.87	103.17	82.00
170.0	332.71	284.86	243.54	202.99	174.18	134.09	119.37	103.77	82.16
175.0	344.17	288.54	250.46	214.92	177.25	147.52	122.71	106.89	87.27
180.0	344.50	288.28	250.34	215.60	177.00	148.19	122.83	107.59	87.84
185.0	342.49	289.28	250.09	215.34	176.88	148.99	122.94	107.55	87.14
190.0	337.54	275.73	238.74	196.73	187.40	146.02	124.15	102.13	85.45
195.0	338.09	274.40	238.96	197.14	187.43	145.95	123.66	101.95	84.86
200.0	336.29	274.83	238.28	196.45	186.04	145.02	122.21	101.27	78.79
205.0	278.13	245.92	209.50	174.23	156.23	123.72	103.19	94.21	37.59
210.0	277.77	246.17	209.42	173.47	155.37	122.76	101.44	93.93	31.33
215.0	278.41	246.15	208.83	172.62	153.53	120.68	99.72	87.68	29.08
220.0	231.83	198.26	156.33	125.04	109.10	81.01	77.92	33.22	14.01
225.0	232.59	198.44	155.36	123.98	107.58	78.71	76.06	27.22	11.64
230.0	231.35	197.77	155.21	122.81	105.59	76.08	72.42	26.19	13.94
235.0	142.36	101.86	79.45	68.22	47.44	22.04	23.50	17.32	28.94
240.0	143.15	101.60	78.78	67.47	45.24	19.32	19.62	16.41	31.07
245.0	142.17	101.61	78.46	66.12	44.05	19.46	19.54	15.60	28.01
250.0	63.31	32.93	28.93	3.88	9.50	22.18	18.92	8.41	8.28
255.0	63.33	32.79	28.41	2.81	8.36	22.39	18.77	7.64	5.20
260.0	63.27	32.70	28.28	2.76	8.65	21.50	17.72	7.29	5.24
265.0	9.59	2.04	8.56	0.06	17.28	3.38	4.23	4.33	5.57
270.0	9.60	2.00	8.40	0.01	17.62	2.41	3.21	4.00	5.60
275.0	9.57	2.11	8.50	0.42	17.42	3.06	3.28	3.65	5.18
280.0	57.89	37.65	19.22	23.70	12.61	16.04	4.33	0.38	2.41
285.0	58.06	37.57	19.14	24.08	12.40	16.83	4.41	0.01	1.99

Intensity data(cd)									Appendix Page: 19 Total:23
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
290.0	57.96	37.93	19.63	24.63	13.47	18.13	6.18	2.79	4.71
295.0	146.90	108.32	81.09	58.13	49.80	42.99	29.09	28.05	22.83
300.0	146.85	108.99	81.65	58.70	50.83	44.32	30.91	30.70	25.67
305.0	146.76	109.27	82.10	59.99	52.49	46.30	33.19	32.63	27.51
310.0	240.88	183.83	143.93	121.51	103.02	83.97	64.49	48.76	39.29
315.0	240.10	184.18	144.71	122.14	104.22	86.29	67.25	50.51	41.30
320.0	240.88	184.41	145.26	123.34	104.86	87.28	69.83	51.92	44.27
325.0	303.71	234.81	201.44	162.34	129.12	115.18	101.66	63.73	63.47
330.0	304.61	234.84	203.16	163.38	129.54	117.41	103.18	65.28	66.23
335.0	303.81	236.21	203.32	164.50	130.16	118.82	103.59	68.67	68.15
340.0	333.57	288.98	249.27	218.72	167.32	145.15	116.43	100.16	80.55
345.0	333.57	288.44	250.28	218.66	168.96	146.69	118.00	103.26	81.42
350.0	334.33	289.08	250.11	218.57	168.34	147.17	117.59	102.89	81.35
355.0	359.49	316.22	259.29	213.55	186.83	154.05	116.08	101.31	79.48
360.0	360.19	317.52	258.85	213.25	186.64	154.74	116.89	101.28	78.79

Intensity data(cd)										Appendix Page: 20 Total:23	
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0		
0.0	62.52	57.31	47.62	34.57	10.52	14.69	10.03	3.56	8.96		
5.0	62.60	56.79	46.43	35.75	12.19	11.87	7.65	1.02	8.96		
10.0	63.06	56.00	43.24	38.58	14.56	8.67	5.70	0.26	8.93		
15.0	63.04	55.47	42.18	40.08	16.18	5.81	5.38	0.74	8.83		
20.0	60.85	53.42	39.36	31.18	11.50	6.52	8.68	1.13	8.40		
25.0	51.54	46.14	32.39	13.27	4.73	7.46	12.80	1.39	7.83		
30.0	49.61	44.06	29.60	4.54	0.02	8.37	15.06	1.33	7.32		
35.0	47.04	41.46	27.60	7.70	3.04	11.21	12.29	1.40	7.00		
40.0	34.93	31.81	22.09	14.06	7.42	14.23	7.78	1.55	6.84		
45.0	32.38	29.21	20.02	17.16	10.46	16.94	4.19	2.32	6.44		
50.0	30.84	26.20	19.56	16.93	10.47	12.83	4.50	2.98	5.66		
55.0	24.40	15.43	18.38	16.56	10.48	8.35	6.78	3.57	4.75		
60.0	22.91	12.37	17.96	16.37	10.45	4.23	8.91	3.63	4.06		
65.0	20.26	10.19	14.60	15.13	8.69	5.59	9.69	3.63	3.81		
70.0	7.53	2.24	5.39	12.49	6.19	7.25	9.47	3.10	3.95		
75.0	4.81	0.02	1.99	11.14	4.46	8.66	9.77	2.49	4.28		
80.0	4.81	1.56	1.58	8.42	4.39	6.95	10.93	1.94	4.71		
85.0	4.80	7.21	0.45	2.80	4.39	5.04	12.18	1.85	5.00		
90.0	4.81	8.77	0.05	0.00	4.37	3.30	12.86	1.84	5.05		
95.0	5.95	8.04	2.83	1.80	6.67	4.67	12.17	1.85	5.08		
100.0	11.60	5.20	10.42	5.41	10.07	6.21	10.92	2.13	5.28		
105.0	12.79	4.42	13.13	7.27	12.36	7.61	9.99	3.26	5.72		
110.0	13.23	6.53	13.14	8.22	14.20	6.52	10.19	4.43	6.51		
115.0	15.22	14.27	13.25	10.21	16.89	5.27	10.92	5.84	7.37		
120.0	15.60	16.39	13.22	11.17	18.68	4.22	11.28	7.20	7.87		
125.0	17.27	18.29	13.36	11.29	19.03	6.84	10.76	8.57	7.65		
130.0	25.48	25.31	13.57	11.55	19.58	9.72	9.97	8.92	7.10		
135.0	27.13	27.20	13.68	11.62	19.87	12.55	9.26	8.79	6.45		
140.0	24.88	24.41	17.36	12.94	18.87	15.65	9.20	8.65	6.03		
145.0	13.94	14.16	27.73	15.52	17.47	19.08	9.42	9.01	5.93		
150.0	11.65	11.17	31.56	16.94	16.38	22.10	10.36	9.85	6.18		
155.0	14.81	11.21	27.41	21.05	15.69	18.01	12.02	10.66	6.50		
160.0	29.79	11.29	16.11	29.39	14.71	13.54	13.69	10.53	6.74		
165.0	32.95	11.33	11.98	33.54	14.13	9.34	14.26	8.97	6.84		
170.0	33.44	10.37	14.73	33.22	15.19	7.32	12.66	7.41	7.06		
175.0	36.30	7.04	22.39	32.55	16.80	5.25	10.38	6.49	7.30		
180.0	37.05	6.13	25.12	32.34	17.79	3.33	8.65	7.06	7.55		
185.0	37.43	8.14	25.69	32.20	15.77	2.39	8.89	7.68	7.70		
190.0	39.21	15.38	27.02	31.77	12.95	1.44	10.19	8.78	7.94		
195.0	39.75	17.37	27.41	31.46	10.97	0.62	11.38	8.99	8.43		
200.0	35.76	19.07	28.87	29.16	9.09	4.08	11.77	9.09	9.04		
205.0	16.76	26.03	32.64	24.69	6.38	7.88	11.71	7.36	9.60		
210.0	12.80	27.95	34.08	22.50	4.51	11.42	10.79	4.43	10.05		
215.0	14.07	28.70	27.47	22.78	10.20	13.05	8.84	1.64	10.44		
220.0	20.02	31.27	9.85	23.85	18.45	14.56	6.87	1.03	10.80		
225.0	21.18	31.96	3.31	24.27	23.99	15.87	4.68	2.26	11.19		
230.0	18.42	29.64	2.63	22.37	21.06	12.06	3.21	3.55	11.96		
235.0	5.52	21.44	0.80	18.62	16.63	8.04	2.56	5.36	12.77		
240.0	2.90	19.16	0.11	16.81	13.65	4.18	2.72	8.06	13.29		
245.0	2.75	17.10	0.66	14.50	10.98	4.33	4.39	10.60	13.16		
250.0	2.15	9.66	2.24	9.90	7.08	4.60	6.35	12.47	12.84		
255.0	2.01	7.56	2.83	7.61	4.42	4.90	7.67	14.10	12.37		
260.0	3.24	6.61	5.60	8.23	6.01	8.41	7.01	15.63	11.88		
265.0	9.20	3.03	13.13	9.42	8.37	12.24	5.47	16.45	11.23		
270.0	10.41	2.02	15.92	10.04	10.00	15.73	3.92	16.59	10.47		
275.0	9.11	5.81	13.59	9.80	8.41	12.45	2.99	16.75	9.48		
280.0	2.88	19.68	7.19	9.40	6.04	8.77	2.79	15.61	8.29		
285.0	1.60	23.61	4.89	9.17	4.44	5.31	2.62	12.69	7.17		

Intensity data(cd)										Appendix Page: 21 Total:23	
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0		
290.0	4.69	22.66	6.38	9.80	4.89	6.37	2.74	9.59	6.42		
295.0	19.35	18.96	10.54	11.04	5.57	7.57	2.97	7.07	6.14		
300.0	22.42	18.02	12.06	11.62	6.05	8.73	3.31	5.41	6.13		
305.0	23.53	20.08	11.40	11.29	8.09	9.57	3.71	3.88	6.38		
310.0	28.22	27.20	9.55	10.69	11.13	10.41	4.01	4.52	6.60		
315.0	29.30	29.24	8.90	10.37	13.19	11.21	3.87	6.98	6.75		
320.0	32.32	32.44	13.32	10.37	10.90	11.95	2.87	9.49	6.79		
325.0	46.95	44.44	24.87	10.18	7.53	12.77	1.73	11.29	6.90		
330.0	50.03	47.91	29.18	10.08	5.22	13.48	2.14	12.77	7.11		
335.0	50.84	51.00	31.12	13.99	5.41	12.87	5.26	14.11	7.67		
340.0	55.13	61.16	36.42	22.05	5.61	12.17	8.86	13.67	8.31		
345.0	55.98	64.18	38.26	26.06	5.74	11.63	12.03	11.27	8.90		
350.0	57.40	63.19	40.07	28.19	7.14	12.61	12.67	8.73	9.07		
355.0	61.64	58.18	45.69	32.42	9.14	13.77	11.70	6.20	9.03		
360.0	62.52	57.31	47.62	34.57	10.52	14.69	10.03	3.56	8.96		

Intensity data(cd)

C/γ(°)	180.0
0.0	7.67
5.0	7.67
10.0	7.67
15.0	7.67
20.0	7.67
25.0	7.67
30.0	7.67
35.0	7.67
40.0	7.67
45.0	7.67
50.0	7.67
55.0	7.67
60.0	7.67
65.0	7.67
70.0	7.67
75.0	7.67
80.0	7.67
85.0	7.67
90.0	7.67
95.0	7.67
100.0	7.67
105.0	7.67
110.0	7.67
115.0	7.67
120.0	7.67
125.0	7.67
130.0	7.67
135.0	7.67
140.0	7.67
145.0	7.67
150.0	7.67
155.0	7.67
160.0	7.67
165.0	7.67
170.0	7.67
175.0	7.67
180.0	7.67
185.0	7.67
190.0	7.67
195.0	7.67
200.0	7.67
205.0	7.67
210.0	7.67
215.0	7.67
220.0	7.67
225.0	7.67
230.0	7.67
235.0	7.67
240.0	7.67
245.0	7.67
250.0	7.67
255.0	7.67
260.0	7.67
265.0	7.67
270.0	7.67
275.0	7.67
280.0	7.67
285.0	7.67

Intensity data(cd)

Appendix Page: 23 Total:23

C/γ(°)	180.0
290.0	7.67
295.0	7.67
300.0	7.67
305.0	7.67
310.0	7.67
315.0	7.67
320.0	7.67
325.0	7.67
330.0	7.67
335.0	7.67
340.0	7.67
345.0	7.67
350.0	7.67
355.0	7.67
360.0	7.67