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Nata

Client:

LumCAT: 1653-S

Luminaire: 92.70.043.00

Report No:

Voltage(V): 31.5600

Test No: GC20190824010

Current(A): 0.1970

LampCAT: XICATO XOB LES 6MM

Power (W): 6.2200

Lamp flux(lm): 658.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 32

Width(mm): 32

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 579.16, Efficiency(%): 88.02% , Luminous Efficacy(lm/W): 93.11

Central intensity(cd): 3865.359, Maximum intensity(cd): 3865.359

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=16.2

[C90/270]Total=16.2

Field angle(10%Imax): [C0/180]Total=34.0

[C90/270]Total=34.0

Maximum s/h(1/2): C0_180=0.28 C90_270=0.28

Maximum s/h(1/4): C0_180=0.28 C90_270=0.28

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.02%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.683%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3865.359	0.000	0	.000%	.000%
1.0	3832.031	3.683	3.683	.560%	.636%
2.0	3718.617	10.837	14.52	1.647%	2.507%
3.0	3540.586	17.362	31.882	2.639%	5.505%
4.0	3309.680	22.930	54.812	3.485%	9.464%
5.0	2996.719	27.130	81.942	4.123%	14.148%
6.0	2659.078	29.723	111.665	4.517%	19.280%
7.0	2320.805	30.910	142.575	4.698%	24.617%
8.0	1952.297	30.582	173.156	4.648%	29.898%
9.0	1603.216	28.816	201.972	4.379%	34.873%
10.0	1325.426	26.503	228.475	4.028%	39.449%
11.0	1052.719	23.763	252.238	3.611%	43.552%
12.0	871.692	21.037	273.274	3.197%	47.184%
13.0	720.401	18.894	292.168	2.871%	50.446%
14.0	596.658	16.858	309.027	2.562%	53.357%
15.0	506.679	15.147	324.174	2.302%	55.973%
16.0	439.812	13.869	338.042	2.108%	58.367%
17.0	384.434	12.836	350.878	1.951%	60.583%
18.0	345.073	12.028	362.906	1.828%	62.660%
19.0	317.257	11.523	374.429	1.751%	64.650%
20.0	292.528	11.161	385.59	1.696%	66.577%
21.0	273.621	10.871	396.461	1.652%	68.454%
22.0	261.661	10.757	407.218	1.635%	70.311%
23.0	250.474	10.746	417.964	1.633%	72.167%
24.0	237.473	10.668	428.632	1.621%	74.009%
25.0	229.774	10.624	439.256	1.615%	75.843%
26.0	223.397	10.697	449.954	1.626%	77.690%
27.0	217.702	10.792	460.745	1.640%	79.553%
28.0	211.662	10.871	471.616	1.652%	81.430%
29.0	204.933	10.899	482.515	1.656%	83.312%
30.0	194.709	10.790	493.305	1.640%	85.175%
31.0	180.879	10.452	503.757	1.588%	86.980%
32.0	162.260	9.831	513.588	1.494%	88.677%
33.0	141.061	8.936	522.524	1.358%	90.220%
34.0	118.624	7.859	530.383	1.194%	91.577%
35.0	93.825	6.598	536.981	1.003%	92.716%
36.0	71.276	5.257	542.237	.799%	93.624%
37.0	52.059	4.023	546.26	.611%	94.319%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	34.460	2.888	549.148	.439%	94.817%
39.0	22.071	1.930	551.077	.293%	95.150%
40.0	15.623	1.315	552.392	.200%	95.377%
41.0	12.016	0.984	553.376	.150%	95.547%
42.0	10.491	0.818	554.194	.124%	95.688%
43.0	9.654	0.746	554.94	.113%	95.817%
44.0	9.028	0.705	555.645	.107%	95.939%
45.0	8.578	0.677	556.322	.103%	96.056%
46.0	8.304	0.660	556.982	.100%	96.170%
47.0	8.170	0.655	557.637	.100%	96.283%
48.0	8.051	0.656	558.293	.100%	96.396%
49.0	7.966	0.658	558.951	.100%	96.510%
50.0	7.755	0.655	559.606	.100%	96.623%
51.0	7.559	0.648	560.254	.098%	96.735%
52.0	7.439	0.644	560.898	.098%	96.846%
53.0	7.249	0.639	561.537	.097%	96.956%
54.0	7.024	0.629	562.166	.096%	97.065%
55.0	6.806	0.617	562.783	.094%	97.171%
56.0	6.581	0.605	563.388	.092%	97.276%
57.0	6.469	0.597	563.985	.091%	97.379%
58.0	6.356	0.593	564.578	.090%	97.481%
59.0	6.195	0.587	565.165	.089%	97.583%
60.0	6.082	0.580	565.745	.088%	97.683%
61.0	6.033	0.578	566.323	.088%	97.783%
62.0	5.885	0.574	566.897	.087%	97.882%
63.0	5.688	0.563	567.46	.086%	97.979%
64.0	5.498	0.549	568.009	.083%	98.074%
65.0	5.365	0.538	568.547	.082%	98.167%
66.0	5.175	0.526	569.072	.080%	98.257%
67.0	4.971	0.510	569.583	.078%	98.345%
68.0	4.838	0.497	570.079	.076%	98.431%
69.0	4.718	0.487	570.567	.074%	98.515%
70.0	4.620	0.480	571.046	.073%	98.598%
71.0	4.451	0.469	571.515	.071%	98.679%
72.0	4.380	0.459	571.974	.070%	98.758%
73.0	4.338	0.456	572.43	.069%	98.837%
74.0	4.317	0.455	572.885	.069%	98.916%
75.0	4.268	0.454	573.339	.069%	98.994%

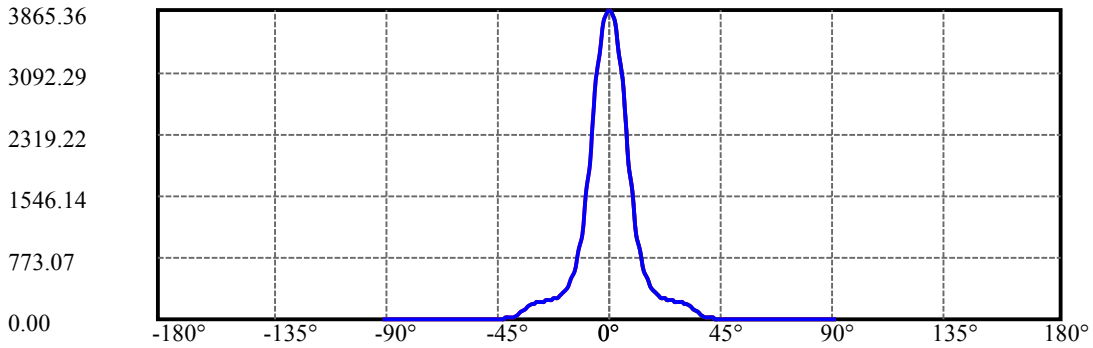
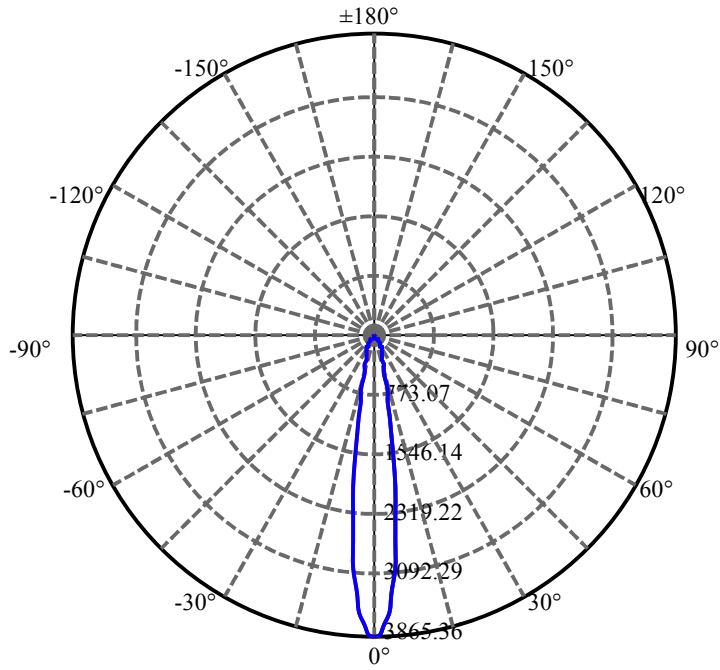
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	4.184	0.449	573.788	.068%	99.072%
77.0	4.085	0.441	574.229	.067%	99.148%
78.0	3.966	0.431	574.66	.065%	99.222%
79.0	3.846	0.420	575.079	.064%	99.295%
80.0	3.748	0.409	575.489	.062%	99.365%
81.0	3.642	0.400	575.888	.061%	99.434%
82.0	3.614	0.393	576.282	.060%	99.502%
83.0	3.537	0.389	576.67	.059%	99.569%
84.0	3.417	0.379	577.049	.058%	99.635%
85.0	3.396	0.372	577.421	.057%	99.699%
86.0	3.347	0.369	577.79	.056%	99.763%
87.0	3.277	0.362	578.152	.055%	99.825%
88.0	3.115	0.350	578.502	.053%	99.886%
89.0	3.016	0.336	578.838	.051%	99.944%
90.0	2.939	0.327	579.165	.050%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	493.31	74.97%	85.18%
0-40	552.39	83.95%	95.38%
0-60	565.74	85.98%	97.68%
0-90	578.84	87.97%	99.94%
0-120	578.84	87.97%	99.94%
0-180	579.16	88.02%	100.00%
60-90	13.67	2.08%	2.36%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.24	463.33	70.42%	80.00%

ZONAL LUMEN SUMMARY

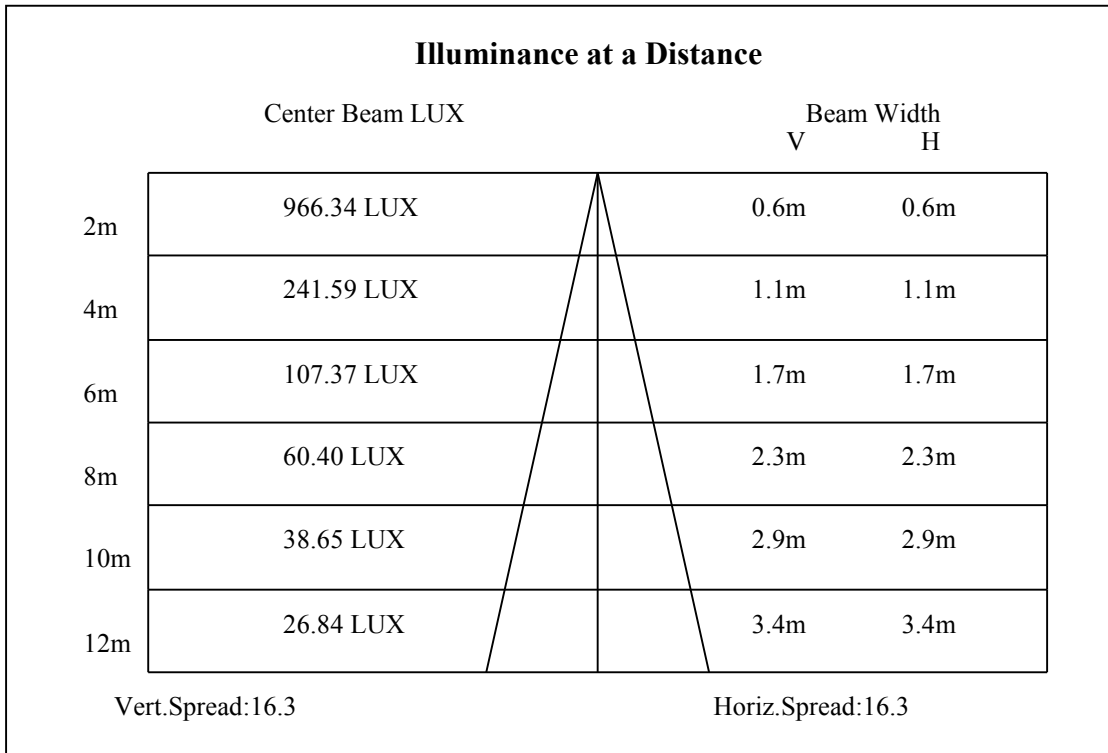
0-10	228.48
10-20	157.11
20-30	107.72
30-40	59.09
40-50	7.21
50-60	6.14
60-70	5.30
70-80	4.44
80-90	3.35
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

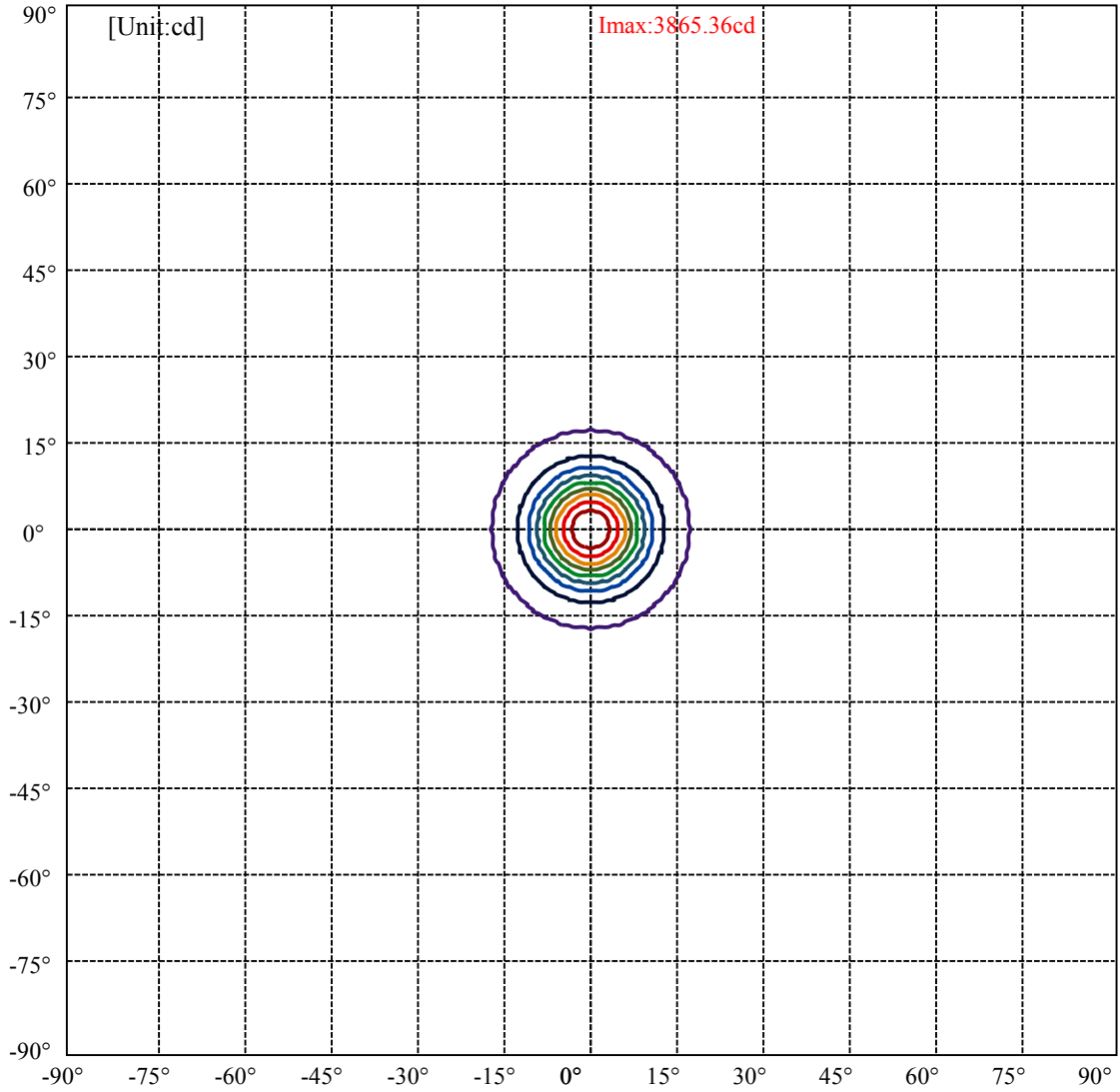


C0(Max): —————
C0/C180: —————
C90/C270: —————

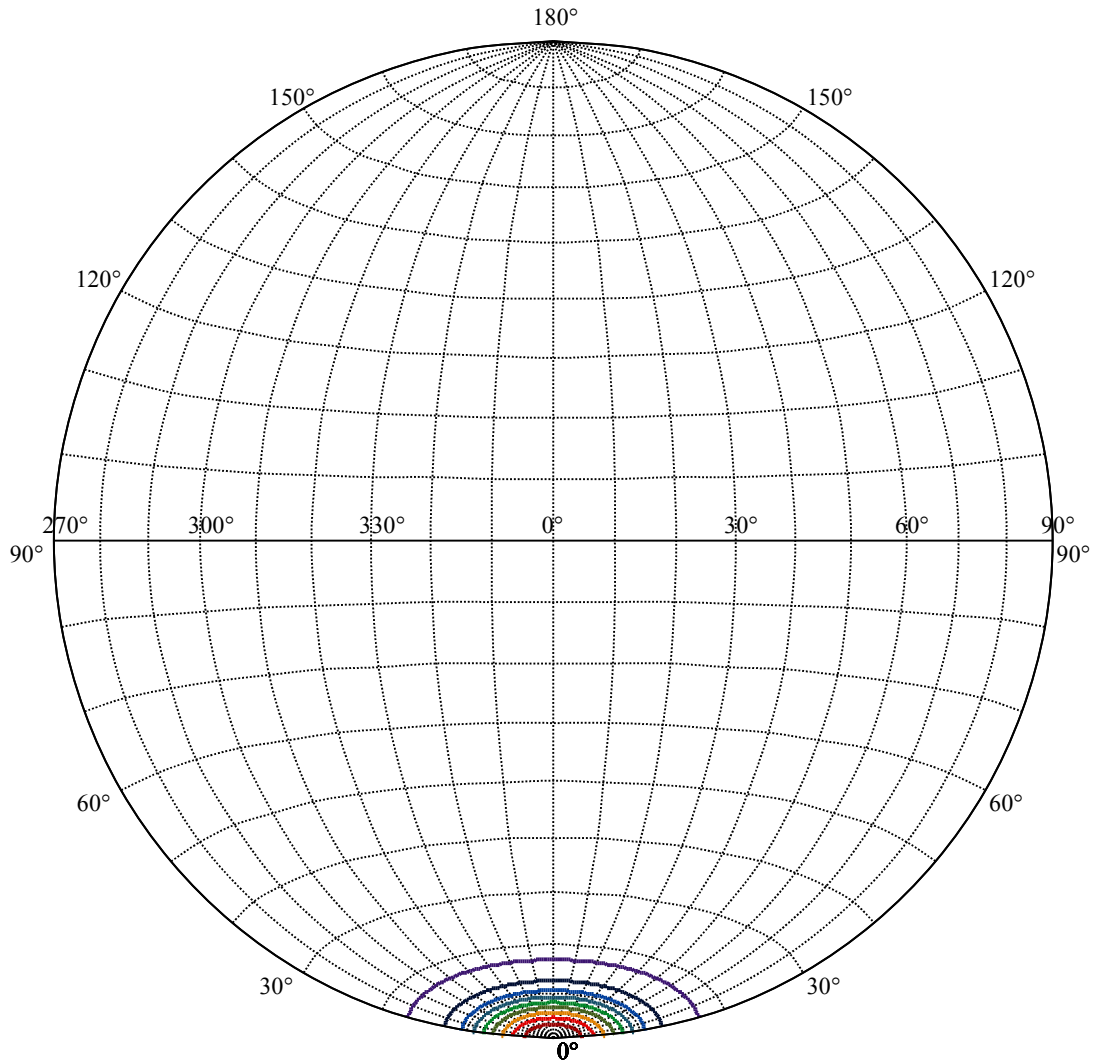
Field angle(10%Imax):C0/180Left:17.0 Right:17.0
:C90/270Left:17.0 Right:17.0

Beam Angle(50%Imax):C0/180Left:8.1 Right:8.1
:C90/270Left:8.1 Right:8.1





(10%Imax) 386.536	—
(20%Imax) 773.072	—
(30%Imax) 1159.61	—
(40%Imax) 1546.14	—
(50%Imax) 1932.68	—
(60%Imax) 2319.22	—
(70%Imax) 2705.75	—
(80%Imax) 3092.29	—
(90%Imax) 3478.82	—



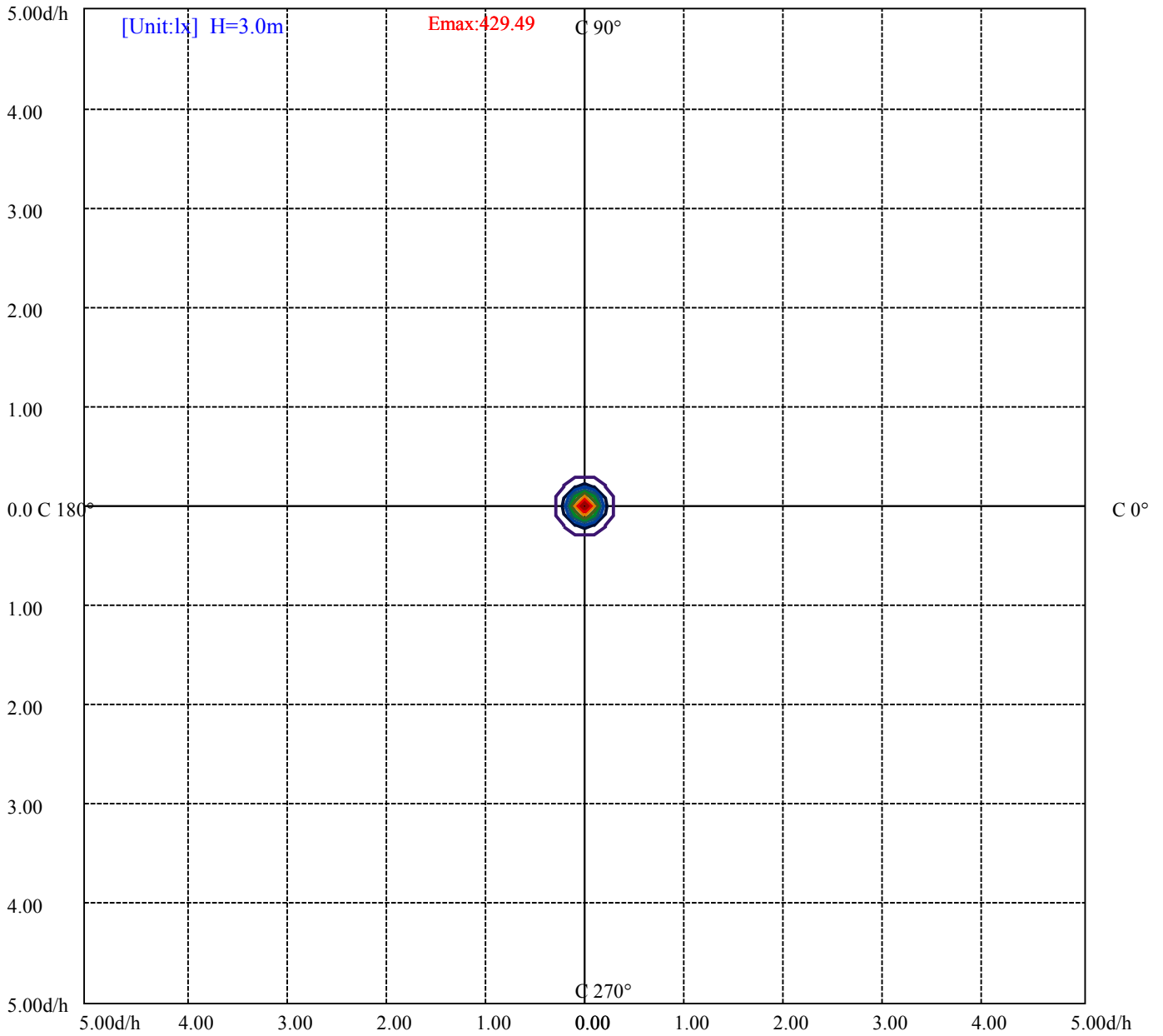
House

[Unit:cd]

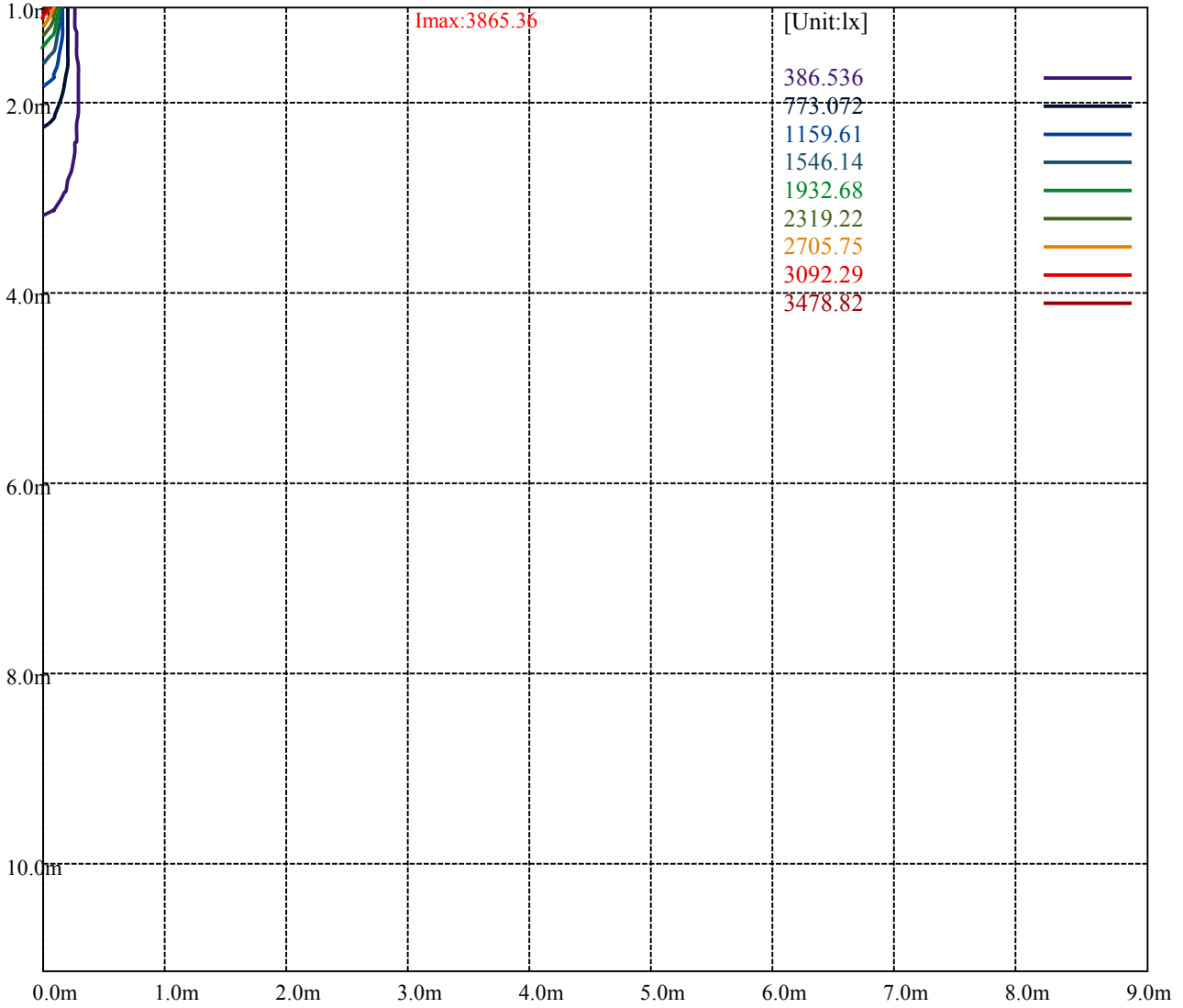
Road

Imax:3865.36

(10%Imax) 386.536	—
(20%Imax) 773.072	—
(30%Imax) 1159.61	—
(40%Imax) 1546.14	—
(50%Imax) 1932.68	—
(60%Imax) 2319.22	—
(70%Imax) 2705.75	—
(80%Imax) 3092.29	—
(90%Imax) 3478.82	—



(10%Emax) 42.94833	—
(20%Emax) 85.89677	—
(30%Emax) 128.8456	—
(40%Emax) 171.7933	—
(50%Emax) 214.7422	—
(60%Emax) 257.69	—
(70%Emax) 300.6389	—
(80%Emax) 343.5867	—
(90%Emax) 386.5356	—



Luminance Table

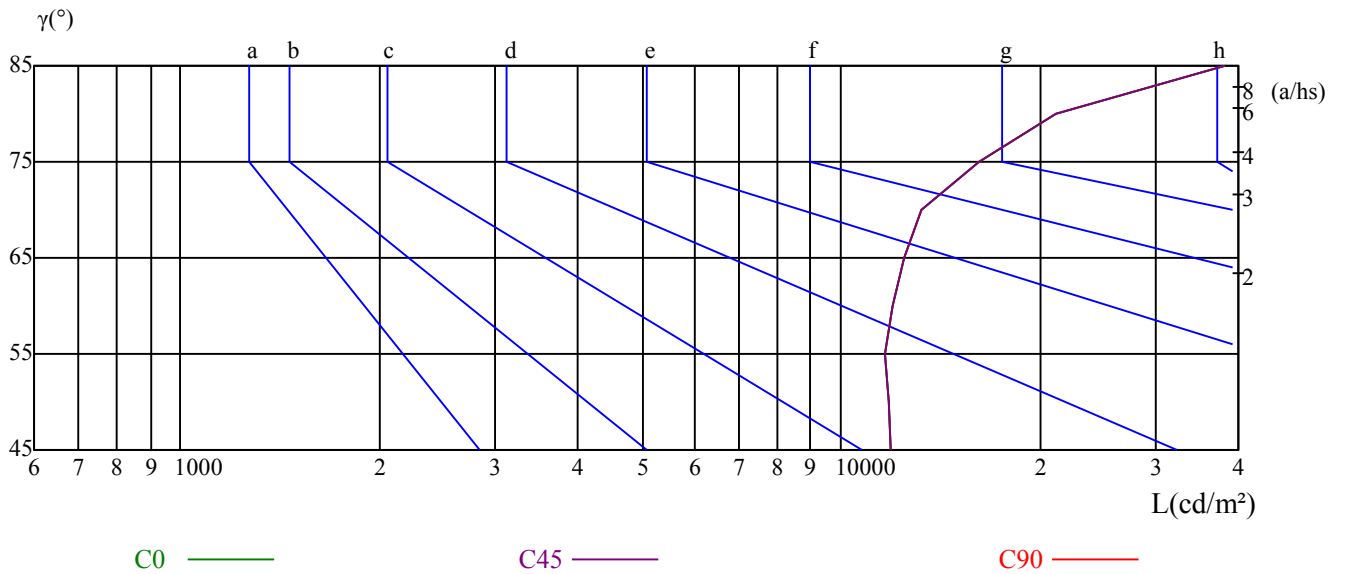
γ	45	50	55	60	65	70	75	80	85
C0	11921	11857	11661	11954	12475	13273	16205	21208	38291
C45	11921	11857	11661	11954	12475	13273	16205	21208	38291
C90	11921	11857	11661	11954	12475	13273	16205	21208	38291

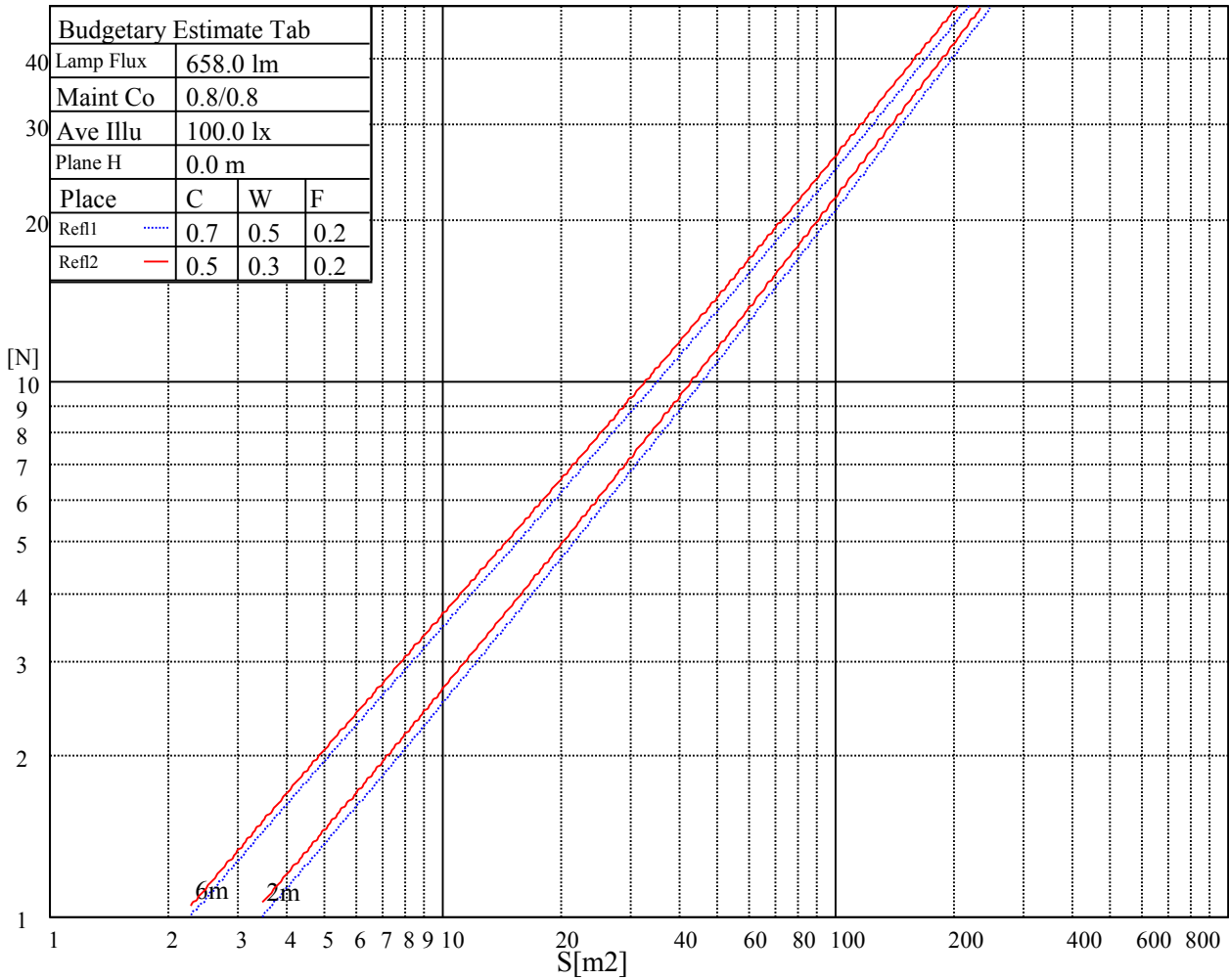
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
12475	12475	12475	16205	16205	16205	38291	38291	38291

Glare Table

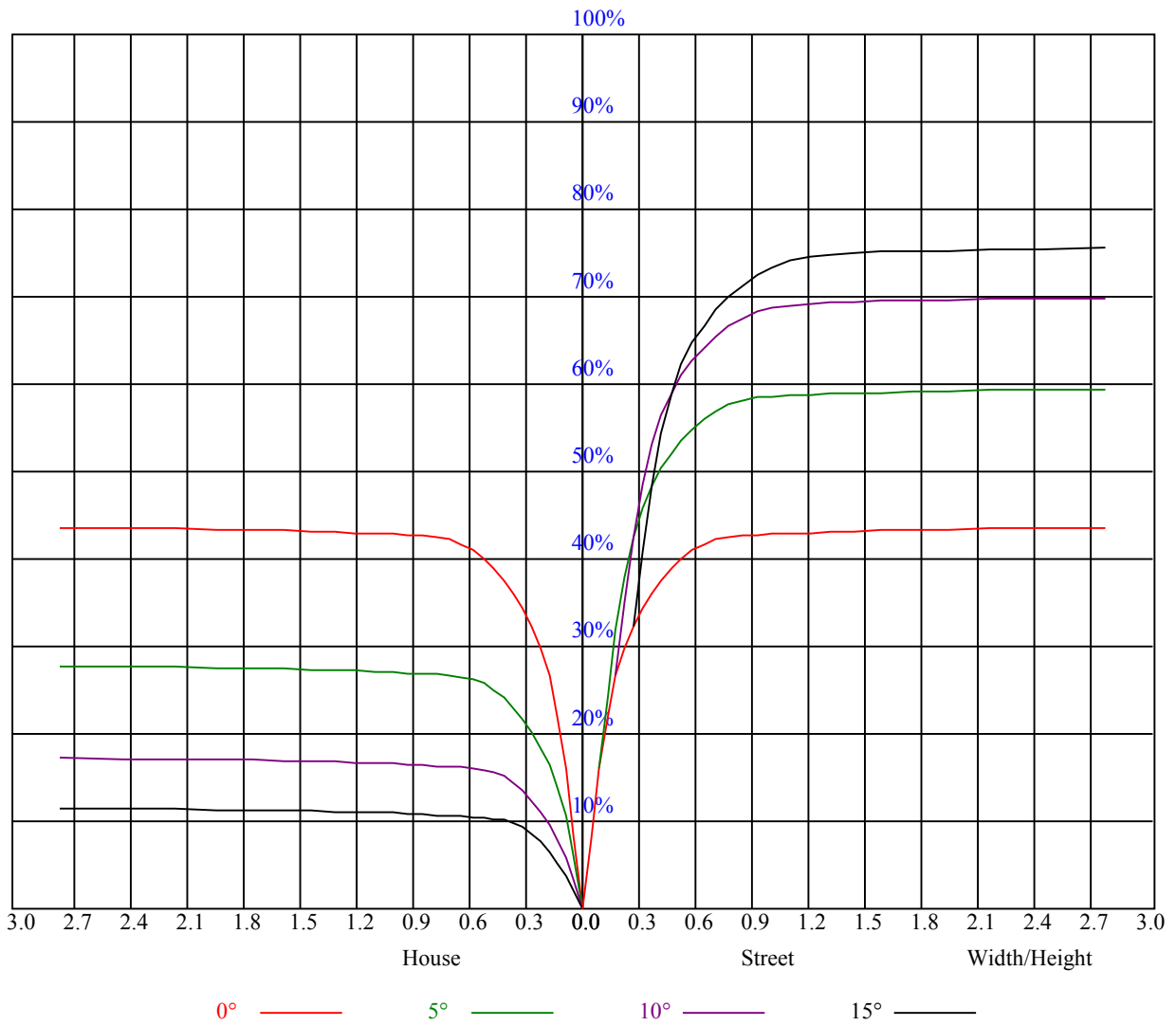
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

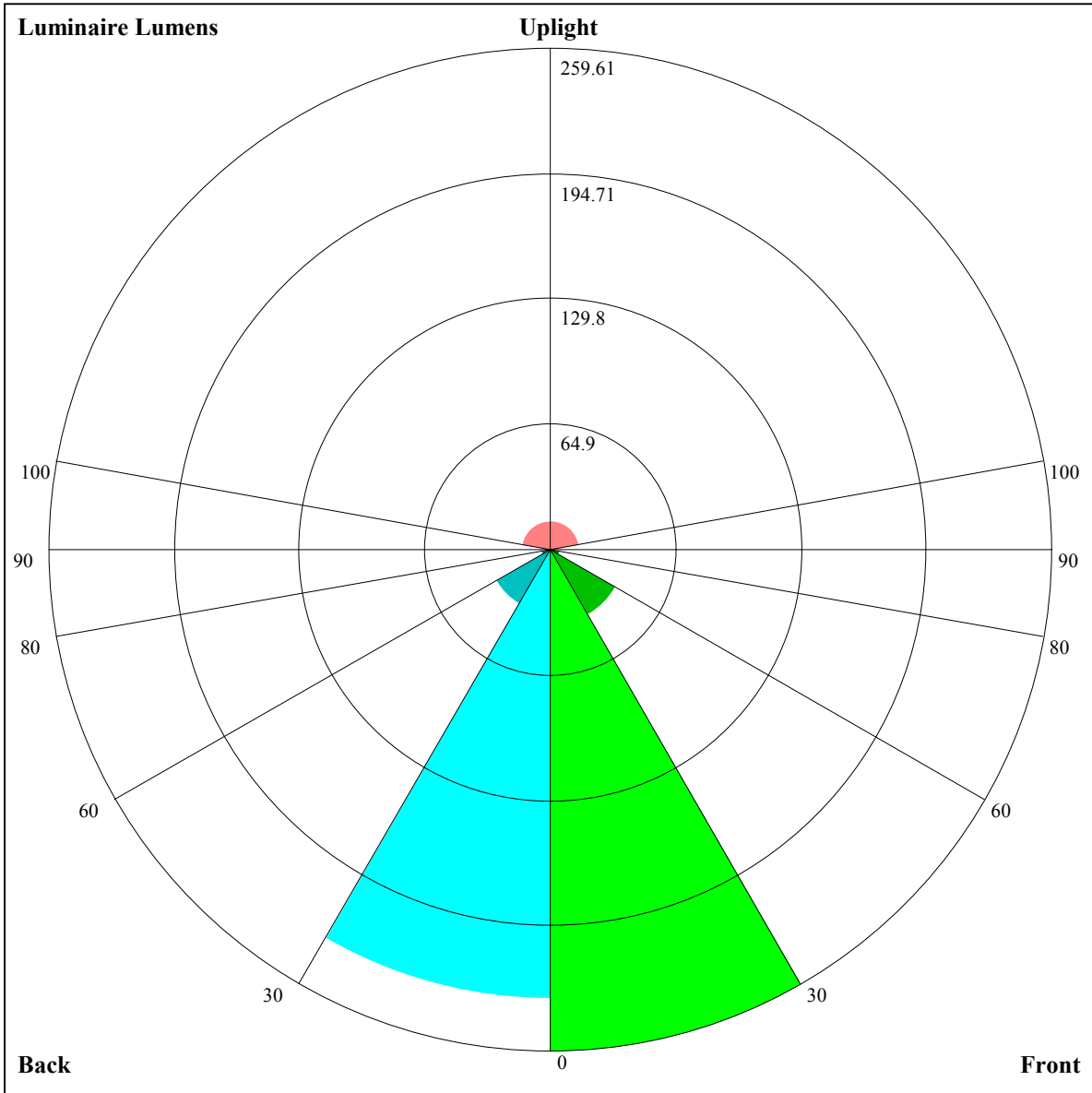
Luminance Limiting Curve





RHOCC	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 RHOFC=20 CU															
0	1.05	1.05	1.05	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.98	0.97	0.95	0.97	0.95	0.93	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84
2	0.93	0.90	0.88	0.92	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.84	0.83	0.81	0.80
3	0.89	0.85	0.82	0.88	0.84	0.82	0.85	0.83	0.80	0.83	0.81	0.79	0.81	0.80	0.78	0.77
4	0.85	0.81	0.78	0.84	0.80	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.79	0.77	0.75	0.74
5	0.81	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	0.78	0.74	0.71	0.78	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.74	0.72	0.70	0.69
7	0.75	0.71	0.69	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.70	0.67	0.67
8	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64
9	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63
10	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.61





Luminaire Lumens:

FL=259.61,FM=39.43,FH=4.92,FVH=1.83

BL=232.98,BM=32.94,BH=4.78,BVH=1.81

UL=3.21,UH=15.26

BUG Rating:B1-U2-G0

Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	3883.50	3879.00	3790.69	3653.44	3479.63	3155.06	2874.38	2605.50	2198.81
45.0	3839.06	3892.50	3894.75	3814.88	3686.63	3503.25	3209.63	2909.25	2583.00
90.0	3876.75	3900.94	3852.56	3747.94	3580.31	3322.69	3044.81	2676.38	2286.56
135.0	3862.13	3882.94	3828.38	3717.00	3532.50	3258.00	2921.63	2587.50	2194.88
180.0	3883.50	3822.75	3679.88	3446.44	3173.06	2818.69	2422.69	2065.50	1674.00
225.0	3839.06	3702.38	3502.13	3204.00	2845.13	2491.31	2090.81	1706.63	1402.88
270.0	3876.75	3800.25	3604.50	3385.13	3089.25	2678.06	2325.94	1971.56	1603.69
315.0	3862.13	3775.50	3596.06	3355.88	3090.94	2746.69	2382.75	2044.13	1674.56
360.0	3883.50	3879.00	3790.69	3653.44	3479.63	3155.06	2874.38	2605.50	2198.81
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1830.94	1562.63	1243.69	1033.88	869.63	714.94	613.69	534.94	462.38
45.0	2211.75	1835.44	1557.56	1219.50	987.75	821.81	676.13	575.44	488.25
90.0	1936.69	1569.94	1105.14	1027.80	853.09	680.01	571.22	485.94	412.93
135.0	1804.50	1513.69	1154.81	929.81	763.31	614.81	520.88	447.19	381.94
180.0	1265.63	1078.37	870.36	700.03	589.89	490.16	413.33	369.79	333.56
225.0	1112.79	885.21	725.29	603.68	485.04	416.48	362.59	311.79	282.26
270.0	1283.63	1049.06	845.44	706.50	582.75	488.25	424.69	371.25	331.31
315.0	1379.81	1109.68	919.46	752.34	631.74	546.81	470.93	422.16	382.84
360.0	1830.94	1562.63	1243.69	1033.88	869.63	714.94	613.69	534.94	462.38
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	419.06	384.19	347.06	321.19	301.50	284.63	266.18	254.87	244.74
45.0	420.75	374.63	337.50	307.69	288.00	285.19	251.10	240.69	232.71
90.0	357.02	321.86	289.13	264.04	246.21	229.61	217.35	208.41	202.05
135.0	346.50	321.19	298.13	285.19	284.06	260.66	248.91	240.75	233.04
180.0	303.36	285.41	272.48	260.89	254.19	246.49	239.68	232.88	227.59
225.0	258.86	236.53	226.07	217.63	210.49	207.51	204.98	201.26	198.06
270.0	303.19	285.75	260.33	244.07	235.13	227.70	221.01	216.23	212.85
315.0	351.84	328.50	309.54	288.28	273.71	262.01	250.59	243.11	236.14
360.0	419.06	384.19	347.06	321.19	301.50	284.63	266.18	254.87	244.74
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	236.36	229.44	223.37	218.42	209.81	194.23	175.78	153.51	123.81
45.0	224.83	218.31	214.65	210.77	206.72	198.06	182.98	163.58	140.23
90.0	196.26	191.53	186.08	181.69	174.54	158.51	142.03	123.58	100.07
135.0	227.98	221.63	216.11	208.58	192.66	171.51	147.88	124.03	94.11
180.0	222.24	217.01	207.79	189.17	169.14	144.39	118.01	94.50	71.89
225.0	194.74	183.77	171.84	155.19	135.56	115.09	95.68	73.35	52.93
270.0	209.42	207.45	201.04	187.14	168.41	149.01	124.93	99.56	77.85
315.0	229.78	224.16	218.59	206.72	190.18	167.29	141.19	116.89	89.72
360.0	236.36	229.44	223.37	218.42	209.81	194.23	175.78	153.51	123.81
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	99.23	75.21	47.81	30.49	18.23	11.93	10.80	9.96	8.89
45.0	116.27	94.89	72.68	47.64	30.60	18.06	12.21	10.97	10.13
90.0	80.83	62.21	42.24	28.46	18.51	13.11	11.93	10.86	9.73
135.0	71.27	50.57	30.94	17.27	11.25	10.07	9.51	9.11	8.72
180.0	46.35	29.59	17.55	10.80	10.01	9.45	8.94	8.44	8.10
225.0	36.96	23.12	16.03	13.67	12.43	11.42	10.52	9.84	9.62
270.0	55.52	37.74	21.77	13.78	12.32	11.36	10.24	9.28	8.89
315.0	63.79	43.14	26.66	14.46	11.64	10.74	9.79	8.78	8.16
360.0	99.23	75.21	47.81	30.49	18.23	11.93	10.80	9.96	8.89

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	7.88	7.65	7.43	7.31	7.03	6.81	6.53	6.30	6.08
45.0	8.83	7.76	7.48	7.31	7.26	7.14	7.09	7.03	6.86
90.0	9.00	8.61	8.33	8.16	7.99	7.93	7.82	7.71	7.54
135.0	8.44	8.55	8.49	8.55	8.49	8.44	8.10	7.99	7.93
180.0	8.21	7.99	7.99	7.82	7.71	7.20	6.98	6.81	6.64
225.0	9.51	9.23	9.06	8.94	8.78	8.44	8.27	8.10	7.82
270.0	8.72	8.83	8.83	8.83	9.06	9.06	8.89	8.89	8.72
315.0	8.04	7.82	7.76	7.48	7.43	7.03	6.81	6.69	6.41
360.0	7.88	7.65	7.43	7.31	7.03	6.81	6.53	6.30	6.08
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.79	5.57	5.29	5.23	5.23	5.23	5.23	5.23	5.29
45.0	6.75	6.81	6.53	6.47	6.47	6.36	6.24	6.13	6.19
90.0	7.43	7.26	7.09	7.09	6.98	6.81	6.58	6.53	6.36
135.0	7.71	7.31	7.03	6.75	6.53	6.36	6.24	6.30	6.02
180.0	6.13	5.91	5.74	5.57	5.51	5.46	5.34	5.40	5.40
225.0	7.76	7.48	7.26	7.09	6.81	6.41	6.24	6.02	5.63
270.0	8.49	8.16	7.76	7.54	7.20	6.75	6.53	6.24	5.85
315.0	6.13	5.96	5.96	6.02	6.13	6.19	6.24	6.41	6.36
360.0	5.79	5.57	5.29	5.23	5.23	5.23	5.23	5.23	5.29
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	5.34	5.34	5.34	5.29	5.06	4.95	4.89	4.89	4.56
45.0	6.08	5.79	5.68	5.46	5.12	5.01	4.73	4.56	4.39
90.0	6.02	5.68	5.34	5.06	4.73	4.44	4.39	4.28	4.16
135.0	5.85	5.79	5.79	5.85	5.63	5.57	5.46	5.34	5.06
180.0	5.29	5.29	5.18	4.95	4.73	4.56	4.44	4.28	4.16
225.0	5.23	4.89	4.73	4.50	4.50	4.44	4.39	4.33	4.22
270.0	5.51	5.23	4.95	4.73	4.61	4.56	4.44	4.44	4.39
315.0	6.19	5.96	5.91	5.57	5.40	5.18	5.01	4.84	4.67
360.0	5.34	5.34	5.34	5.29	5.06	4.95	4.89	4.89	4.56
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.39	4.44	4.50	4.61	4.61	4.44	4.16	3.94	3.83
45.0	4.33	4.33	4.33	4.33	4.33	4.22	4.22	4.05	3.94
90.0	4.16	4.11	4.11	4.11	3.99	3.94	3.83	3.77	3.66
135.0	4.95	4.89	4.78	4.67	4.56	4.50	4.39	4.33	4.22
180.0	4.05	3.99	3.94	3.88	3.71	3.71	3.60	3.49	3.43
225.0	4.16	4.11	4.05	3.94	3.88	3.71	3.60	3.49	3.43
270.0	4.39	4.33	4.33	4.22	4.11	3.99	3.83	3.71	3.60
315.0	4.61	4.50	4.50	4.39	4.28	4.16	4.11	3.99	3.88
360.0	4.39	4.44	4.50	4.61	4.61	4.44	4.16	3.94	3.83
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.60	3.43	3.38	3.32	3.38	3.38	3.43	3.21	3.15
45.0	3.83	3.71	3.60	3.49	3.38	3.26	3.15	3.04	2.93
90.0	3.60	3.49	3.38	3.32	3.26	3.09	2.98	2.93	2.87
135.0	4.11	4.05	3.99	3.94	3.94	3.83	3.83	3.77	3.66
180.0	3.32	3.32	3.32	3.26	3.26	3.26	3.21	3.15	2.98
225.0	3.38	3.32	3.21	3.15	3.04	2.93	2.81	2.81	2.70
270.0	3.49	3.43	3.32	3.21	3.26	3.26	2.93	2.81	2.76
315.0	3.83	4.16	4.11	3.66	3.66	3.77	3.88	3.21	3.09
360.0	3.60	3.43	3.38	3.32	3.38	3.38	3.43	3.21	3.15

Intensity data(cd)

C/γ(°)	90.0
0.0	3.04
45.0	2.81
90.0	2.76
135.0	3.49
180.0	3.09
225.0	2.70
270.0	2.70
315.0	2.93
360.0	3.04