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Client:

LumCAT: IRIS F TRIPOD 80 & IRIS F TOTEM 80

Luminaire: LED

Report No:

Ballast type:

Test No:

Voltage(V): 22.280

LampCAT:

Current(A): 1.500

Lamp flux(lm): 3109.8

Power (W): 33.430

Number of Lamps: 1

PF: 1.000

Length(mm): 780

Width(mm): 35

Phm Type: C

Height(mm): 780

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#### Photometric Results

Lumens(lm): 3109.83, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 93.03

Central intensity(cd): 15.808, Maximum intensity(cd): 537.304

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

Beam Angle(50%Imax): [C0/180]Total=N.A.

[C90/270]Total=290.7

Field angle(10%Imax): [C0/180]Total=N.A.

[C90/270]Total=345.3

Maximum s/h(1/2): C0\_180=1.19 C90\_270=9.07

Maximum s/h(1/4): C0\_180=1.45 C90\_270=7.94

Up flux rate of lamp(%): 49.47%

Down flux rate of lamp(%): 50.53%

Up flux rate of LUM(%): 49.47%

Down flux rate of LUM(%): 50.53%

CIE Type : General diffuse lighting

Output flux ratio in  $\pi$  solid angle : 19.346%

## IRIS F TRIPOD 80&amp;IRIS F TOTEM 80

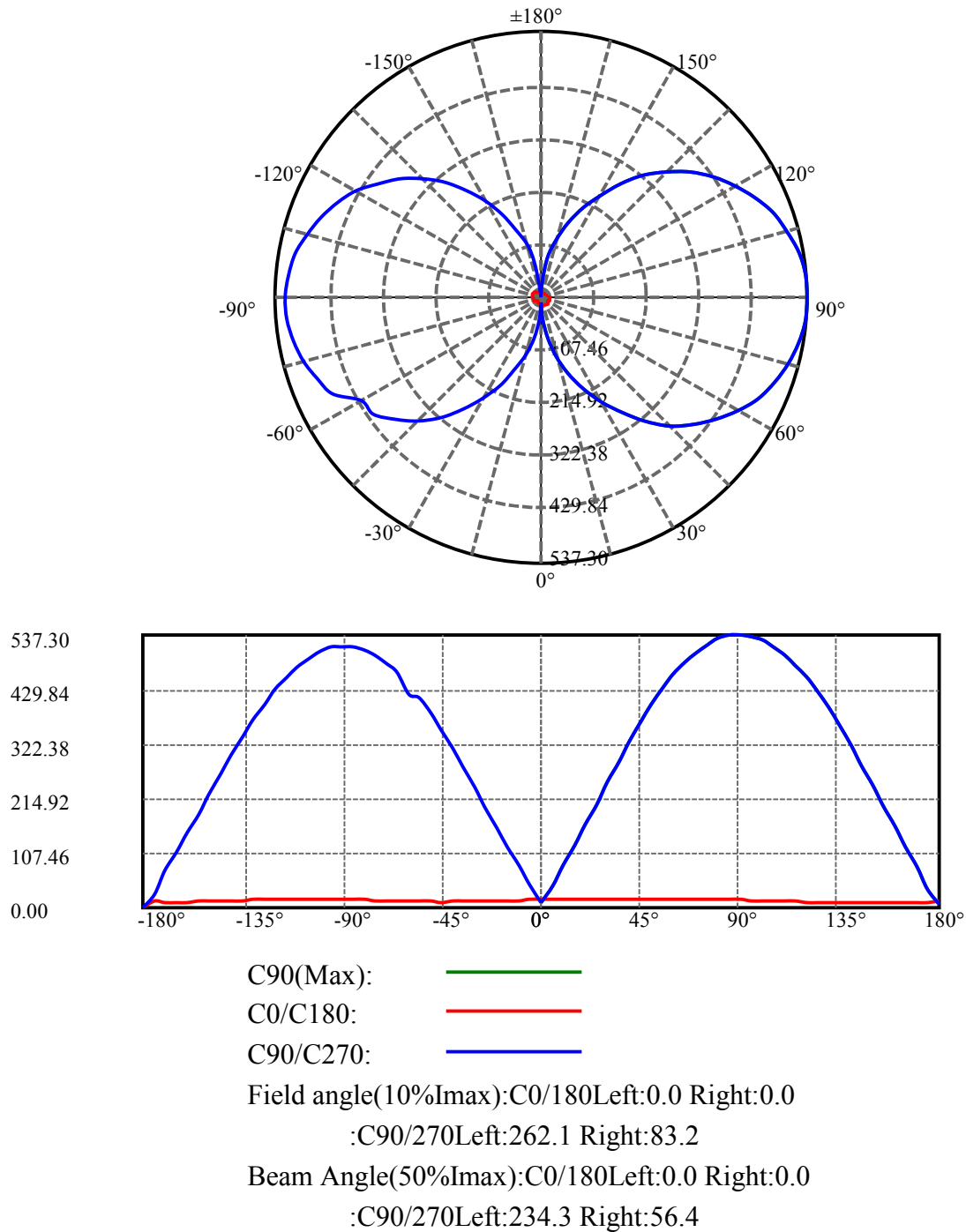
Zonal flux distribution table

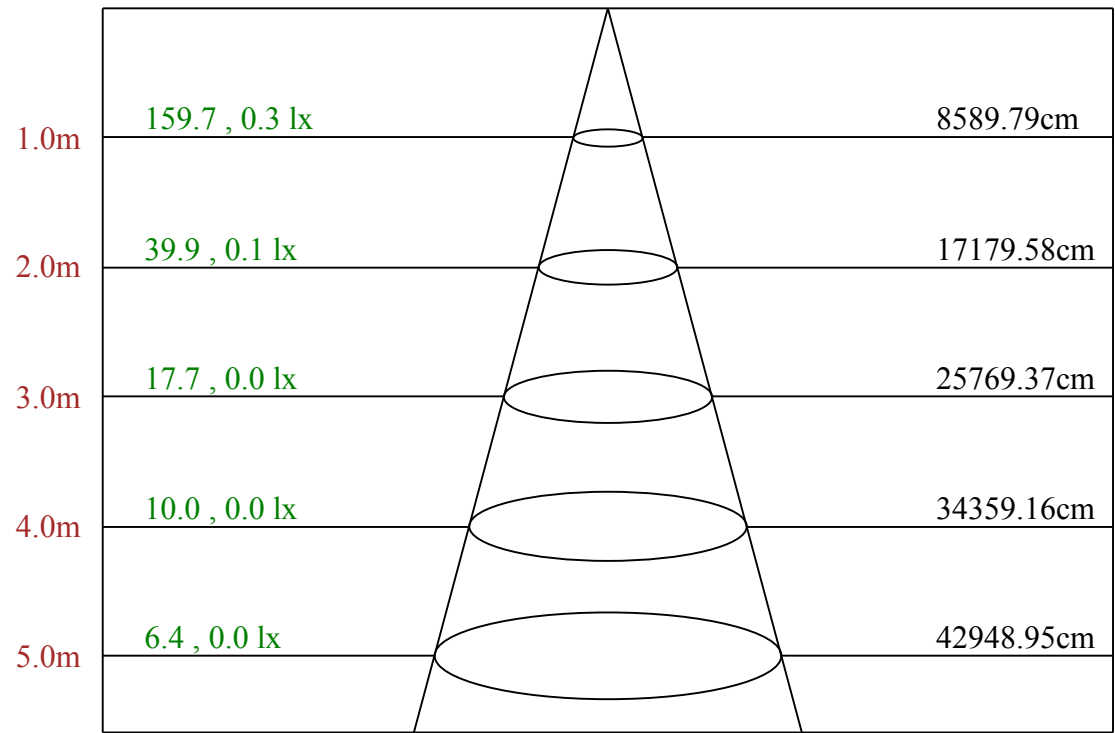
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$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	13.600	0.000	0	0.00%	0.00%
5.0	29.981	0.521	0.521	0.02%	0.02%
10.0	56.160	3.082	3.603	0.10%	0.12%
15.0	79.760	8.063	11.665	0.26%	0.38%
20.0	103.244	15.082	26.747	0.48%	0.86%
25.0	127.960	24.249	50.996	0.78%	1.64%
30.0	152.069	35.438	86.434	1.14%	2.78%
35.0	175.726	48.270	134.704	1.55%	4.33%
40.0	197.870	62.332	197.036	2.00%	6.34%
45.0	221.294	77.612	274.648	2.50%	8.83%
50.0	242.073	93.630	368.278	3.01%	11.84%
55.0	260.460	109.267	477.545	3.51%	15.36%
60.0	276.305	124.072	601.617	3.99%	19.35%
65.0	291.287	137.983	739.599	4.44%	23.78%
70.0	303.004	150.478	890.078	4.84%	28.62%
75.0	312.473	160.876	1050.953	5.17%	33.79%
80.0	318.820	168.916	1219.87	5.43%	39.23%
85.0	323.057	174.413	1394.283	5.61%	44.83%
90.0	324.108	177.199	1571.482	5.70%	50.53%
95.0	322.383	177.014	1748.496	5.69%	56.22%
100.0	317.544	173.883	1922.38	5.59%	61.82%
105.0	308.633	167.548	2089.927	5.39%	67.20%
110.0	297.915	158.542	2248.469	5.10%	72.30%
115.0	285.190	147.646	2396.115	4.75%	77.05%
120.0	271.051	135.223	2531.338	4.35%	81.40%
125.0	253.502	121.249	2652.587	3.90%	85.30%
130.0	234.633	106.137	2758.724	3.41%	88.71%
135.0	213.798	90.612	2849.336	2.91%	91.62%
140.0	192.155	75.166	2924.501	2.42%	94.04%
145.0	168.241	60.129	2984.631	1.93%	95.97%
150.0	144.296	46.023	3030.654	1.48%	97.45%
155.0	120.157	33.467	3064.121	1.08%	98.53%
160.0	95.512	22.620	3086.74	0.73%	99.26%
165.0	70.022	13.642	3100.383	0.44%	99.70%
170.0	45.528	6.854	3107.237	0.22%	99.92%
175.0	19.173	2.315	3109.551	0.07%	99.99%
180.0	4.427	0.282	3109.834	0.01%	100.00%

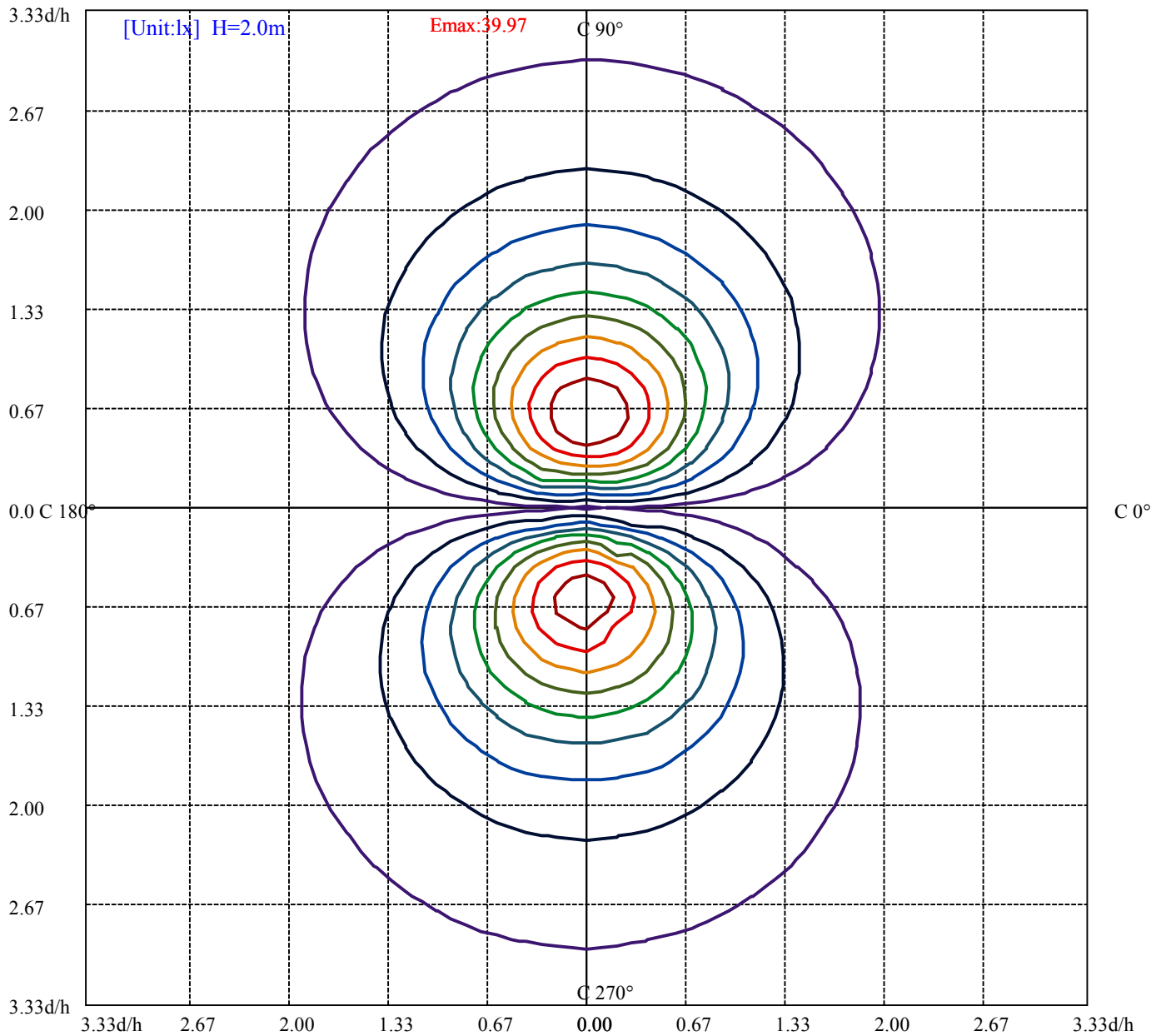
ZONAL LUMEN SUMMARY			
Zone	Lumens	%Lamp	%Fixt
0-30	86.43	2.78%	2.78%
0-40	197.04	6.34%	6.34%
0-60	601.62	19.35%	19.35%
0-90	1571.48	50.53%	50.53%
0-120	2531.34	81.40%	81.40%
0-180	3109.83	100.00%	100.00%
60-90	969.87	31.19%	31.19%
90-120	959.86	30.87%	30.87%
90-130	1187.24	38.18%	38.18%
90-150	1459.17	46.92%	46.92%
90-180	1538.07	49.46%	49.46%
0-118.39	2487.87	80.00%	80.00%

ZONAL LUMEN SUMMARY	
0-10	3.60
10-20	23.14
20-30	59.69
30-40	110.60
40-50	171.24
50-60	233.34
60-70	288.46
70-80	329.79
80-90	351.61
90-100	350.90
100-110	326.09
110-120	282.87
120-130	227.39
130-140	165.78
140-150	106.15
150-160	56.09
160-170	20.50
170-180	2.31

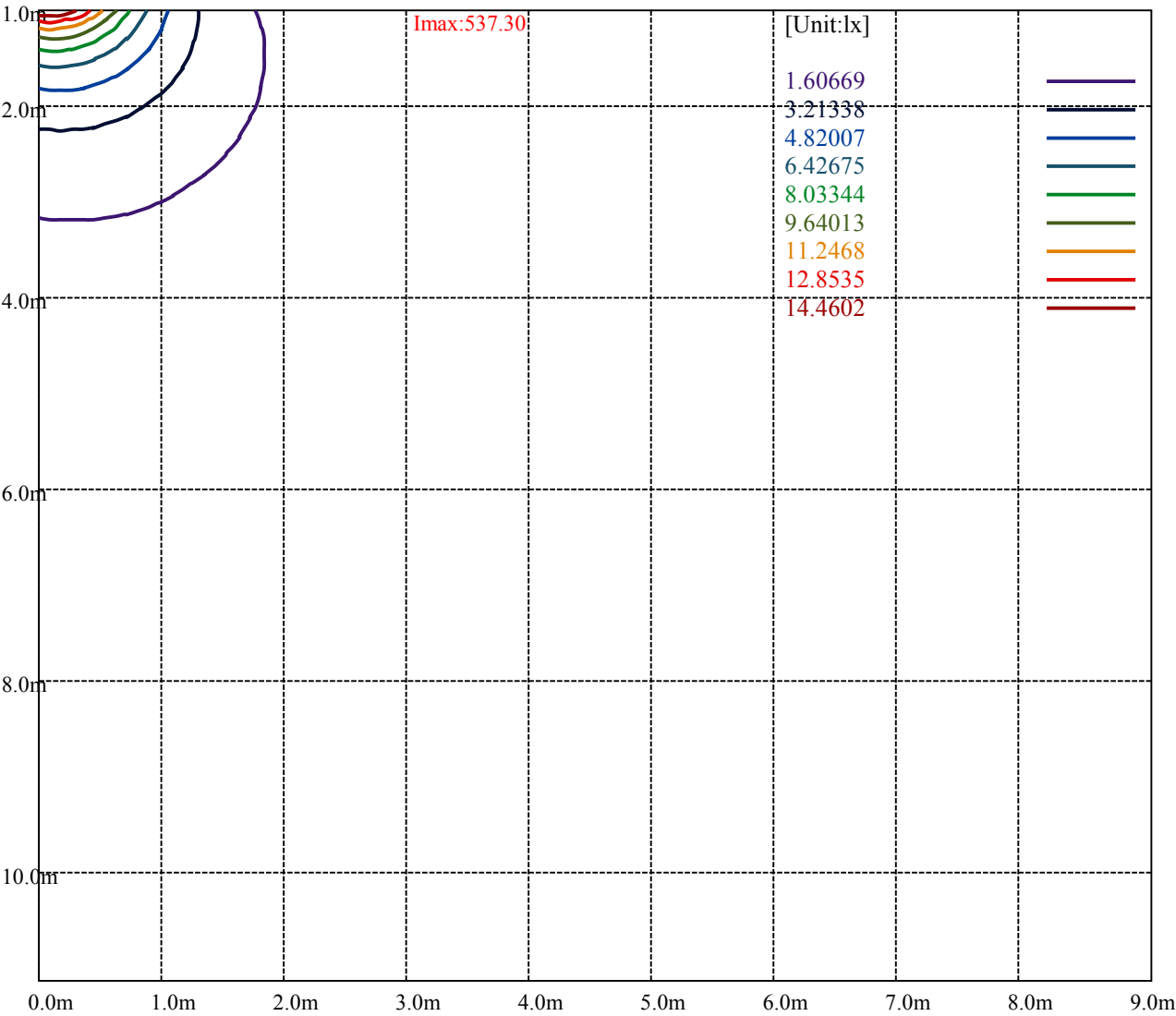




Max , Ave      Beam angle of C90 plane 177.33



(10%Emax) 3.9967	—
(20%Emax) 7.993425	—
(30%Emax) 11.99012	—
(40%Emax) 15.98682	—
(50%Emax) 19.98352	—
(60%Emax) 23.98025	—
(70%Emax) 27.977	—
(80%Emax) 31.97375	—
(90%Emax) 35.97025	—



# IRIS F TRIPOD 80&IRIS F TOTEM 80

## Luminance Limiting Curve(no luminous side)

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Luminance Table

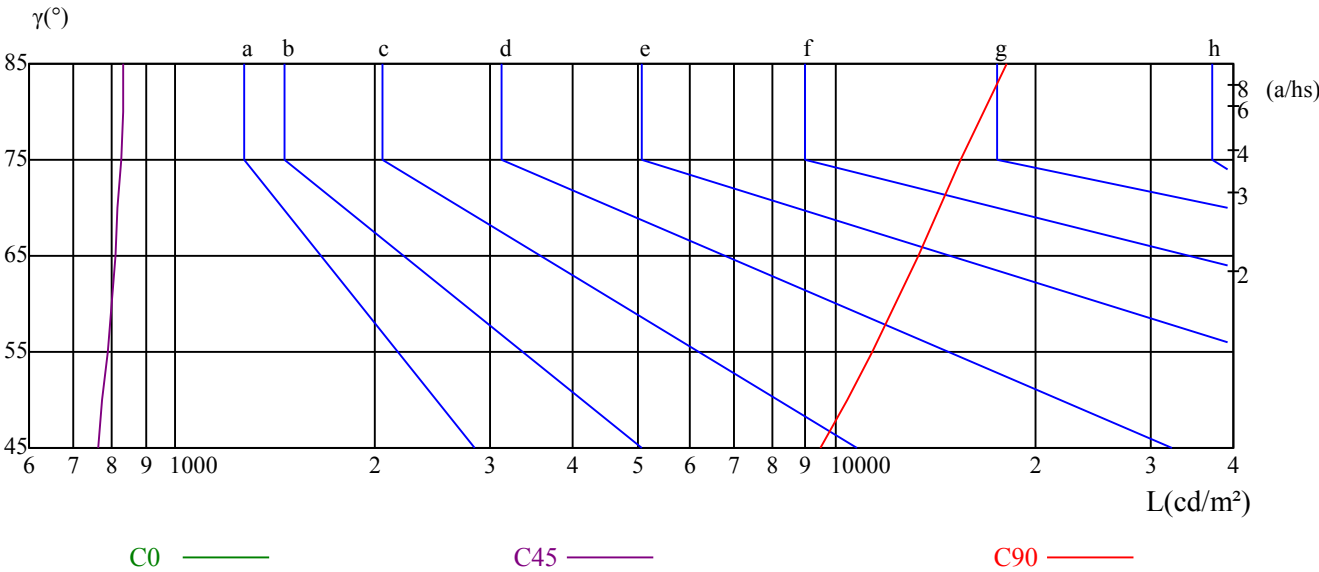
$\gamma$	45	50	55	60	65	70	75	80	85
C0	39	36	34	32	30	29	28	27	26
C45	762	774	790	800	809	818	825	831	835
C90	9478	10430	11370	12334	13327	14352	15498	16731	18116

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1316	41016	27713	2206	71836	48687	6587	220591	149763

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	$\leq 300$				
1.5	B		2000	1000	500	$\leq 300$			
1.85	C			2000	1000	500	$\leq 300$		
2.2	D				2000	1000	500	$\leq 300$	
2.55	E					2000	1000	500	$\leq 300$
		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	COEFFCIENTS OF UTILIZATION RHOFC=20 CU															
0	1.07	1.07	1.07	0.99	0.99	0.99	0.84	0.84	0.84	0.70	0.70	0.70	0.57	0.57	0.57	0.51
1	0.85	0.79	0.74	0.78	0.73	0.68	0.65	0.60	0.57	0.52	0.49	0.46	0.41	0.38	0.36	0.31
2	0.71	0.63	0.56	0.65	0.57	0.51	0.53	0.47	0.42	0.43	0.38	0.34	0.33	0.29	0.26	0.21
3	0.61	0.51	0.44	0.55	0.47	0.40	0.45	0.39	0.33	0.36	0.31	0.26	0.27	0.23	0.20	0.15
4	0.53	0.43	0.35	0.48	0.39	0.32	0.39	0.32	0.27	0.31	0.25	0.21	0.23	0.19	0.16	0.12
5	0.46	0.36	0.29	0.42	0.33	0.27	0.34	0.27	0.22	0.27	0.22	0.17	0.20	0.16	0.13	0.09
6	0.41	0.31	0.24	0.37	0.29	0.22	0.30	0.23	0.18	0.24	0.19	0.14	0.18	0.14	0.10	0.07
7	0.36	0.27	0.21	0.33	0.25	0.19	0.27	0.20	0.16	0.21	0.16	0.12	0.16	0.12	0.09	0.06
8	0.33	0.24	0.18	0.30	0.22	0.16	0.24	0.18	0.13	0.19	0.14	0.10	0.15	0.11	0.07	0.05
9	0.30	0.21	0.16	0.27	0.19	0.14	0.22	0.16	0.12	0.18	0.13	0.09	0.13	0.09	0.06	0.04
10	0.27	0.19	0.14	0.25	0.17	0.12	0.20	0.14	0.10	0.16	0.11	0.08	0.12	0.08	0.06	0.04

## IRIS F TRIPOD 80&amp;IRIS F TOTEM 80

Intensity data(cd)

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C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	15.81	16.26	16.62	16.98	17.25	17.25	17.43	17.51	17.43
15.0	14.28	19.58	37.28	50.03	60.18	69.88	79.04	87.57	95.75
30.0	12.93	28.02	54.43	74.28	93.23	112.01	130.42	147.30	164.55
45.0	12.31	36.56	67.99	93.68	122.51	148.65	176.32	203.80	230.93
60.0	11.77	42.48	76.62	109.76	143.89	178.92	214.40	248.44	283.65
75.0	11.59	44.28	83.17	120.45	157.01	196.80	237.48	278.44	317.96
90.0	11.59	44.10	83.98	122.60	162.13	203.53	245.84	285.90	327.03
105.0	11.68	43.83	82.37	118.92	154.76	195.81	233.98	273.77	312.93
120.0	11.77	41.41	74.82	106.89	139.85	173.17	207.13	239.64	273.23
135.0	22.10	34.76	65.30	90.99	115.33	142.28	166.71	192.04	217.10
150.0	13.11	24.25	51.65	69.97	99.97	103.83	120.09	135.36	151.35
165.0	14.28	18.59	30.81	44.28	53.80	62.16	69.79	76.80	83.80
180.0	15.81	15.27	14.73	14.19	13.74	13.11	12.48	12.22	11.77
195.0	14.28	12.13	15.18	21.11	40.33	52.28	62.16	72.04	80.66
210.0	12.93	15.81	39.61	61.89	79.49	97.90	116.05	133.29	150.00
225.0	12.31	23.44	60.00	86.32	112.63	137.60	164.73	189.25	214.58
240.0	11.77	39.52	72.48	104.46	137.07	169.94	203.26	234.97	269.37
255.0	11.59	44.55	81.47	117.22	153.77	191.14	227.42	268.11	303.68
270.0	11.59	45.27	84.97	120.00	157.90	196.62	236.23	276.38	315.18
285.0	11.68	43.83	80.39	115.78	151.89	186.74	226.35	262.36	268.83
300.0	11.77	37.81	70.24	101.23	109.85	163.65	195.90	228.14	259.85
315.0	22.10	20.57	55.87	80.75	105.27	129.97	154.22	178.29	200.84
330.0	13.11	14.91	34.31	55.24	71.50	88.29	103.38	119.01	134.19
345.0	14.28	12.31	13.56	17.25	24.52	39.52	48.86	56.77	64.22
360.0	15.81	16.26	16.62	16.98	17.25	17.25	17.43	17.51	17.43

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	17.43	17.34	17.25	17.16	16.98	16.71	16.44	16.08	15.63
15.0	103.20	110.12	116.14	121.62	126.29	130.06	132.84	134.37	134.82
30.0	181.08	196.62	210.81	223.38	233.71	242.96	249.97	254.82	257.33
45.0	256.80	280.06	303.41	322.18	339.07	353.26	364.13	371.86	375.72
60.0	317.06	347.87	375.63	399.70	420.27	435.45	449.73	458.98	464.91
75.0	355.60	389.73	418.47	445.24	468.41	487.36	502.18	512.87	519.43
90.0	365.93	401.14	432.30	459.97	483.50	502.18	518.17	529.13	535.78
105.0	349.94	383.89	412.27	438.86	461.59	479.46	495.09	505.69	511.71
120.0	305.39	335.39	362.78	386.50	405.63	423.05	435.27	444.61	450.09
135.0	241.08	263.71	283.47	302.06	318.41	331.80	342.12	349.85	353.98
150.0	165.18	178.74	191.23	202.19	211.80	219.34	225.72	230.03	232.54
165.0	89.28	94.85	99.34	103.92	107.16	109.85	111.92	112.90	113.17
180.0	11.59	11.86	12.13	12.75	13.38	14.01	14.73	15.27	15.72
195.0	89.19	97.19	104.46	110.75	116.32	121.53	125.48	128.89	131.05
210.0	165.09	181.08	194.37	207.48	218.98	228.86	236.77	243.14	247.01
225.0	239.46	262.81	284.46	304.31	321.47	335.75	346.26	354.79	360.00
240.0	299.37	330.36	355.78	380.75	399.97	416.59	430.06	439.85	445.33
255.0	339.16	371.68	400.69	426.29	447.93	467.42	481.62	484.58	497.87
270.0	351.74	383.17	413.35	420.54	462.93	480.81	496.97	507.39	513.95
285.0	333.14	367.18	394.49	419.82	441.38	459.43	473.89	483.95	489.88
300.0	290.30	318.95	344.91	367.90	387.48	402.57	415.96	423.95	429.25
315.0	225.00	246.74	265.78	283.92	300.00	313.29	323.53	330.99	335.66
330.0	148.38	161.95	174.43	185.57	195.00	203.08	209.91	214.85	217.99
345.0	70.69	77.34	83.08	88.47	93.23	97.28	100.60	102.84	104.55
360.0	17.43	17.34	17.25	17.16	16.98	16.71	16.44	16.08	15.63

IRIS F TRIPOD 80&IRIS F TOTEM 80

Intensity data(cd)									Appendix Page: 11 Total:12
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	15.09	14.55	14.10	13.20	12.48	11.95	11.23	10.60	10.15
15.0	134.46	132.93	130.06	125.21	120.00	113.44	108.05	101.68	94.40
30.0	257.51	255.36	250.87	241.89	232.81	221.86	209.37	195.63	181.53
45.0	376.97	374.73	368.98	358.20	344.46	329.37	310.87	290.03	266.95
60.0	466.62	464.46	458.62	446.05	431.50	413.08	391.08	365.57	338.35
75.0	521.50	519.16	512.24	499.67	482.69	462.21	439.49	412.36	381.74
90.0	537.30	534.88	527.42	515.30	497.87	477.03	452.42	426.02	393.32
105.0	513.68	510.90	503.98	491.41	474.43	454.13	432.03	405.63	375.18
120.0	451.26	448.74	442.81	430.96	416.68	398.80	377.42	352.72	326.59
135.0	354.79	352.90	347.42	337.99	324.52	309.52	292.63	273.14	251.68
150.0	232.72	230.84	227.07	219.52	211.08	201.29	190.24	177.84	165.18
165.0	112.63	111.38	109.04	105.00	100.60	95.03	90.00	84.88	78.86
180.0	16.26	16.71	16.80	16.89	16.80	16.62	16.26	15.72	15.27
195.0	132.22	132.39	130.51	126.74	123.50	120.09	115.42	109.94	103.74
210.0	247.99	247.18	243.05	236.68	228.95	219.61	209.19	196.17	182.69
225.0	361.71	359.73	353.98	344.73	333.41	319.04	315.09	282.21	260.12
240.0	447.03	444.70	443.62	425.84	412.27	395.03	374.46	349.94	322.45
255.0	499.85	497.06	488.89	476.23	459.97	440.12	417.84	391.71	361.71
270.0	515.48	512.33	503.62	490.69	472.90	453.50	429.34	401.68	370.87
285.0	491.32	488.17	479.82	467.15	449.73	430.87	408.95	382.90	353.53
300.0	430.69	428.08	420.27	408.77	395.48	378.41	357.75	334.49	309.61
315.0	336.92	335.48	329.01	319.49	308.44	295.24	280.06	261.83	241.80
330.0	219.43	219.07	215.21	208.47	201.47	194.46	185.21	174.07	162.39
345.0	105.18	105.45	103.65	101.14	97.90	93.86	90.81	87.31	83.08
360.0	15.09	14.55	14.10	13.20	12.48	11.95	11.23	10.60	10.15
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	9.70	9.43	9.25	8.98	8.71	8.44	8.35	8.89	10.24
15.0	86.32	77.16	67.90	57.75	46.17	32.16	14.28	9.43	8.08
30.0	165.18	148.47	131.23	113.08	95.12	72.48	48.32	25.69	10.33
45.0	242.24	216.38	190.78	163.83	136.35	109.04	77.60	44.46	13.92
60.0	307.27	274.13	239.73	204.25	171.20	136.98	102.84	63.95	21.56
75.0	347.15	309.79	272.42	232.10	191.86	152.87	116.77	77.96	31.35
90.0	359.91	321.74	280.51	238.92	199.49	159.07	119.73	81.74	37.63
105.0	340.96	306.11	265.60	227.96	189.07	150.72	113.26	78.86	35.75
120.0	296.59	264.52	231.11	197.78	166.08	132.93	100.15	68.98	26.59
135.0	228.59	205.51	179.64	155.48	130.15	104.28	78.95	50.75	17.69
150.0	151.08	135.99	120.18	103.83	86.41	69.25	49.04	26.68	11.14
165.0	71.77	64.49	55.96	46.98	36.47	19.85	11.59	8.71	8.26
180.0	14.64	14.10	13.56	12.66	11.86	10.96	10.51	10.87	11.95
195.0	95.84	87.57	78.77	69.97	59.64	56.50	35.39	23.26	14.28
210.0	167.69	164.19	134.73	117.48	100.15	82.19	64.31	40.69	17.87
225.0	236.68	211.98	187.81	160.51	134.28	109.31	83.71	57.22	23.53
240.0	293.89	262.01	229.31	195.99	162.48	131.41	98.80	66.83	26.41
255.0	328.38	294.34	254.82	218.53	180.36	143.35	106.62	74.10	27.48
270.0	338.71	301.80	263.17	223.47	184.04	147.48	110.03	74.19	25.69
285.0	320.84	285.90	251.23	212.07	176.77	140.39	104.46	65.66	17.25
300.0	279.61	250.78	219.52	187.90	156.20	125.84	86.95	50.03	18.23
315.0	220.42	197.78	174.52	150.72	127.45	95.93	66.20	39.34	17.43
330.0	150.00	136.17	121.62	106.17	87.22	65.12	47.78	29.19	14.64
345.0	77.69	71.41	64.40	56.68	46.26	35.75	24.88	15.18	12.84
360.0	9.70	9.43	9.25	8.98	8.71	8.44	8.35	8.89	10.24

## IRIS F TRIPOD 80&IRIS F TOTEM 80

Intensity data(cd)

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C/ $\gamma(^{\circ})$	180.0
0.0	12.31
15.0	10.78
30.0	9.43
45.0	8.62
60.0	7.63
75.0	6.29
90.0	5.48
105.0	7.99
120.0	8.89
135.0	9.07
150.0	9.43
165.0	10.33
180.0	0.00
195.0	0.00
210.0	0.00
225.0	0.00
240.0	0.00
255.0	0.00
270.0	0.00
285.0	0.00
300.0	0.00
315.0	0.00
330.0	0.00
345.0	0.00
360.0	12.31