



spectra no frame

linha de luminárias embutidas circulares, ideal para forros. disponível com moldura discreta (mini frame) ou sem moldura (no frame), garantindo integração limpa e contemporânea à arquitetura. com opções de fecho fixo ou orientável, a linha oferece múltiplos tamanhos e potências com estética unificada, permitindo uma identidade visual coesa em todo o projeto. o conjunto óptico e a moldura em alumínio pintado proporcionam excelente controle de ofuscamento e conforto visual. a fixação é prática e segura: por molas em aço inox (mini frame) ou aro de fixação (no frame), garantindo aderência perfeita ao forro e acabamento refinado. ideal para projetos que valorizam estética e funcionalidade na iluminação.

informações técnicas

fonte de luz
LED integrado

IRC
alto índice de reprodução de cor (irc>90 | r9>60)

vida útil
50.000h

potência (W), fecho, temperatura de cor (K),
fluxo nominal (lm nominal), fluxo útil (lm útil)

W		K	lm nominal	lm útil
2	concentrado	2700		
2	médio	2700		
2	aberto	2700		
2	concentrado	3000	223	171
2	médio	3000	223	191
2	aberto	3000	223	167
2	concentrado	4000		
2	médio	4000		
2	aberto	4000		
4	concentrado	2700		
4	médio	2700		
4	aberto	2700		
4	concentrado	3000	330	273
4	médio	3000	330	277
4	aberto	3000	330	255
4	concentrado	4000		
4	médio	4000		
4	aberto	4000		
6	concentrado	2700		
6	médio	2700		
6	aberto	2700		
6	concentrado	3000	654	483
6	médio	3000	654	552
6	aberto	3000	654	493
6	concentrado	4000		
6	médio	4000		
6	aberto	4000		

12	concentrado	2700		
12	médio	2700		
12	aberto	2700		
12	concentrado	3000	1185	882
12	médio	3000	1185	1011
12	aberto	3000	1185	907
12	concentrado	4000		
12	médio	4000		
12	aberto	4000		
18	concentrado	2700		
18	médio	2700		
18	aberto	2700		
18	concentrado	3000	1585	1116
18	médio	3000	1585	1260
18	aberto	3000	1585	1162
18	concentrado	4000		
18	médio	4000		
18	aberto	4000		

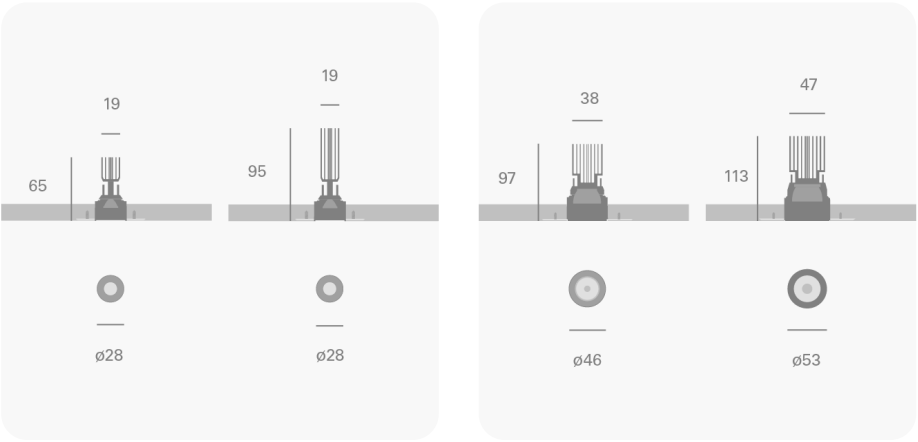
equipamentos
LED driver 180mA (ponto remoto)
LED driver 350mA (ponto remoto)
LED driver 500mA (ponto remoto)
LED driver 700mA (ponto remoto)

controle
on/off
dim fphase

instalação
forro de gesso

IP
20

dimensões



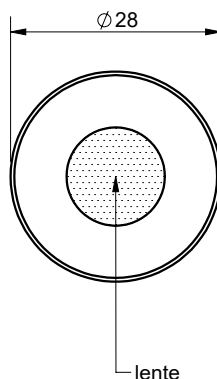
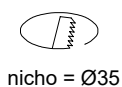
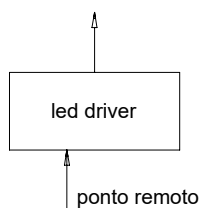
acabamentos e cores

- cores
- branco txt
 - phosphorus
 - cinza areia
 - preto txt



vista inferior

dimensões em milímetros



spectra xsm no frame 2w

folha
1/1

escala
1:1

data
22/07/2025

desenhista
joão v.

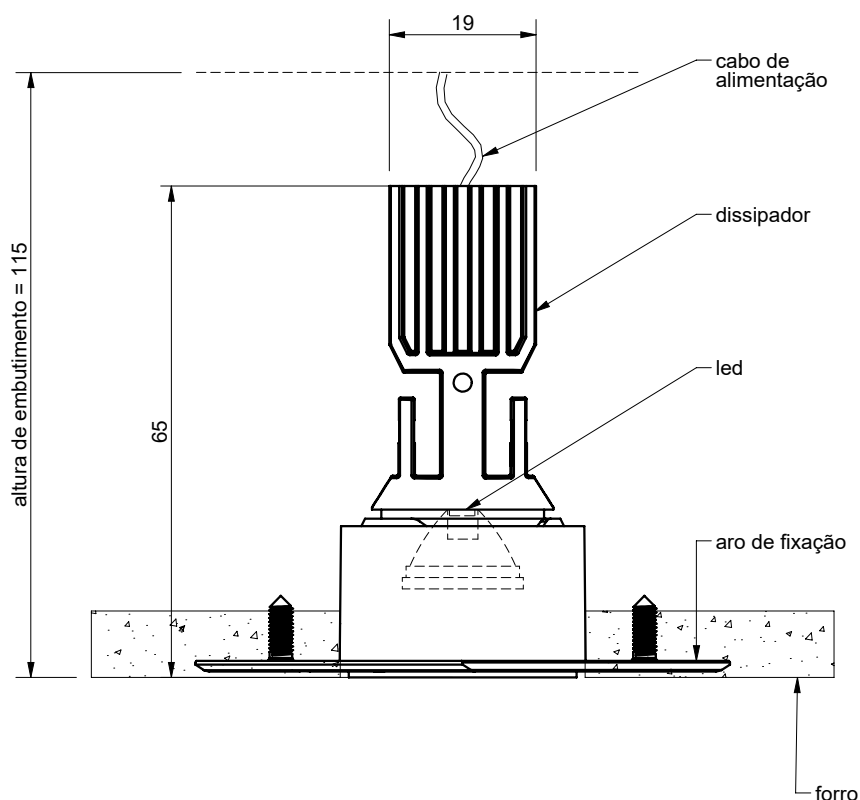
aprovação
ronaldo

revisões

22/07/2025

vista lateral

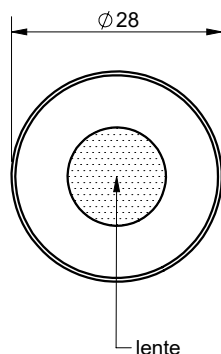
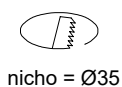
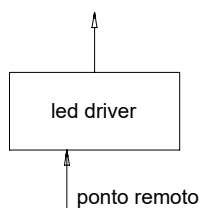
dimensões em milímetros



para maiores informações,
consulte a área técnica
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vista inferior

dimensões em milímetros



spectra xsm no frame 4w

folha
1/1

escala
1:1

data
22/07/2025

desenhista
joão v.

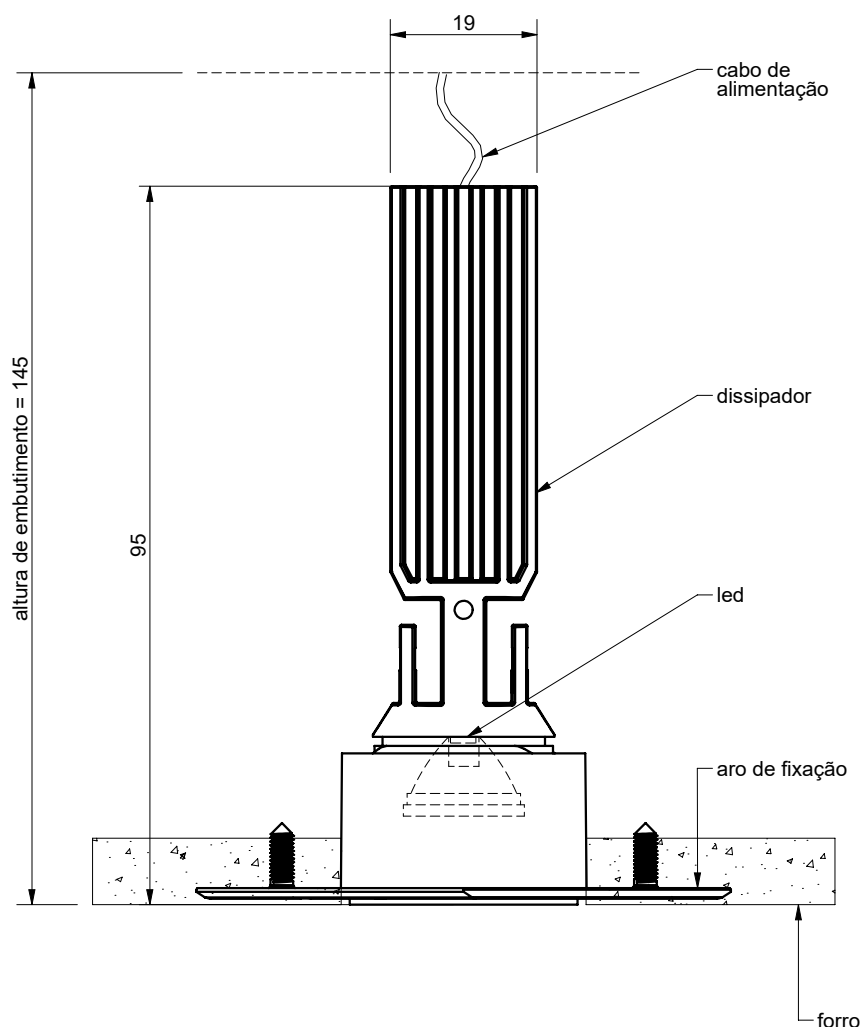
aprovação
ronaldo

revisões

22/07/2025

vista lateral

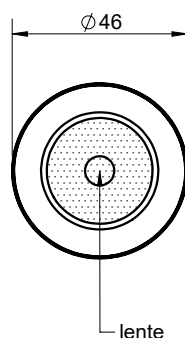
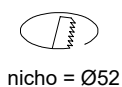
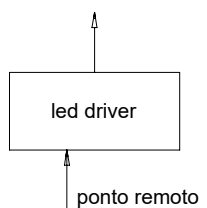
dimensões em milímetros



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vista inferior

dimensões em milímetros



spectra sm no frame 6w/12w

folha
1/1

escala
1:2

data
22/07/2025

desenhista
joão v.

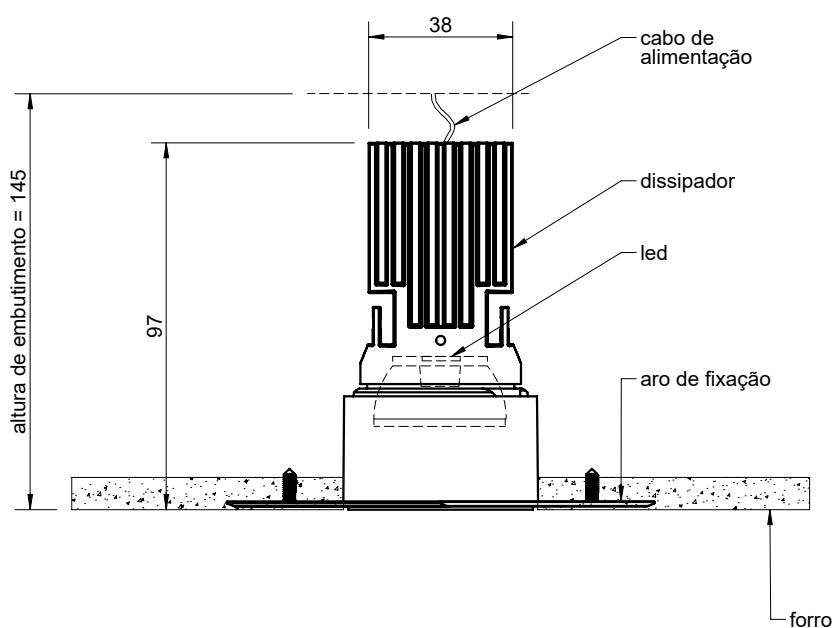
aprovação
ronaldo

revisões

22/07/2025

vista lateral

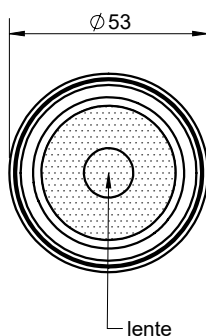
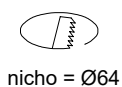
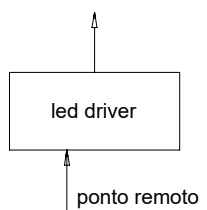
dimensões em milímetros



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vista inferior

dimensões em milímetros



spectra md no frame 18w

folha
1/1

escala
1:2

data
22/07/2025

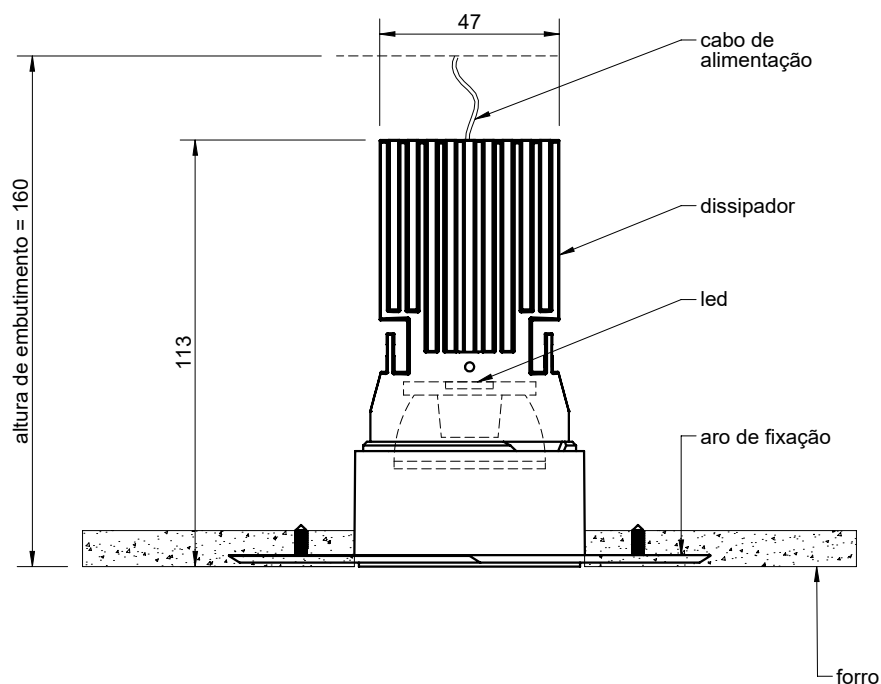
desenhista
joão v.

aprovação
ronaldo

revisões
22/07/2025

vista lateral

dimensões em milímetros



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LumCAT:

Luminaire: spectra no frame fc

LampCAT: modulo led 2W 30K irc 90

Ballast type: led driver 700mA

Report No:

Voltage(V): 221.3600

Test No:

Current(A): 0.0190

Number of Lamps: 1

Power (W): 3.3090

Lamp flux(lm): 223.0

PF: 0.7760

Length(mm): 22

Width(mm): 22

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 171.23, Efficiency(%): 76.78% , Luminous Efficacy(lm/W): 51.75

Central intensity(cd): 1393.283, Maximum intensity(cd): 1393.283

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

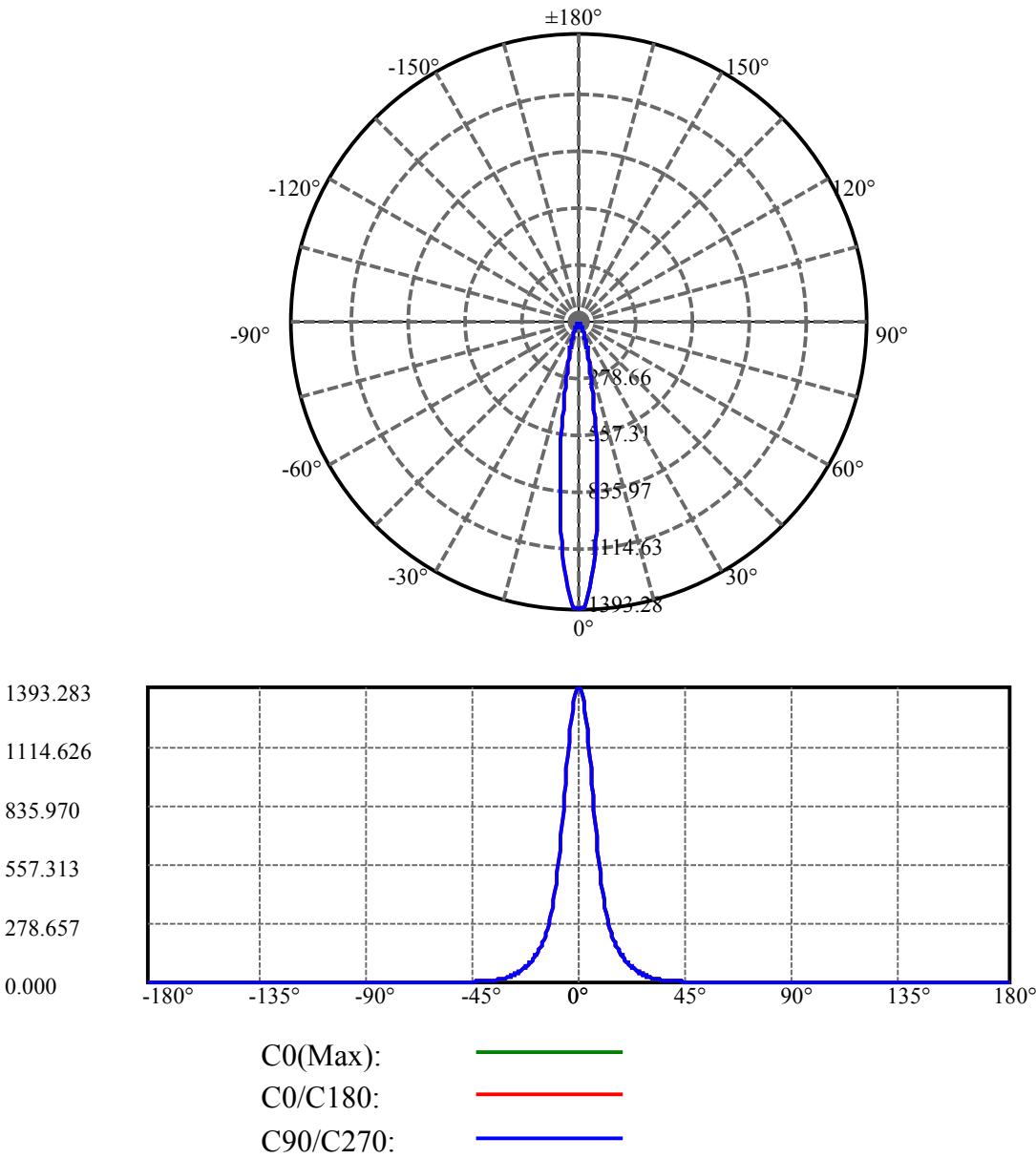
Beam angle of C0 plane : 15.32

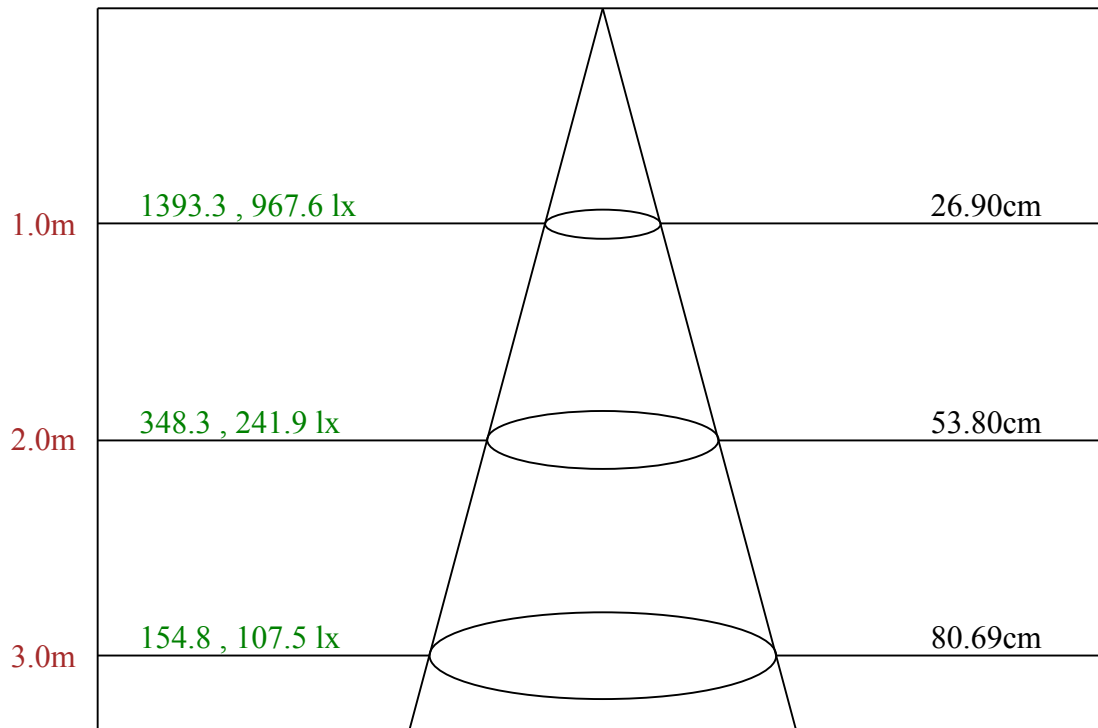
Average BeamAngle(IEC 61341): 15.32

Equipment: equipamento lumini
Temperature(°C): 26.5

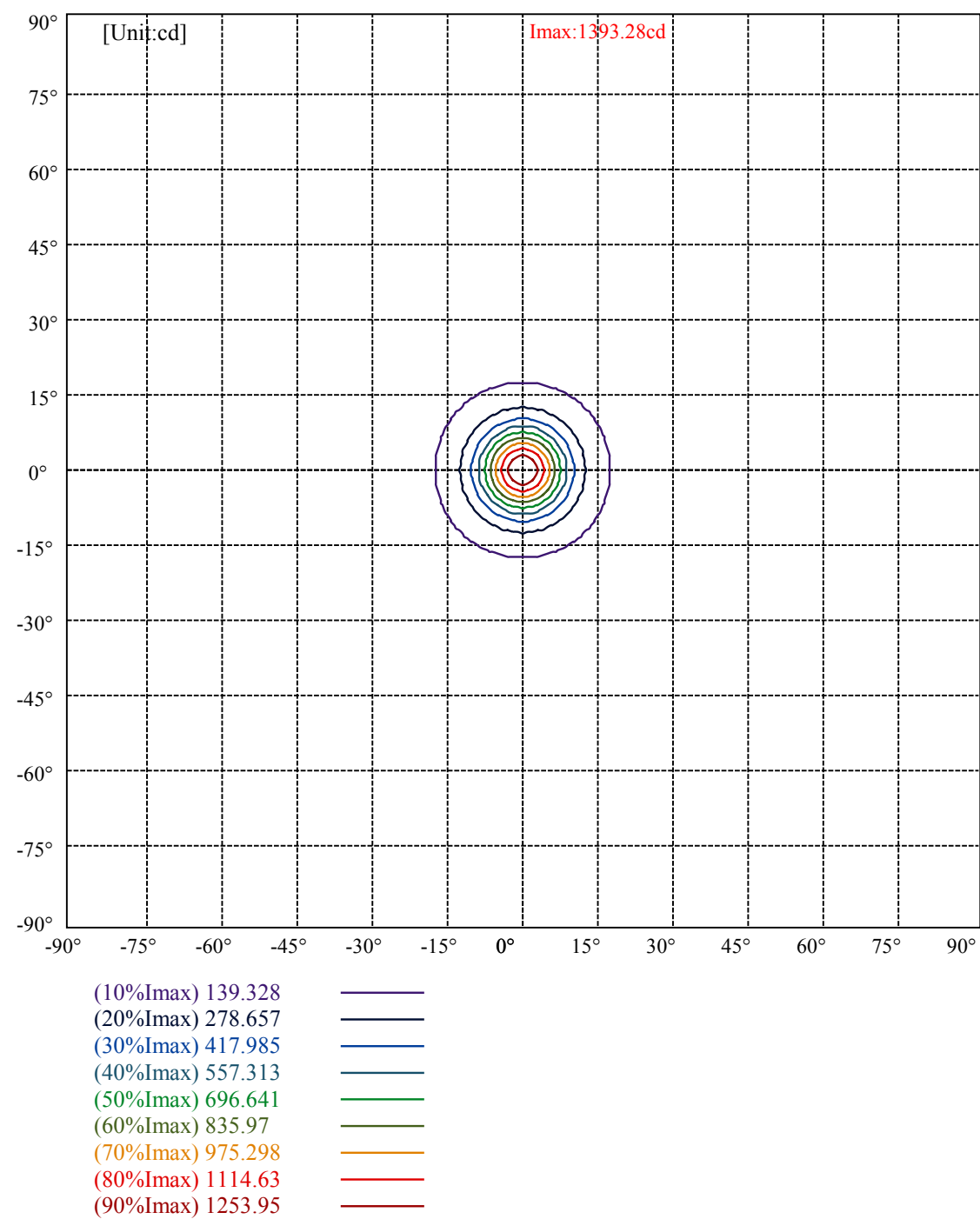
Date: 30/07/2025
Humidity(%): 55.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 15.32



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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	9721	5586	3752	2582	2793	3307	4371	6231	13262
C45	9721	5586	3752	2582	2793	3307	4371	6231	13262
C90	9721	5586	3752	2582	2793	3307	4371	6231	13262

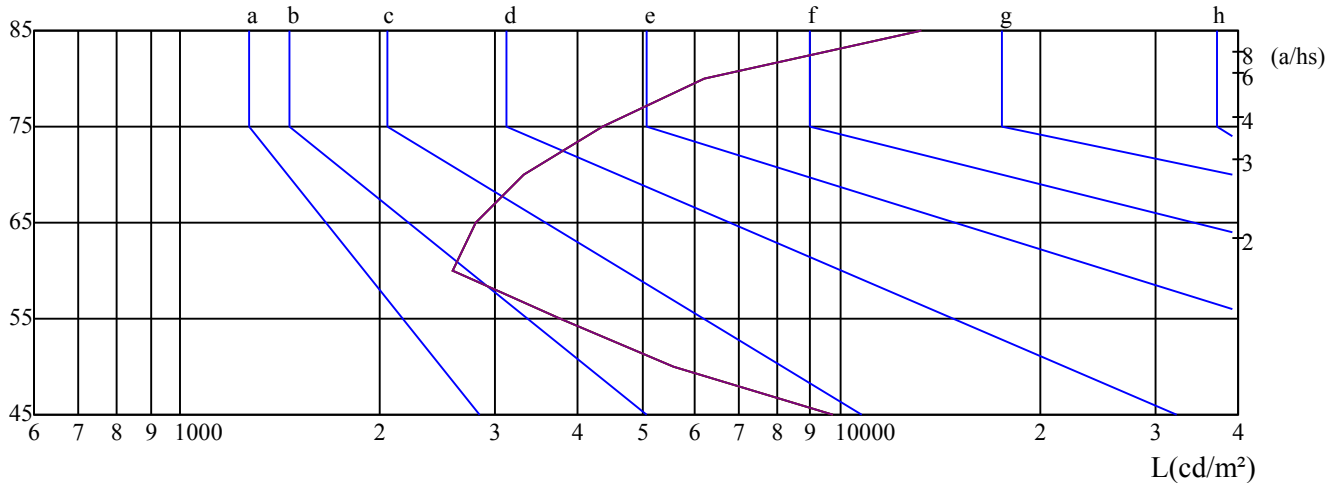
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2793	2793	2793	4371	4371	4371	13262	13262	13262

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

$\gamma(^{\circ})$



C0 ———

C45 ———

C90 ———

Equipment: equipamento lumini
Temperature($^{\circ}$ C): 26.5

Date: 30/07/2025
Humidity(%): 55.0%

Operator: 01
Distance(m): 6.90

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	10.85	11.75	11.26	12.11	12.49	12.68	13.59	13.09	13.95	14.32
	3H	11.10	11.90	11.53	12.29	12.69	12.76	13.57	13.19	13.95	14.35
	4H	11.47	12.21	11.91	12.61	13.04	12.95	13.69	13.39	14.09	14.51
	6H	12.18	12.85	12.64	13.28	13.73	13.42	14.10	13.88	14.53	14.98
	8H	12.69	13.34	13.15	13.77	14.23	13.75	14.40	14.22	14.83	15.29
	12H	13.37	13.98	13.83	14.42	14.89	14.28	14.89	14.75	15.33	15.80
4H	2H	10.72	11.46	11.16	11.86	12.28	12.46	13.21	12.91	13.61	14.03
	3H	11.15	11.77	11.61	12.21	12.68	12.65	13.27	13.12	13.71	14.19
	4H	11.80	12.34	12.27	12.80	13.30	13.05	13.59	13.53	14.06	14.56
	6H	12.79	13.27	13.30	13.76	14.27	13.78	14.25	14.29	14.75	15.25
	8H	13.53	13.97	14.05	14.47	15.00	14.31	14.75	14.84	15.25	15.78
	12H	14.47	14.87	15.00	15.37	15.94	15.11	15.52	15.64	16.01	16.58
8H	4H	12.03	12.47	12.55	12.97	13.49	13.16	13.60	13.68	14.10	14.62
	6H	13.33	13.69	13.87	14.21	14.77	14.14	14.51	14.69	15.02	15.59
	8H	14.34	14.64	14.91	15.20	15.75	14.95	15.25	15.52	15.81	16.36
	12H	15.56	15.79	16.14	16.35	16.92	16.04	16.27	16.62	16.82	17.39
12H	4H	12.11	12.51	12.64	13.01	13.58	13.20	13.61	13.73	14.10	14.67
	6H	13.57	13.87	14.14	14.43	14.98	14.33	14.63	14.90	15.19	15.74
	8H	14.67	14.90	15.25	15.45	16.03	15.22	15.45	15.80	16.01	16.58
Variation with the observer position at spacings:											
S = 1.0H		3.2/-3.1					3.2/-3.1				
S = 1.5H		4.3/-2.4					4.3/-2.4				
S = 2.0H		5.0/-2.1					5.0/-2.1				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-1.1					-1.1				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fm

LampCAT: modulo led 2W 30K irc 90

Ballast type: led driver 700mA

Report No:

Voltage(V): 221.3500

Test No:

Current(A): 0.0190

Number of Lamps: 1

Power (W): 3.3070

Lamp flux(lm): 223.0

PF: 0.7760

Length(mm): 22

Width(mm): 22

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 190.96, Efficiency(%): 85.63% , Luminous Efficacy(lm/W): 57.74

Central intensity(cd): 737.205, Maximum intensity(cd): 740.907

Angle of maximum intensity: $C=0.0$ $\gamma=4.0$

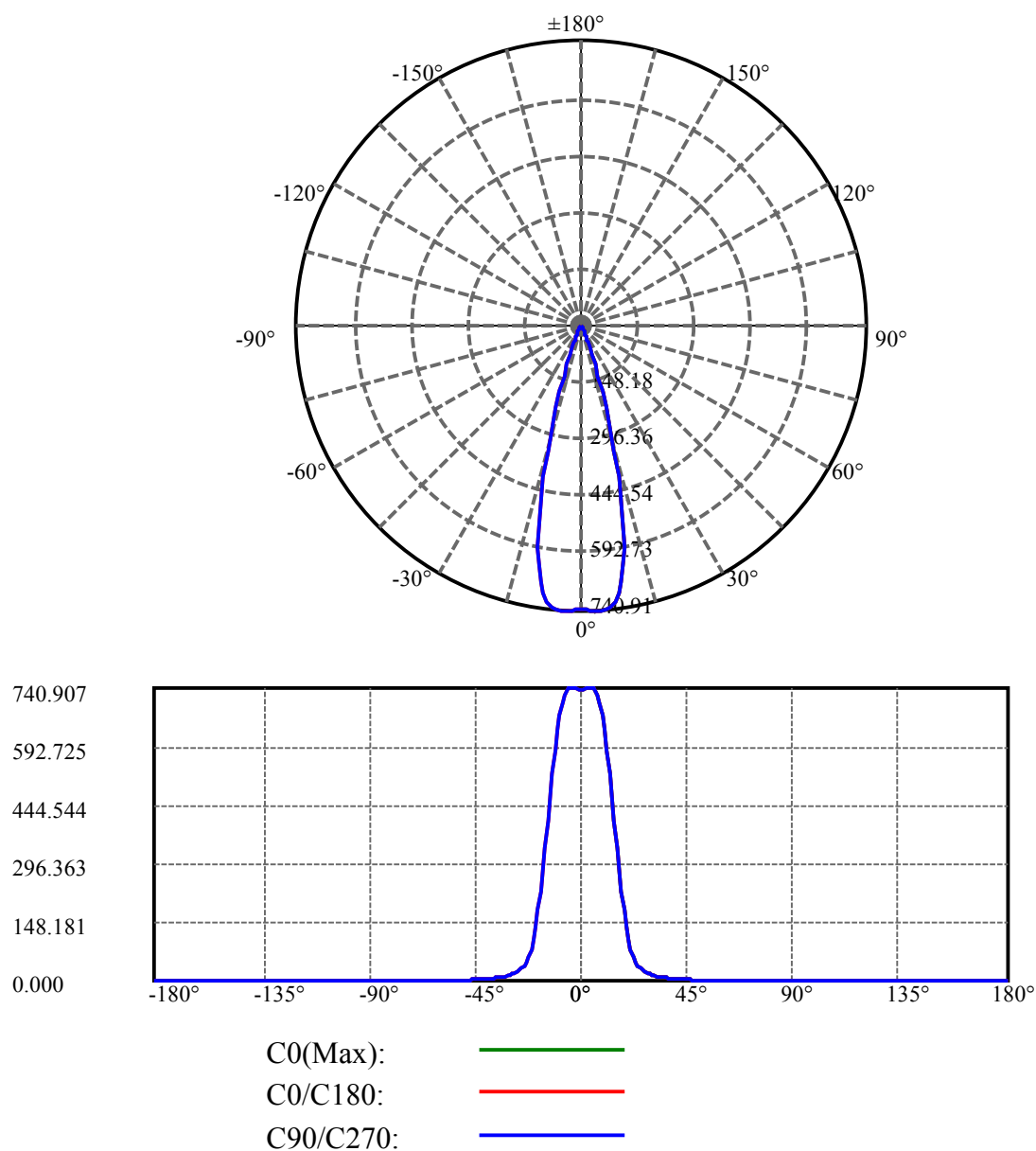
Beam angle of C0 plane : 29.00

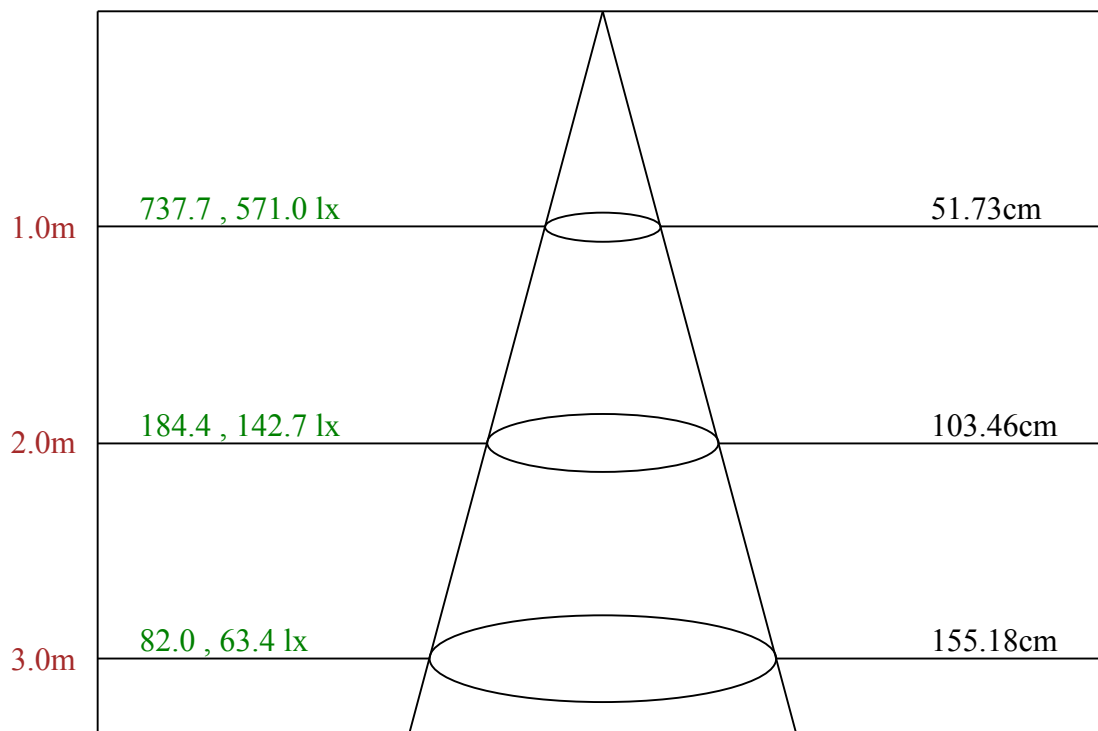
Average BeamAngle(IEC 61341): 29.00

Equipment: equipamento lumini
Temperature(°C): 26.5

Date: 30/07/2025
Humidity(%): 55.0%

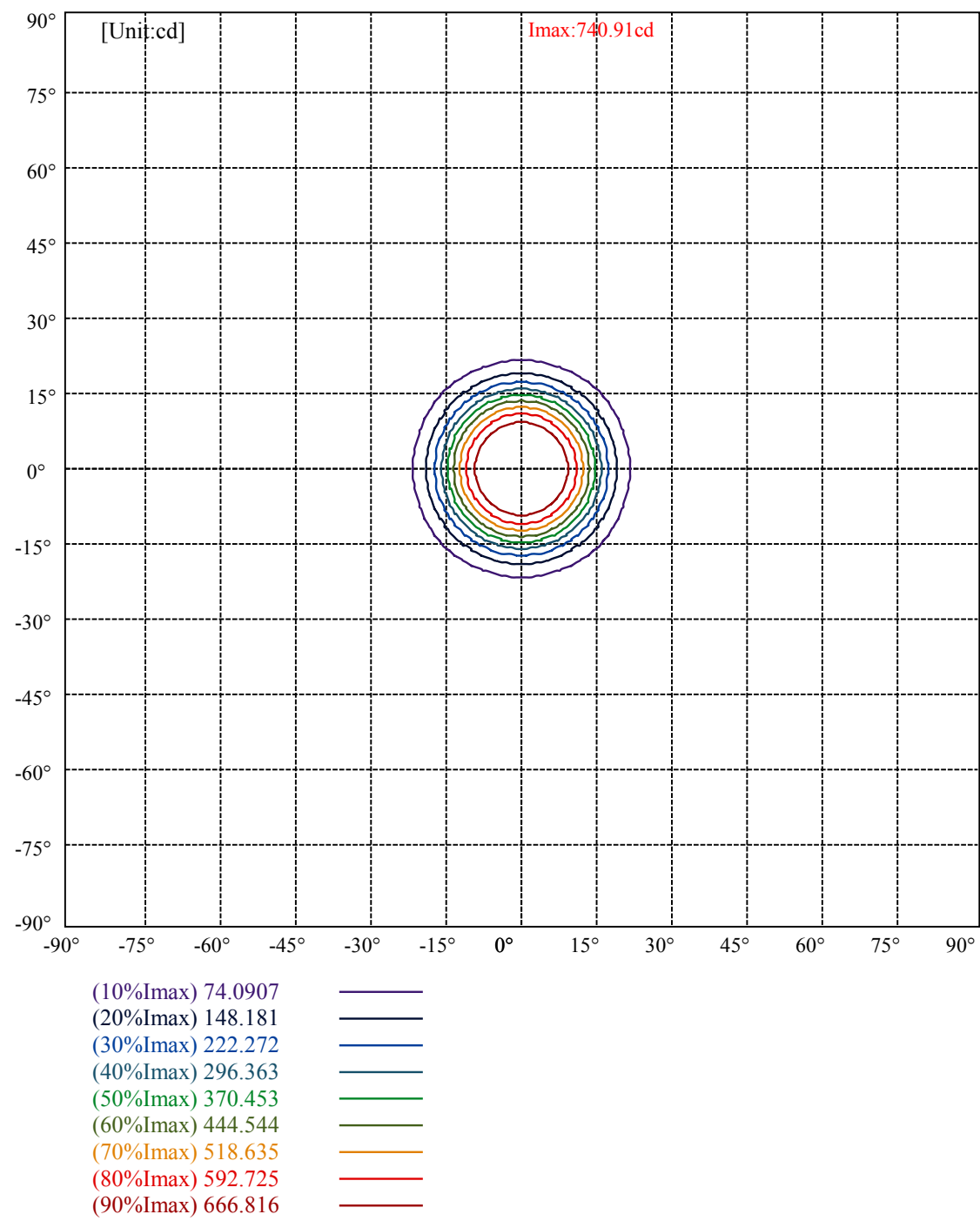
Operator: 01
Distance(m): 6.90





Max , Ave

Beam angle of C0 plane 29.00



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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	7929	5146	4052	3000	3259	3955	5273	7860	15801
C45	7929	5146	4052	3000	3259	3955	5273	7860	15801
C90	7929	5146	4052	3000	3259	3955	5273	7860	15801

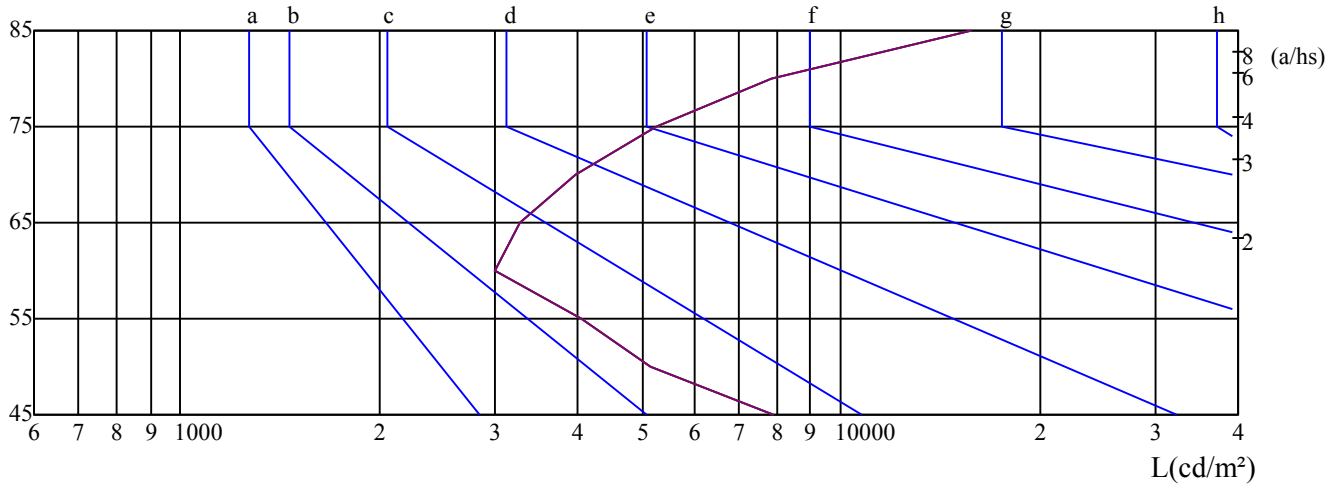
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3259	3259	3259	5273	5273	5273	15801	15801	15801

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

$\gamma(^{\circ})$



C0 ———

C45 ———

C90 ———

Equipment: equipamento lumini
Temperature($^{\circ}$ C): 26.5

Date: 30/07/2025
Humidity(%): 55.0%

Operator: 01
Distance(m): 6.90

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	8.98	9.87	9.39	10.24	10.61	9.52	10.42	9.93	10.78	11.16
	3H	9.71	10.50	10.14	10.89	11.30	10.18	10.98	10.61	11.37	11.77
	4H	10.45	11.19	10.90	11.60	12.02	10.85	11.59	11.29	11.99	12.42
	6H	11.62	12.29	12.08	12.72	13.18	11.90	12.57	12.36	13.00	13.46
	8H	12.44	13.09	12.91	13.52	13.98	12.66	13.30	13.13	13.74	14.20
	12H	13.47	14.08	13.94	14.52	14.99	13.63	14.24	14.10	14.68	15.15
4H	2H	9.01	9.75	9.46	10.15	10.58	9.50	10.24	9.95	10.65	11.07
	3H	10.06	10.68	10.53	11.12	11.60	10.45	11.08	10.92	11.52	11.99
	4H	11.15	11.68	11.63	12.15	12.66	11.45	11.99	11.93	12.46	12.96
	6H	12.62	13.10	13.14	13.59	14.10	12.82	13.29	13.33	13.79	14.29
	8H	13.66	14.10	14.19	14.60	15.13	13.80	14.24	14.33	14.74	15.27
	12H	14.90	15.31	15.43	15.80	16.38	15.00	15.41	15.54	15.90	16.48
8H	4H	11.57	12.01	12.10	12.51	13.04	11.82	12.26	12.35	12.77	13.29
	6H	13.40	13.76	13.95	14.28	14.85	13.55	13.91	14.09	14.43	14.99
	8H	14.71	15.00	15.28	15.57	16.12	14.81	15.10	15.38	15.67	16.22
	12H	16.20	16.43	16.78	16.99	17.56	16.27	16.50	16.85	17.06	17.63
12H	4H	11.72	12.12	12.25	12.62	13.19	11.96	12.37	12.49	12.86	13.44
	6H	13.73	14.03	14.30	14.59	15.14	13.86	14.16	14.43	14.72	15.27
	8H	15.11	15.34	15.70	15.90	16.47	15.20	15.43	15.78	15.99	16.56
Variation with the observer position at spacings:											
S = 1.0H		1.9/-1.6					1.9/-1.6				
S = 1.5H		2.4/-1.5					2.4/-1.5				
S = 2.0H		2.7/-1.4					2.7/-1.4				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-1.7					-1.7				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fa

LampCAT: modulo led 2W 30K irc 90

Ballast type: led driver 700mA

Report No:

Voltage(V): 221.3600

Test No:

Current(A): 0.0190

Number of Lamps: 1

Power (W): 3.3030

Lamp flux(lm): 223.0

PF: 0.7750

Length(mm): 22

Width(mm): 22

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 166.60, Efficiency(%): 74.71% , Luminous Efficacy(lm/W): 50.44

Central intensity(cd): 196.010, Maximum intensity(cd): 210.900

Angle of maximum intensity: C=0.0 γ =10.0

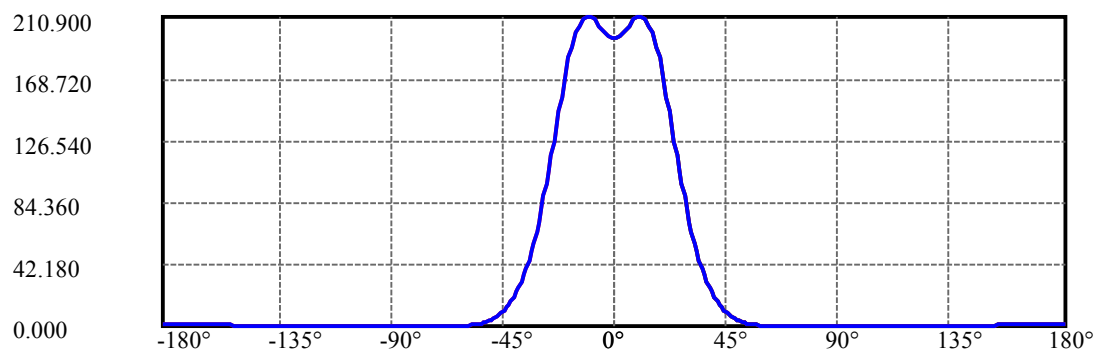
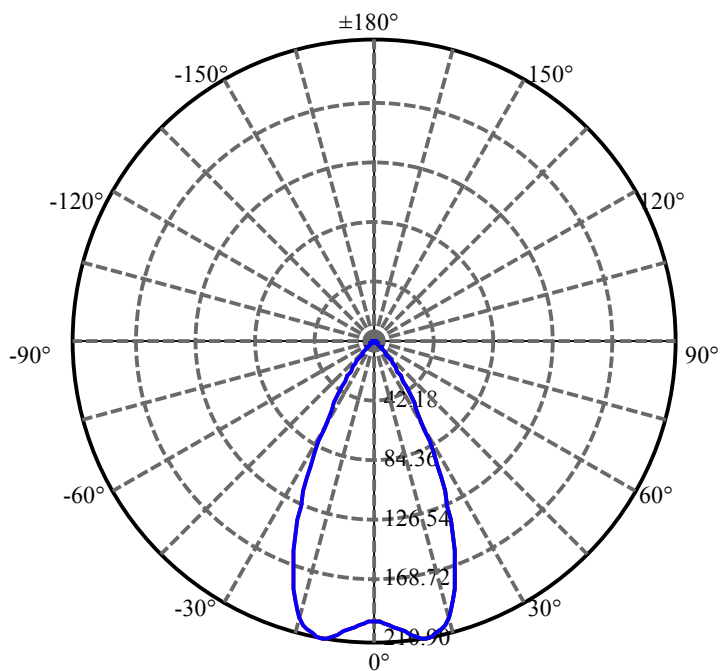
Beam angle of C0 plane : 53.83

Aveage BeamAngle(IEC 61341):53.83

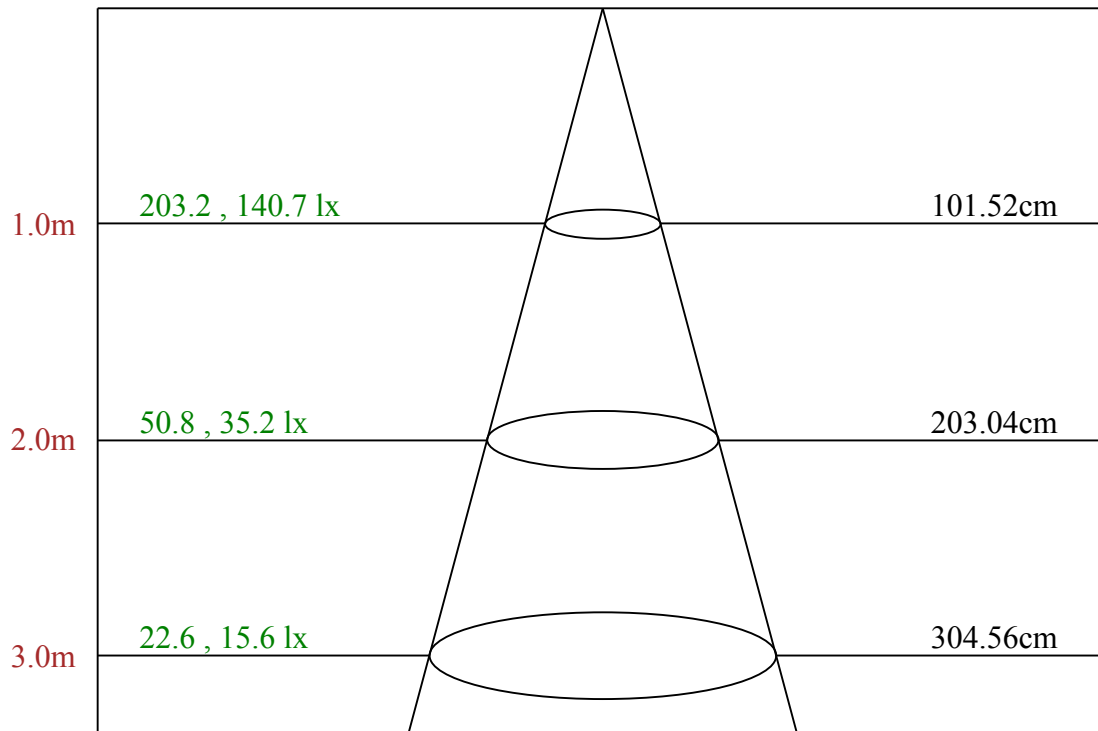
Equipment: equipamento lumini
Temperature(°C): 26.5

Date: 30/07/2025
Humidity(%): 55.0%

Operator: 01
Distance(m): 6.90

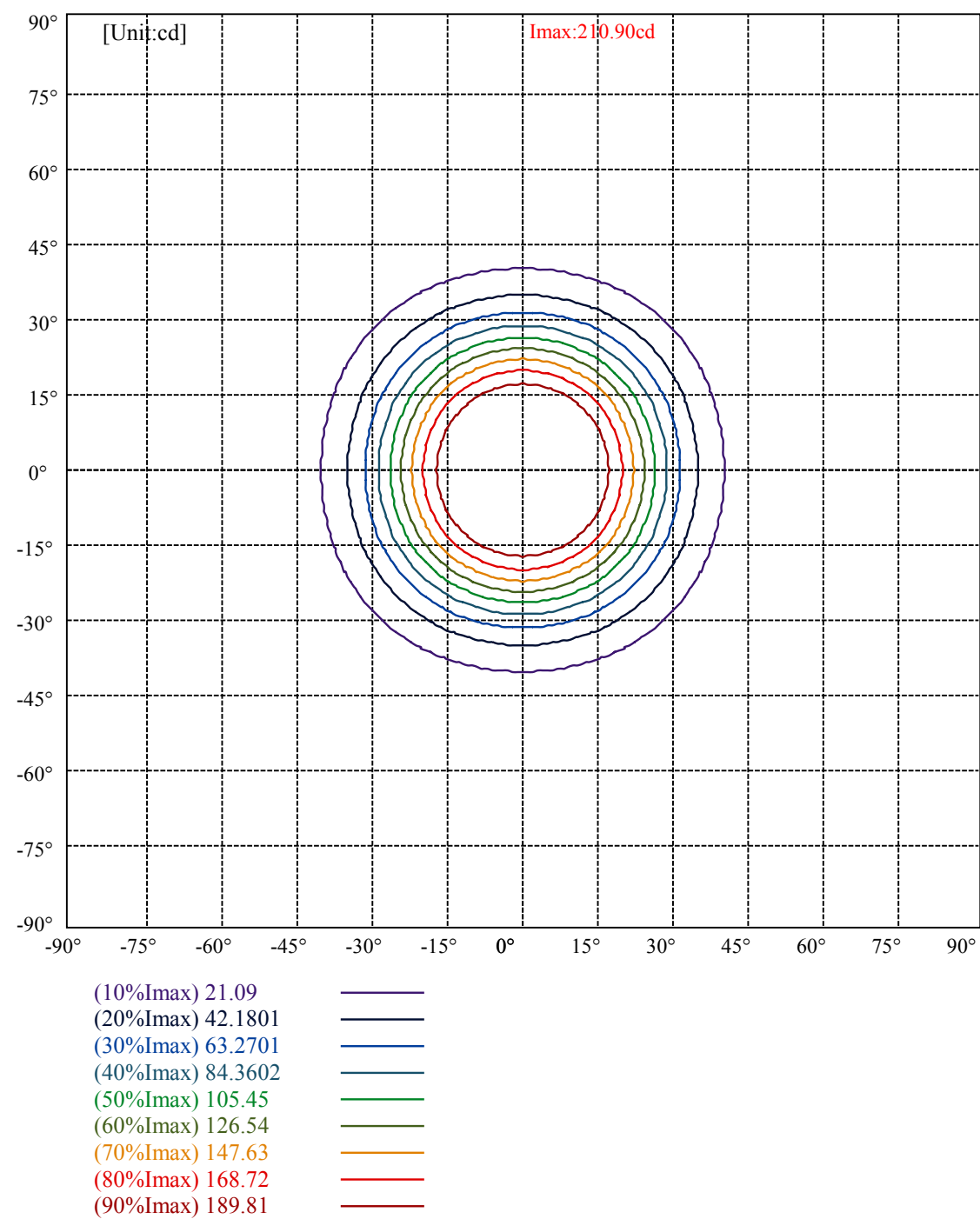


C0(Max):
C0/C180:
C90/C270:



Max , Ave

Beam angle of C0 plane 53.83



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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	26797	10884	3108	2139	2386	2948	3943	5736	11710
C45	26797	10884	3108	2139	2386	2948	3943	5736	11710
C90	26797	10884	3108	2139	2386	2948	3943	5736	11710

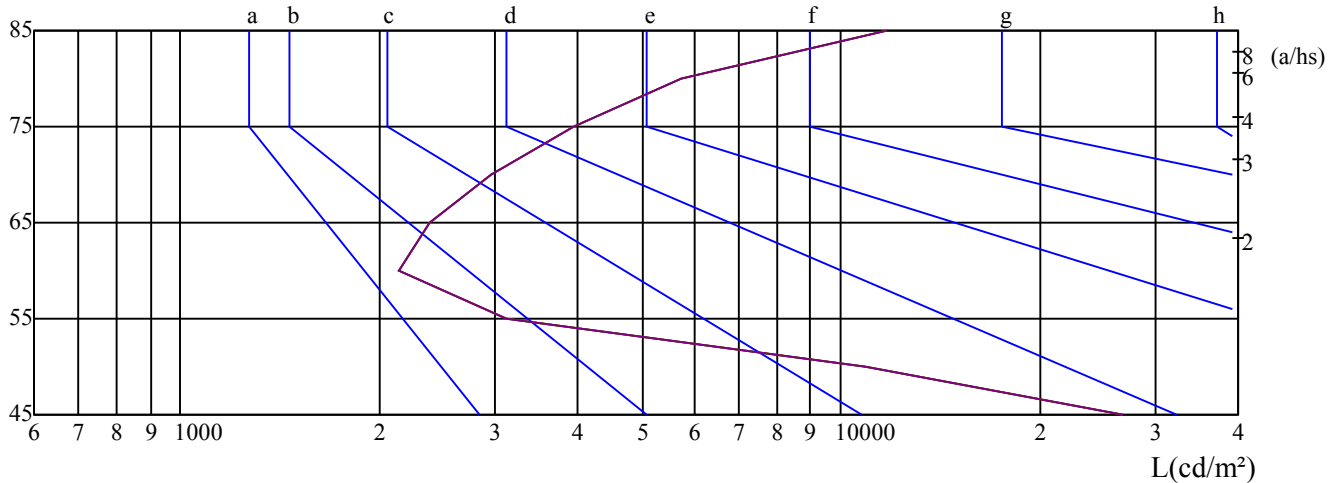
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2386	2386	2386	3943	3943	3943	11710	11710	11710

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

$\gamma(^{\circ})$



C0 ———

C45 ———

C90 ———

Equipment: equipamento lumini
Temperature($^{\circ}$ C): 26.5

Date: 30/07/2025
Humidity(%): 55.0%

Operator: 01
Distance(m): 6.90

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	17.31	18.25	17.71	18.61	18.98	14.86	15.80	15.26	16.16	16.53
	3H	17.16	18.00	17.59	18.38	18.78	14.76	15.60	15.19	15.98	16.38
	4H	17.13	17.91	17.58	18.31	18.73	14.79	15.57	15.23	15.97	16.39
	6H	17.19	17.90	17.65	18.32	18.77	14.96	15.67	15.42	16.09	16.54
	8H	17.24	17.92	17.70	18.34	18.80	15.12	15.80	15.58	16.22	16.68
	12H	17.38	18.02	17.84	18.46	18.92	15.38	16.02	15.85	16.46	16.93
4H	2H	17.01	17.79	17.45	18.18	18.60	14.58	15.36	15.02	15.75	16.17
	3H	16.87	17.52	17.33	17.95	18.42	14.52	15.17	14.99	15.61	16.08
	4H	16.92	17.48	17.40	17.94	18.44	14.68	15.24	15.16	15.70	16.20
	6H	17.02	17.52	17.53	18.01	18.51	14.97	15.46	15.48	15.96	16.46
	8H	17.19	17.64	17.71	18.14	18.66	15.30	15.75	15.82	16.25	16.77
	12H	17.50	17.92	18.02	18.41	18.98	15.78	16.20	16.31	16.69	17.26
8H	4H	16.80	17.26	17.32	17.75	18.28	14.63	15.09	15.16	15.59	16.11
	6H	17.00	17.37	17.54	17.89	18.45	15.10	15.48	15.64	15.99	16.55
	8H	17.33	17.64	17.90	18.20	18.75	15.65	15.96	16.22	16.52	17.06
	12H	17.84	18.08	18.42	18.64	19.21	16.38	16.63	16.96	17.18	17.75
12H	4H	16.77	17.20	17.30	17.69	18.25	14.63	15.05	15.16	15.54	16.11
	6H	17.06	17.38	17.63	17.93	18.48	15.22	15.53	15.79	16.09	16.64
	8H	17.41	17.66	17.99	18.21	18.78	15.82	16.06	16.40	16.62	17.19
Variation with the observer position at spacings:											
S = 1.0H		4.7/-10.2					4.7/-10.2				
S = 1.5H		7.2/-8.4					7.2/-8.4				
S = 2.0H		8.9/-7.0					8.9/-7.0				
Standard tables:		BK1					BK1				
Uncorrected UGR		0.7					0.7				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fc

LampCAT: modulo led 4W 30K irc 90

Ballast type: led driver 700mA

Report No:

Voltage(V): 127.9300

Test No:

Current(A): 0.0440

Number of Lamps: 1

Power (W): 5.5280

Lamp flux(lm): 330.0

PF: 0.9870

Length(mm): 22

Width(mm): 22

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 272.50, Efficiency(%): 82.58% , Luminous Efficacy(lm/W): 49.29

Central intensity(cd): 1916.279, Maximum intensity(cd): 1916.279

Angle of maximum intensity: C=0.0 γ =0.0

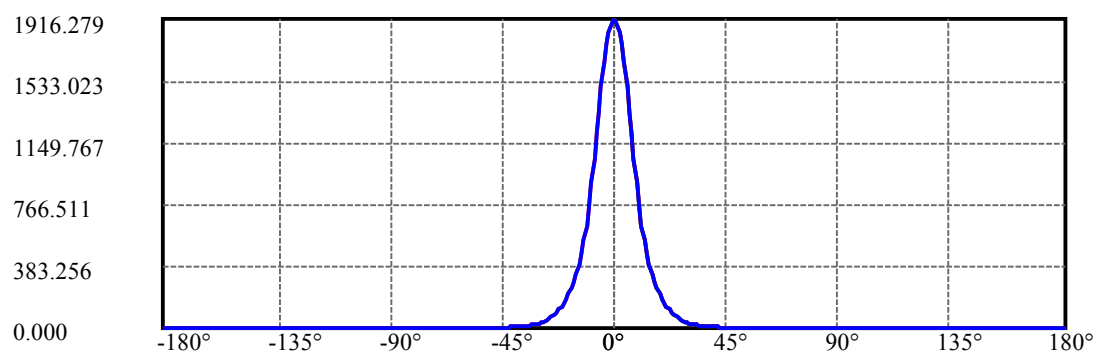
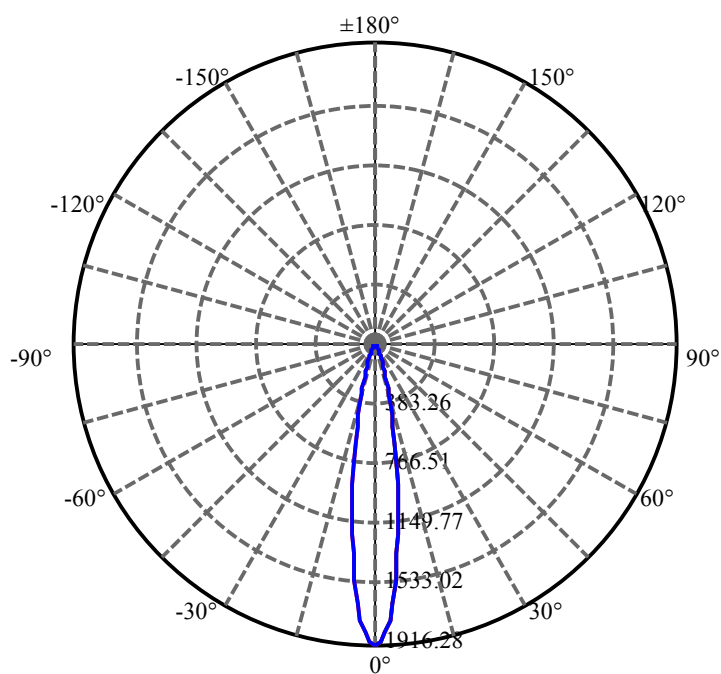
Beam angle of C0 plane : 17.19

Aveage BeamAngle(IEC 61341):17.19

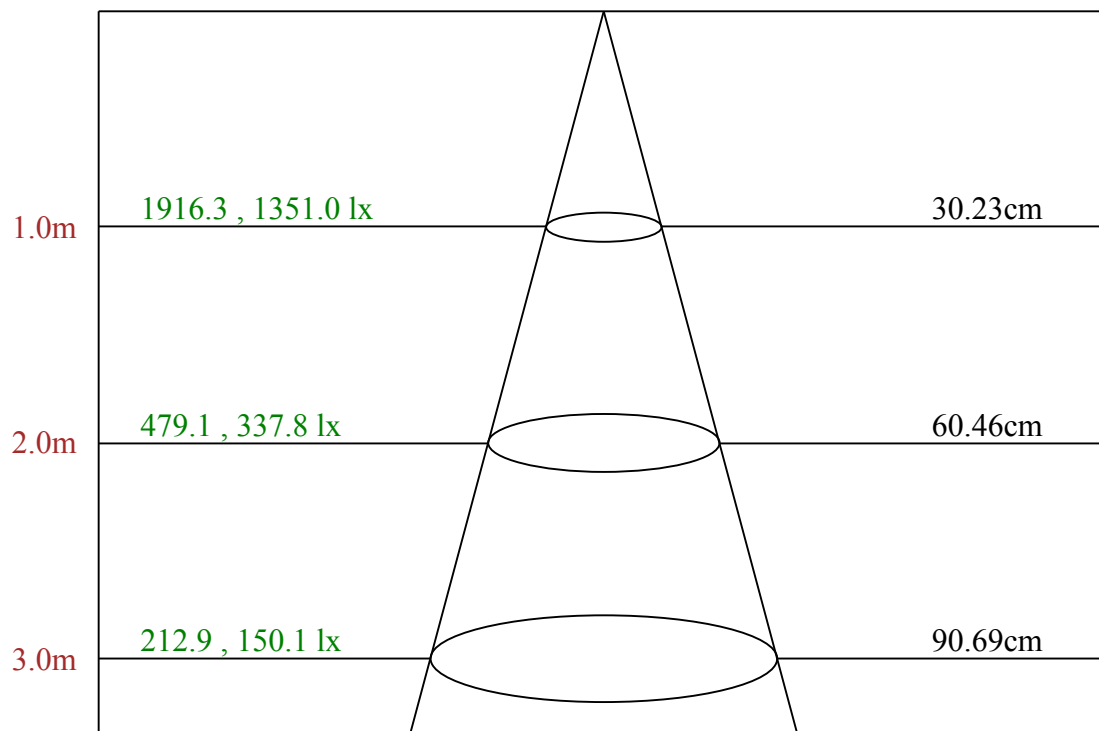
Equipment: equipamento lumini
Temperature(°C): 25.5

Date: 22/05/2025
Humidity(%): 60.0%

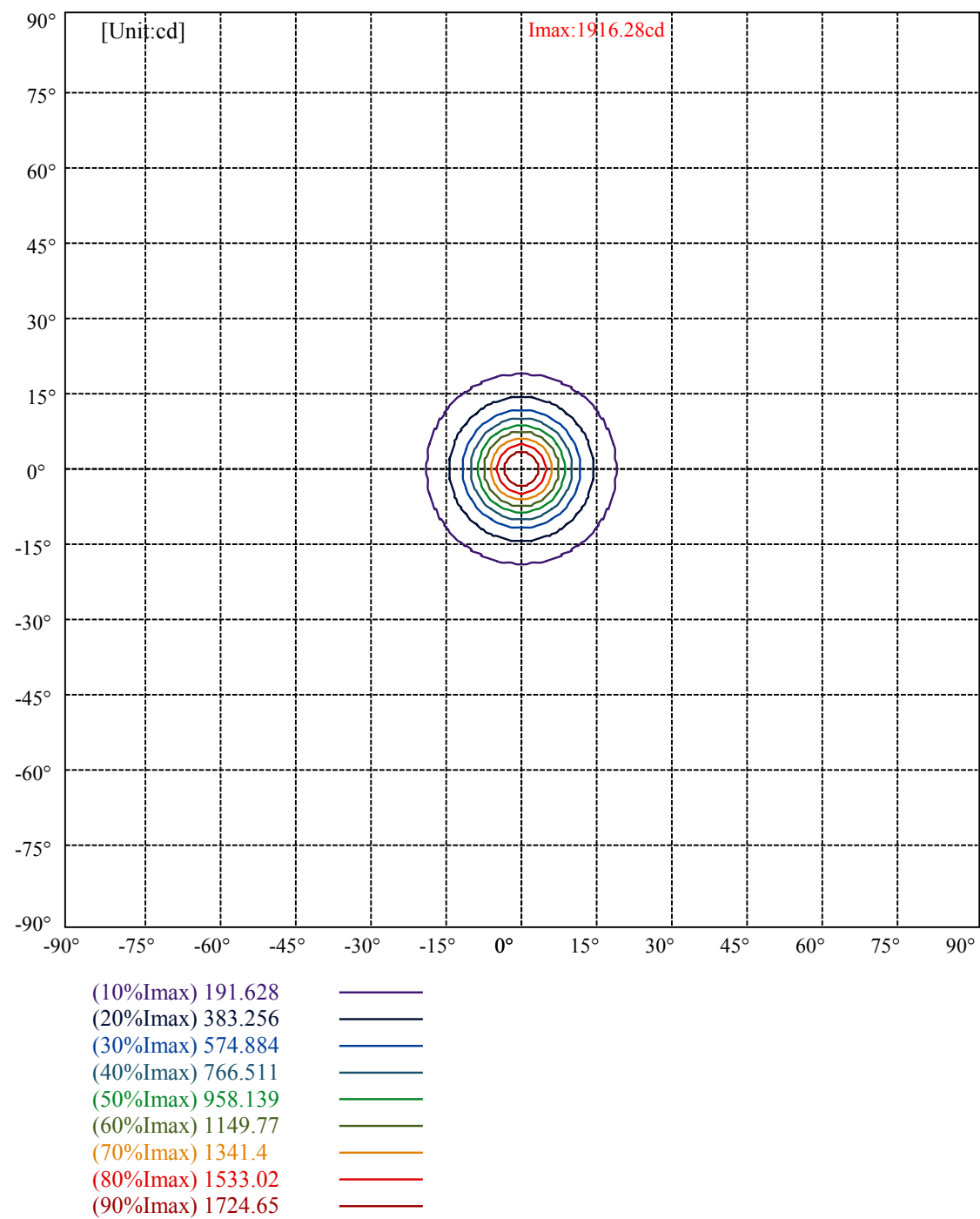
Operator: 01
Distance(m): 6.90



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



Max , Ave Beam angle of C0 plane 17.19



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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	10451	7231	5166	3738	4248	5249	6984	10409	20598
C45	10451	7231	5166	3738	4248	5249	6984	10409	20598
C90	10451	7231	5166	3738	4248	5249	6984	10409	20598

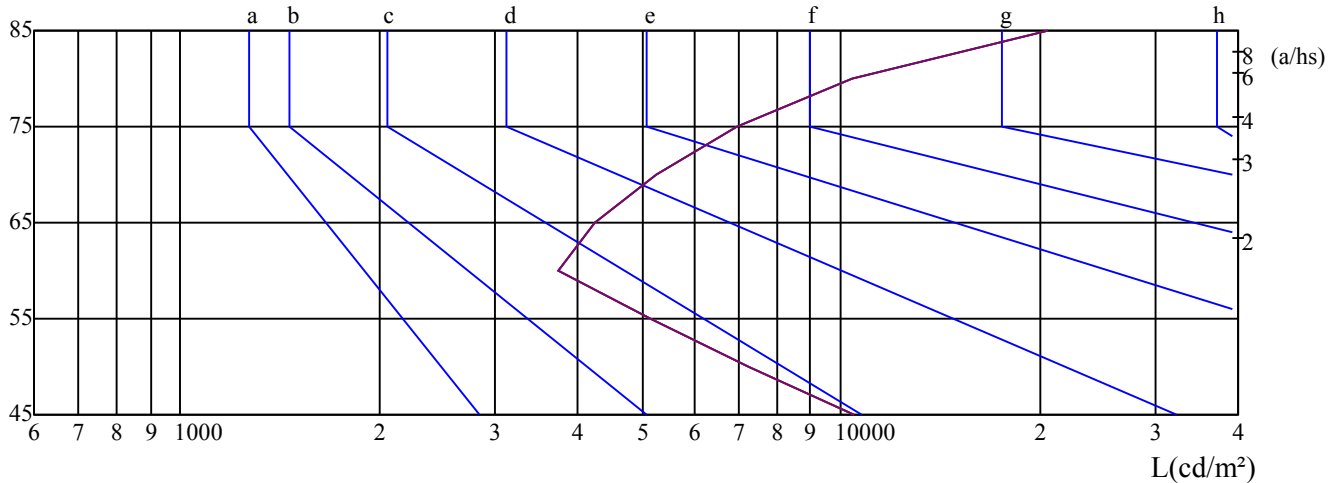
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4248	4248	4248	6984	6984	6984	20598	20598	20598

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

$\gamma(^{\circ})$



C0 ———

C45 ———

C90 ———

Equipment: equipamento lumini
Temperature($^{\circ}$ C): 25.5

Date: 22/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90

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	11.28	12.17	11.68	12.53	12.90	11.68	12.58	12.09	12.94	13.31
	3H	11.83	12.63	12.26	13.01	13.42	12.02	12.81	12.44	13.20	13.60
	4H	12.47	13.21	12.91	13.61	14.03	12.45	13.19	12.89	13.59	14.01
	6H	13.53	14.20	13.99	14.62	15.07	13.23	13.90	13.69	14.33	14.78
	8H	14.19	14.84	14.66	15.27	15.73	13.79	14.44	14.26	14.87	15.33
	12H	15.16	15.77	15.63	16.21	16.68	14.56	15.17	15.02	15.60	16.07
4H	2H	11.17	11.91	11.61	12.31	12.73	11.55	12.29	11.99	12.69	13.11
	3H	11.99	12.61	12.46	13.05	13.52	12.11	12.73	12.58	13.17	13.64
	4H	12.95	13.49	13.43	13.95	14.45	12.84	13.38	13.32	13.84	14.34
	6H	14.32	14.79	14.83	15.28	15.79	13.92	14.40	14.44	14.89	15.39
	8H	15.21	15.64	15.73	16.14	16.67	14.72	15.16	15.25	15.66	16.18
	12H	16.43	16.84	16.96	17.33	17.90	15.74	16.15	16.27	16.64	17.21
8H	4H	13.23	13.67	13.76	14.17	14.69	13.13	13.57	13.66	14.07	14.59
	6H	14.90	15.26	15.45	15.78	16.34	14.54	14.89	15.08	15.41	15.97
	8H	16.06	16.36	16.63	16.92	17.47	15.62	15.92	16.19	16.48	17.03
	12H	17.59	17.81	18.17	18.37	18.94	16.92	17.14	17.50	17.70	18.27
12H	4H	13.32	13.73	13.85	14.22	14.79	13.24	13.65	13.77	14.14	14.71
	6H	15.15	15.45	15.72	16.01	16.55	14.82	15.12	15.39	15.68	16.22
	8H	16.39	16.61	16.97	17.17	17.74	15.99	16.22	16.57	16.77	17.34
Variation with the observer position at spacings:											
S = 1.0H		2.7/-2.1					2.7/-2.1				
S = 1.5H		3.5/-1.8					3.5/-1.8				
S = 2.0H		4.0/-1.7					4.0/-1.7				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-0.5					-0.5				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fm

LampCAT: modulo led 4W 30K irc 90

Ballast type: led driver 700mA

Report No:

Voltage(V): 127.9400

Test No:

Current(A): 0.0440

Number of Lamps: 1

Power (W): 5.5300

Lamp flux(lm): 330.0

PF: 0.9870

Length(mm): 22

Width(mm): 22

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 276.70, Efficiency(%): 83.85% , Luminous Efficacy(lm/W): 50.04

Central intensity(cd): 1264.355, Maximum intensity(cd): 1264.355

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

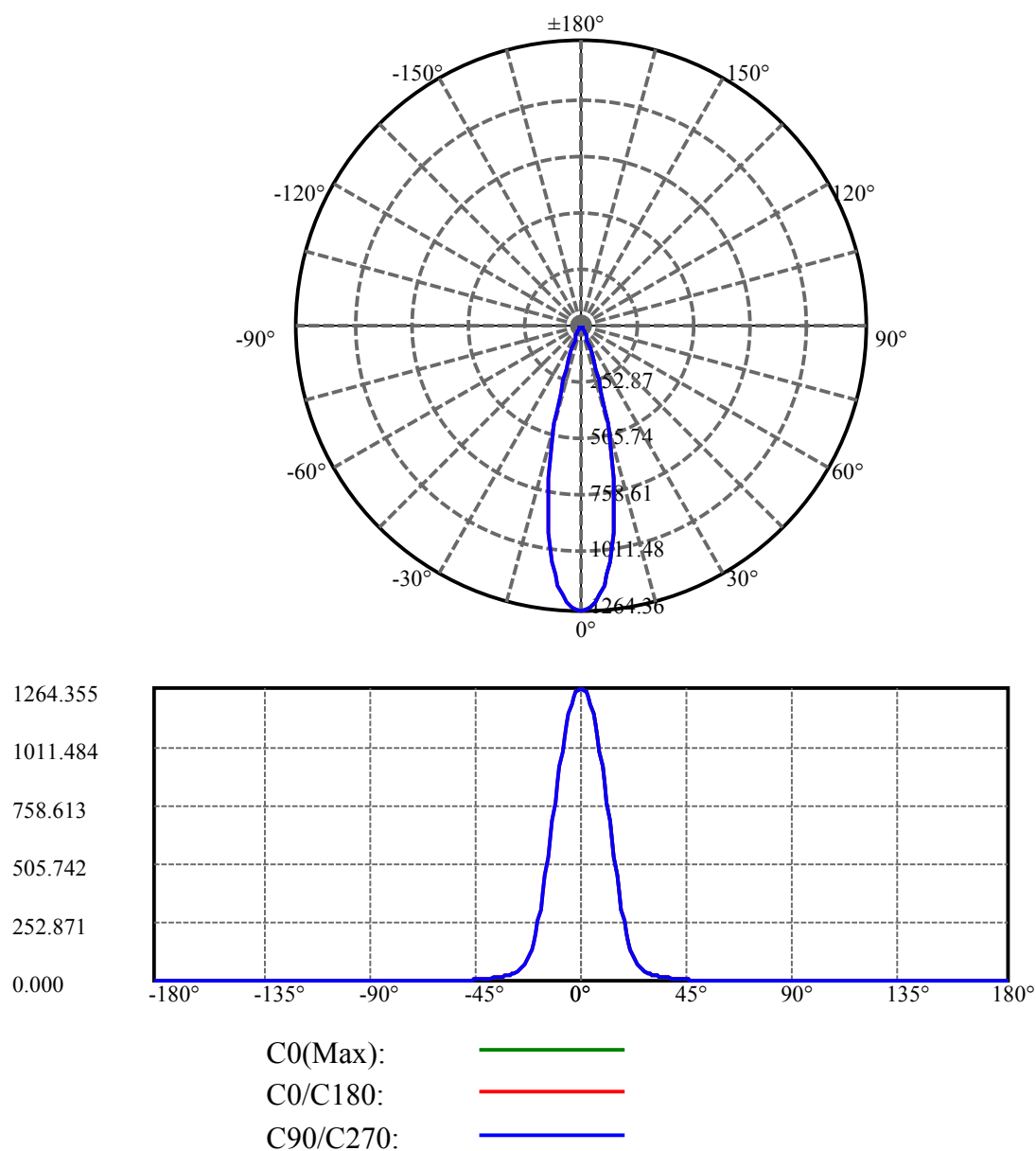
Beam angle of C0 plane : 25.48

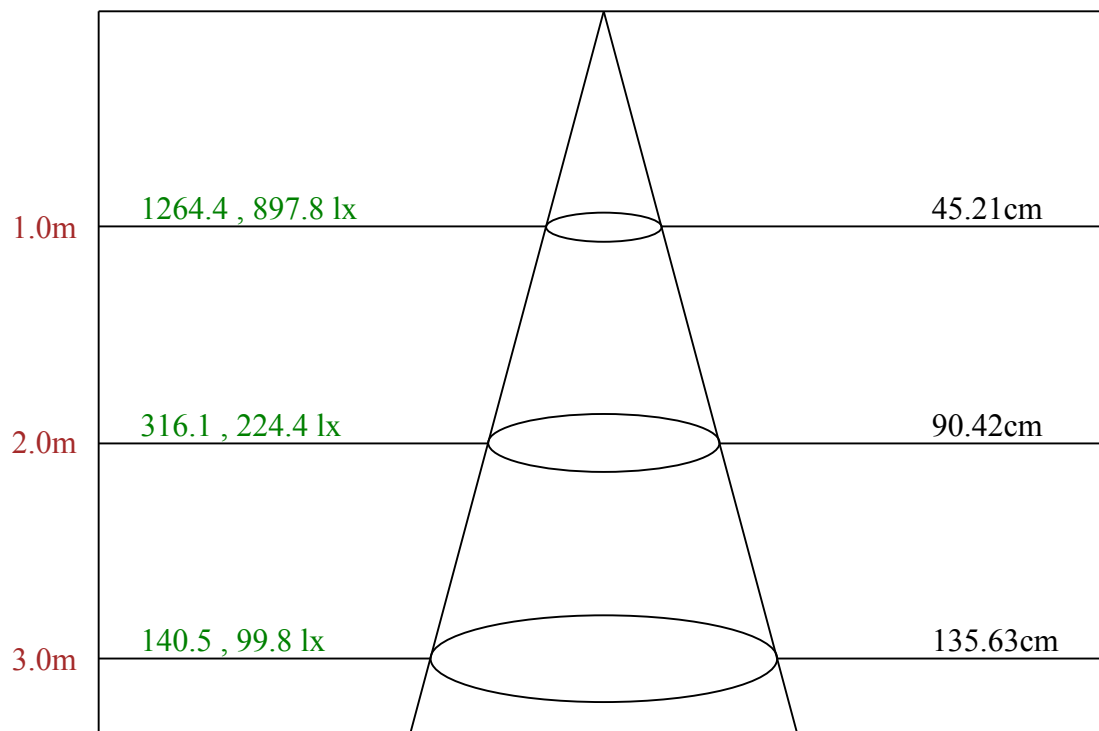
Average BeamAngle(IEC 61341): 25.48

Equipment: equipamento lumini
Temperature(°C): 25.5

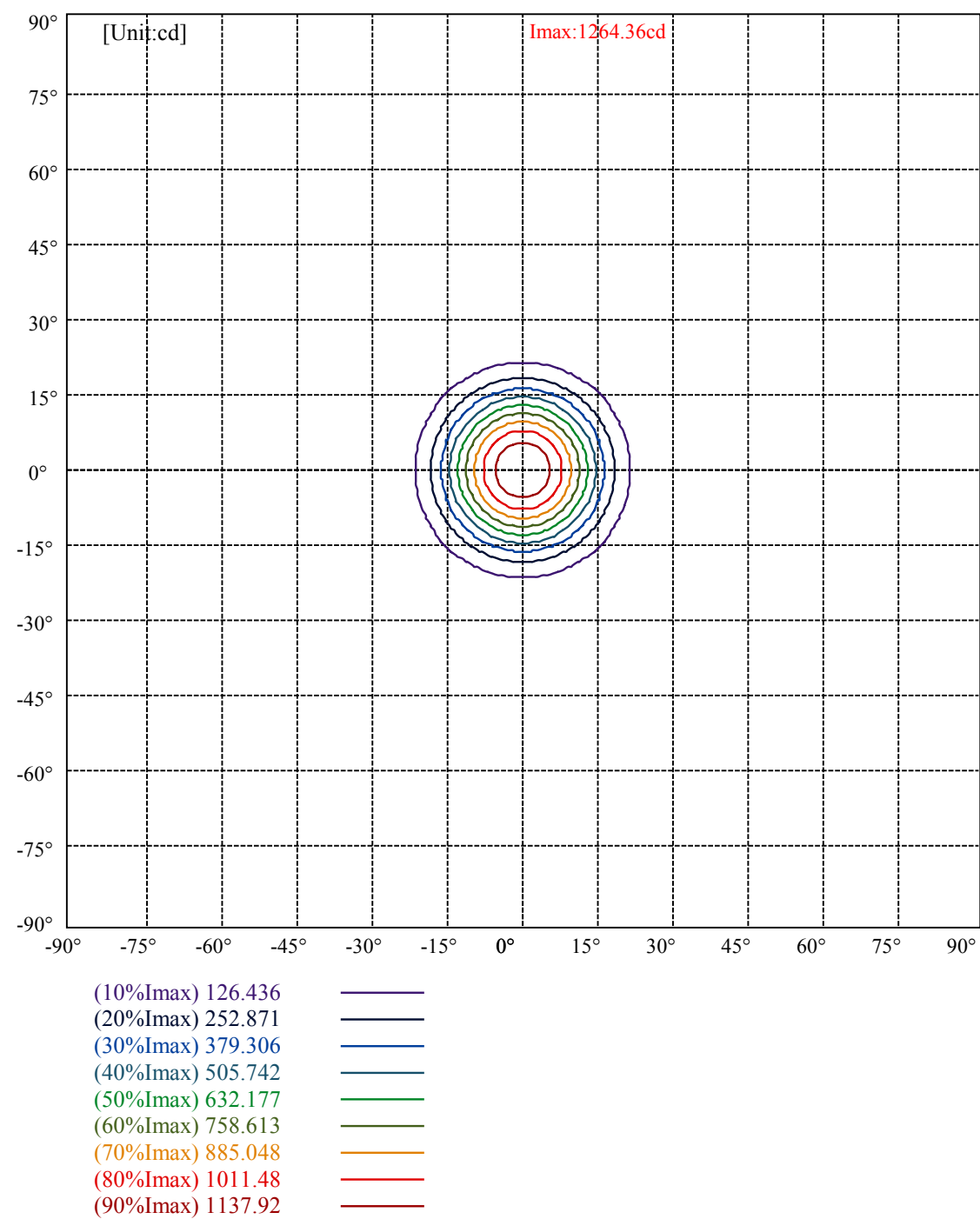
Date: 22/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 25.48



Luminance Table

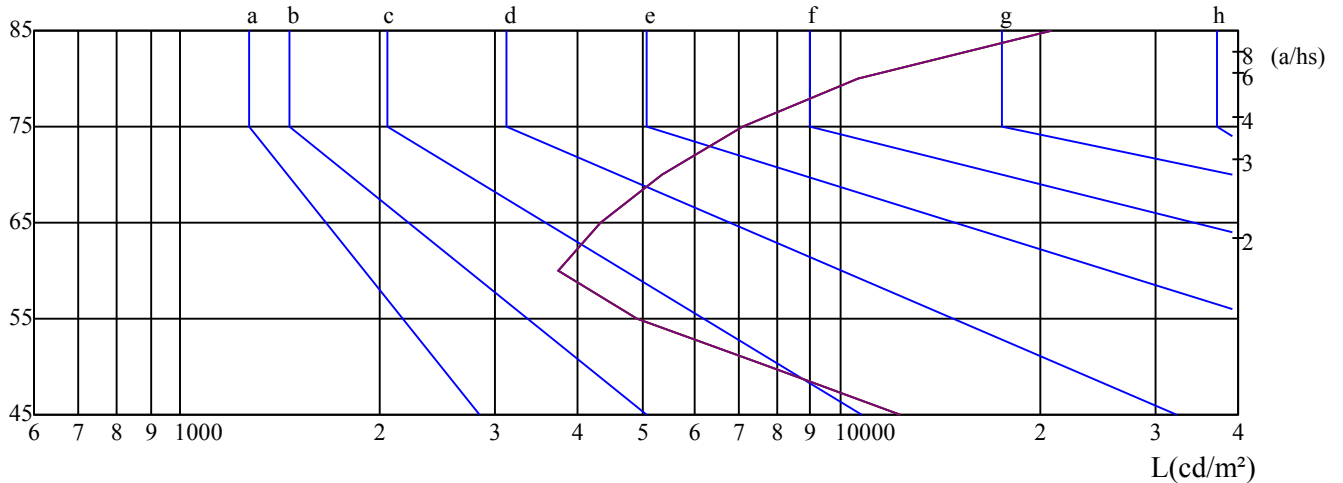
γ	45	50	55	60	65	70	75	80	85
C0	12346	7824	4931	3738	4335	5357	7126	10621	20880
C45	12346	7824	4931	3738	4335	5357	7126	10621	20880
C90	12346	7824	4931	3738	4335	5357	7126	10621	20880

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4335	4335	4335	7126	7126	7126	20880	20880	20880

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

 $\gamma(^{\circ})$ 

C0 ———

C45 ———

C90 ———

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	11.71	12.61	12.11	12.96	13.34	12.25	13.15	12.65	13.51	13.88
	3H	12.08	12.88	12.51	13.27	13.67	12.52	13.32	12.95	13.71	14.11
	4H	12.55	13.29	13.00	13.69	14.11	12.93	13.67	13.37	14.07	14.49
	6H	13.41	14.08	13.87	14.51	14.96	13.71	14.38	14.17	14.80	15.26
	8H	14.03	14.68	14.50	15.11	15.57	14.26	14.91	14.72	15.34	15.80
	12H	14.84	15.45	15.31	15.89	16.36	15.02	15.63	15.49	16.07	16.54
4H	2H	11.59	12.33	12.03	12.73	13.15	12.10	12.84	12.54	13.24	13.66
	3H	12.20	12.82	12.67	13.26	13.73	12.58	13.20	13.05	13.64	14.11
	4H	12.97	13.51	13.45	13.97	14.47	13.27	13.81	13.75	14.28	14.78
	6H	14.14	14.62	14.65	15.11	15.61	14.36	14.83	14.87	15.33	15.83
	8H	15.01	15.45	15.53	15.95	16.47	15.15	15.59	15.68	16.09	16.62
	12H	16.07	16.47	16.60	16.96	17.54	16.17	16.58	16.70	17.07	17.64
8H	4H	13.26	13.70	13.78	14.20	14.72	13.52	13.96	14.05	14.46	14.99
	6H	14.77	15.13	15.32	15.65	16.21	14.94	15.30	15.48	15.82	16.38
	8H	15.92	16.22	16.49	16.78	17.32	16.02	16.32	16.59	16.88	17.43
	12H	17.24	17.47	17.82	18.03	18.60	17.31	17.54	17.89	18.09	18.66
12H	4H	13.37	13.77	13.89	14.26	14.83	13.62	14.02	14.15	14.52	15.09
	6H	15.05	15.35	15.62	15.91	16.46	15.21	15.51	15.78	16.07	16.61
	8H	16.27	16.50	16.86	17.06	17.63	16.37	16.59	16.95	17.15	17.72
Variation with the observer position at spacings:											
S = 1.0H		2.5/-2.4					2.5/-2.4				
S = 1.5H		3.3/-1.9					3.3/-1.9				
S = 2.0H		3.8/-1.7					3.8/-1.7				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-0.3					-0.3				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fa

LampCAT: modulo led 4W 30K irc 90

Ballast type: led driver 700mA

Report No:

Voltage(V): 127.8900

Test No:

Current(A): 0.0440

Number of Lamps: 1

Power (W): 5.5510

Lamp flux(lm): 330.0

PF: 0.9870

Length(mm): 22

Width(mm): 22

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 254.85, Efficiency(%): 77.23% , Luminous Efficacy(lm/W): 45.91

Central intensity(cd): 409.006, Maximum intensity(cd): 409.006

Angle of maximum intensity: C=0.0 γ =0.0

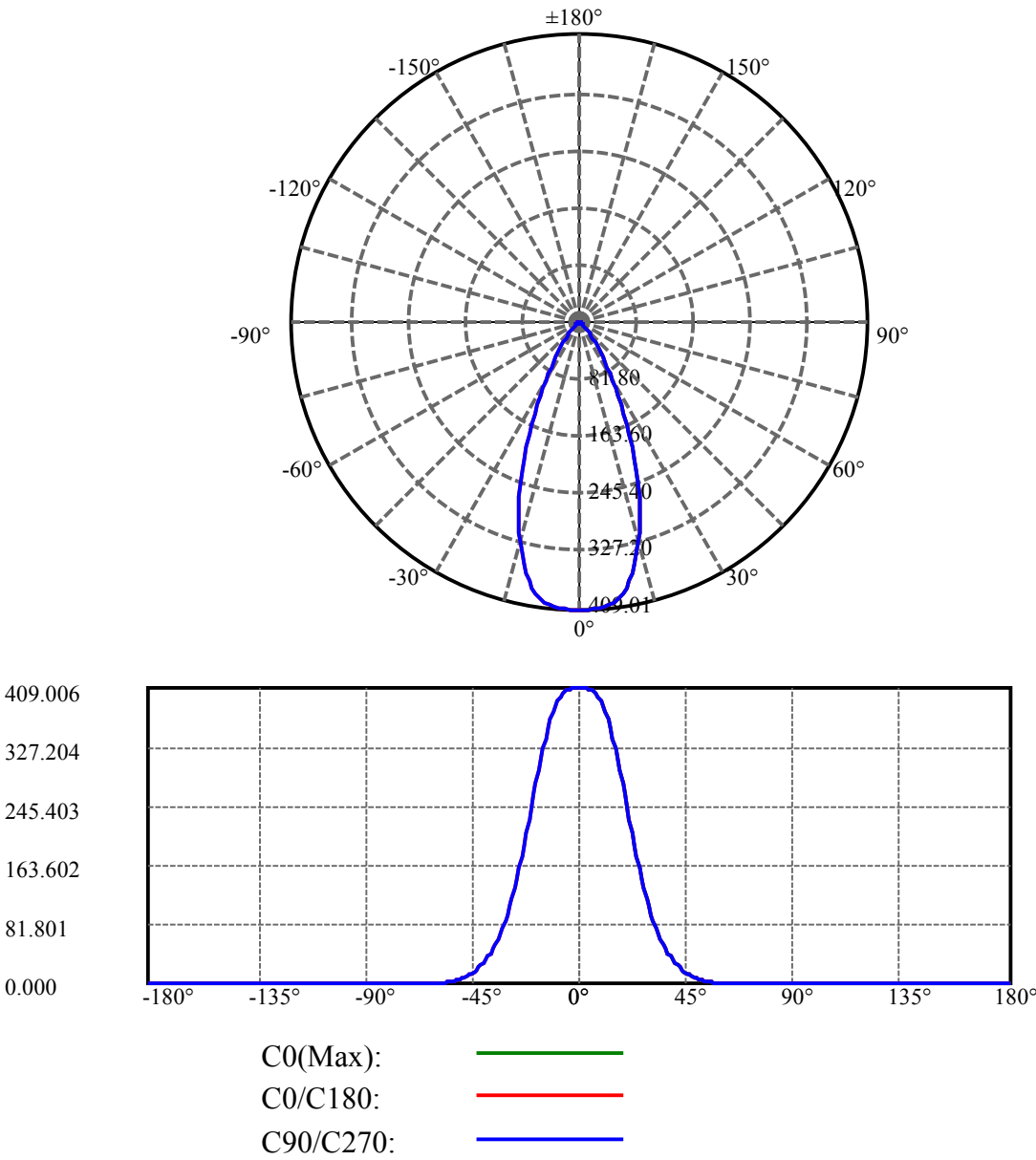
Beam angle of C0 plane : 44.55

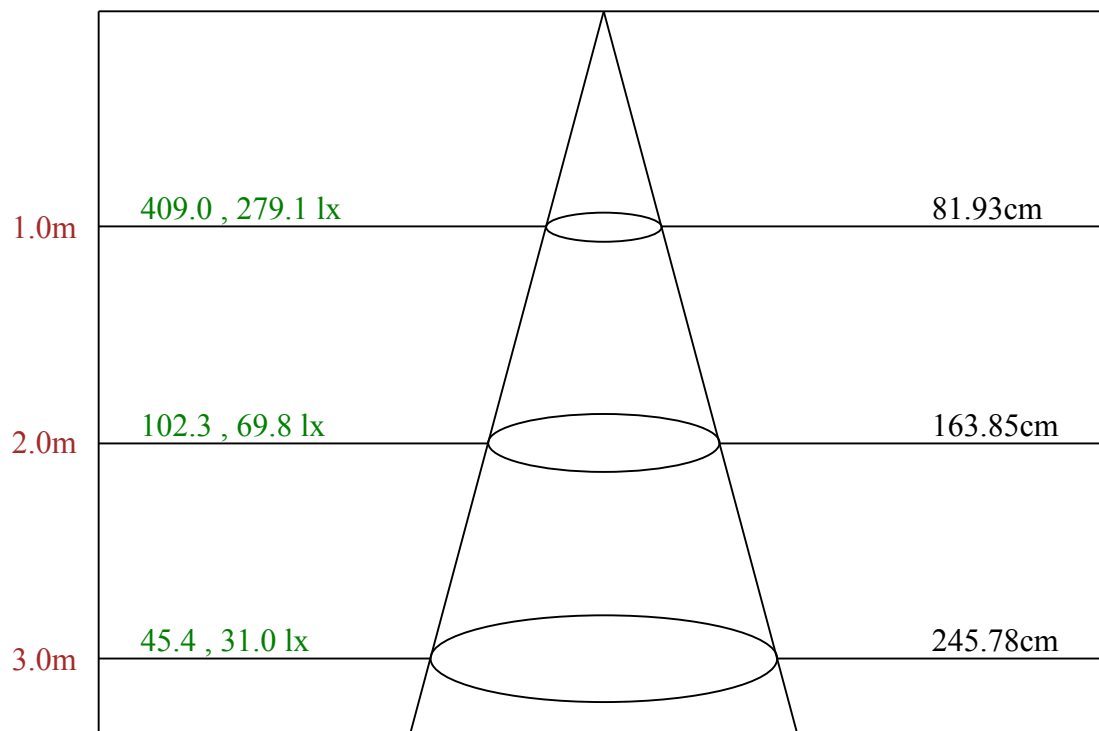
Aveage BeamAngle(IEC 61341):44.55

Equipment: equipamento lumini
Temperature(°C): 25.5

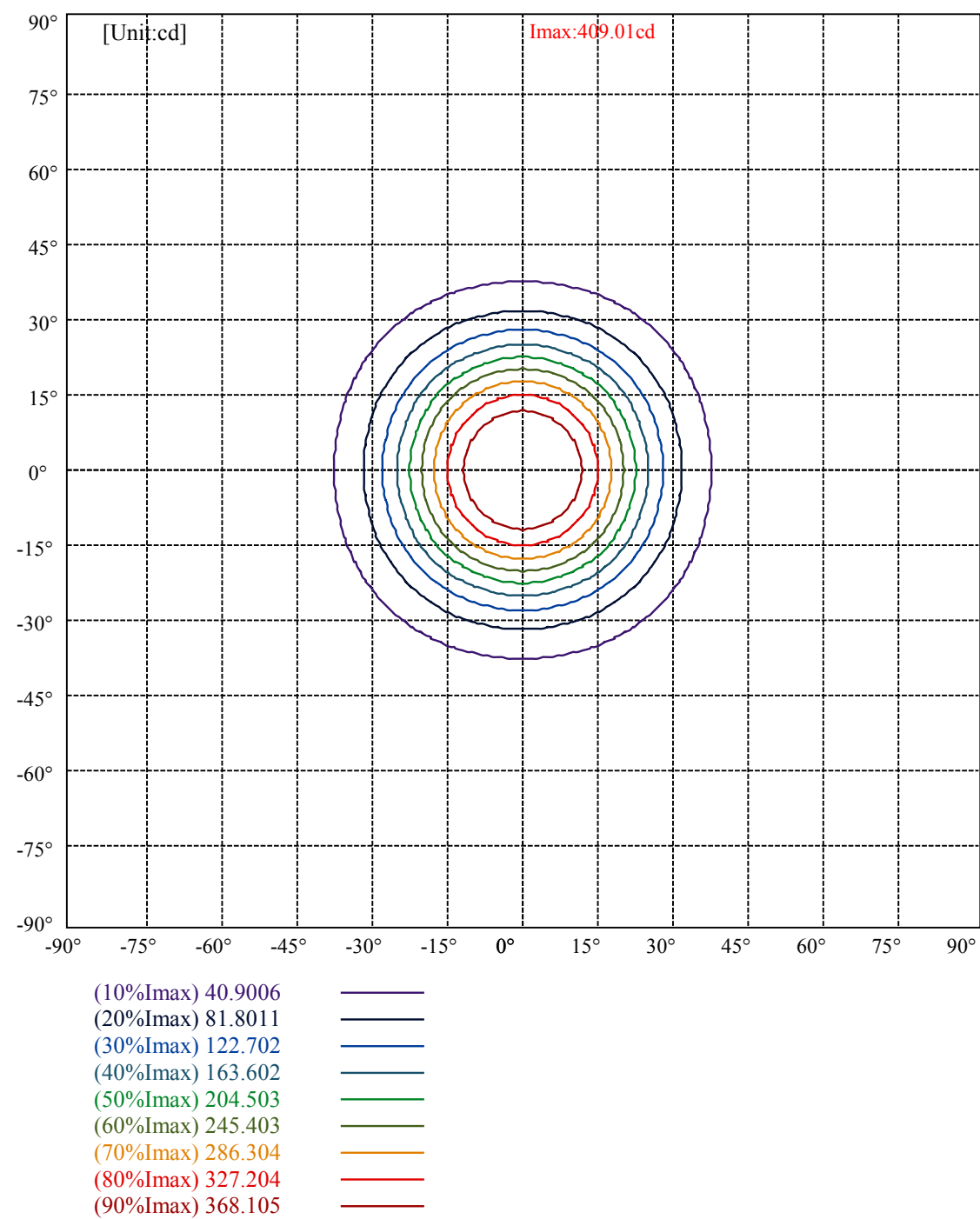
Date: 23/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 44.55



Luminance Table

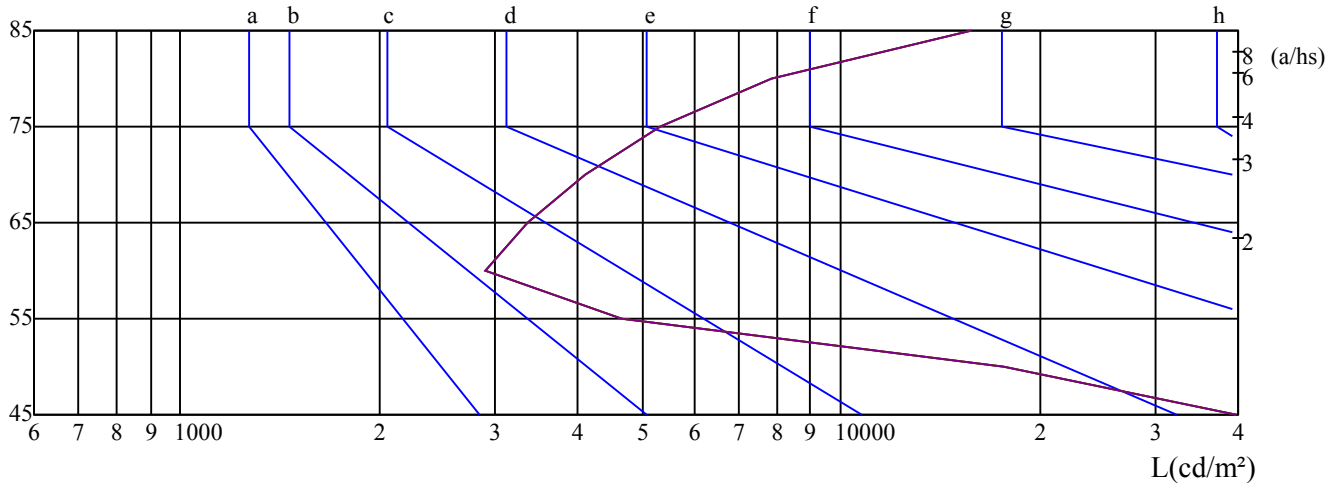
γ	45	50	55	60	65	70	75	80	85
C0	39699	17656	4652	2902	3346	4098	5321	7860	15801
C45	39699	17656	4652	2902	3346	4098	5321	7860	15801
C90	39699	17656	4652	2902	3346	4098	5321	7860	15801

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3346	3346	3346	5321	5321	5321	15801	15801	15801

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

 $\gamma(^{\circ})$ 

C0 —

C45 —

C90 —

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	20.13	21.07	20.53	21.42	21.79	19.12	20.06	19.52	20.42	20.78
	3H	19.95	20.79	20.37	21.16	21.56	18.95	19.79	19.38	20.17	20.56
	4H	19.88	20.65	20.32	21.05	21.47	18.90	19.67	19.34	20.07	20.48
	6H	19.88	20.58	20.33	21.00	21.45	18.91	19.62	19.37	20.03	20.48
	8H	19.87	20.54	20.33	20.97	21.42	18.93	19.60	19.38	20.03	20.48
	12H	19.92	20.56	20.38	20.99	21.46	19.00	19.64	19.46	20.07	20.54
4H	2H	19.82	20.59	20.26	20.99	21.40	18.82	19.59	19.26	19.99	20.40
	3H	19.63	20.27	20.09	20.70	21.17	18.64	19.29	19.10	19.72	20.19
	4H	19.61	20.17	20.09	20.63	21.13	18.65	19.21	19.13	19.67	20.16
	6H	19.62	20.11	20.13	20.60	21.10	18.69	19.18	19.20	19.67	20.17
	8H	19.68	20.14	20.20	20.63	21.15	18.79	19.25	19.31	19.74	20.26
	12H	19.85	20.27	20.38	20.76	21.33	19.00	19.42	19.52	19.91	20.47
8H	4H	19.45	19.91	19.97	20.40	20.92	18.51	18.96	19.03	19.46	19.97
	6H	19.51	19.89	20.05	20.40	20.96	18.62	18.99	19.16	19.51	20.06
	8H	19.70	20.01	20.26	20.57	21.11	18.86	19.17	19.42	19.73	20.27
	12H	20.00	20.24	20.58	20.79	21.36	19.22	19.46	19.80	20.01	20.58
12H	4H	19.42	19.84	19.94	20.32	20.89	18.47	18.89	19.00	19.38	19.95
	6H	19.54	19.86	20.11	20.41	20.95	18.66	18.97	19.23	19.53	20.07
	8H	19.73	19.97	20.30	20.52	21.09	18.91	19.15	19.49	19.70	20.27
Variation with the observer position at spacings:											
S = 1.0H		4.4/-10.1					4.4/-10.1				
S = 1.5H		7.0/-8.4					7.0/-8.4				
S = 2.0H		8.7/-7.1					8.7/-7.1				
Standard tables:		BK1					BK1				
Uncorrected UGR		1.4					1.4				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fc

LampCAT: modulo led 6W 30K irc 90

Ballast type: led driver 180mA

Report No:

Voltage(V): 127.8800

Test No:

Current(A): 0.0650

Number of Lamps: 1

Power (W): 8.1570

Lamp flux(lm): 654.0

PF: 0.9870

Length(mm): 46

Width(mm): 46

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 482.92, Efficiency(%): 73.84% , Luminous Efficacy(lm/W): 59.20

Central intensity(cd): 3791.660, Maximum intensity(cd): 3791.660

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

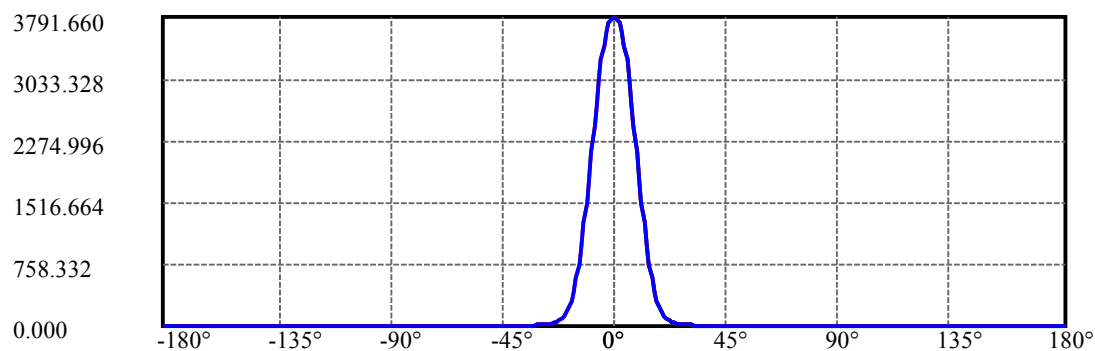
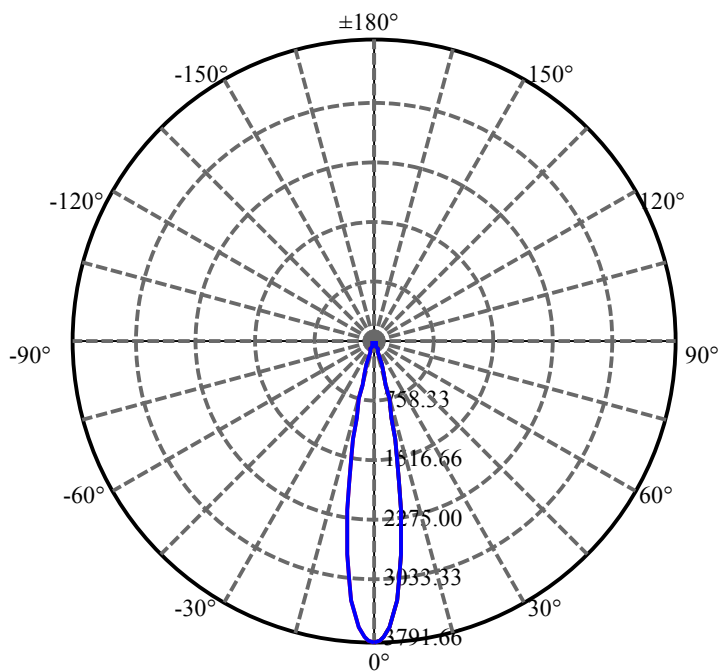
Beam angle of C0 plane : 19.53

Average BeamAngle(IEC 61341): 19.53

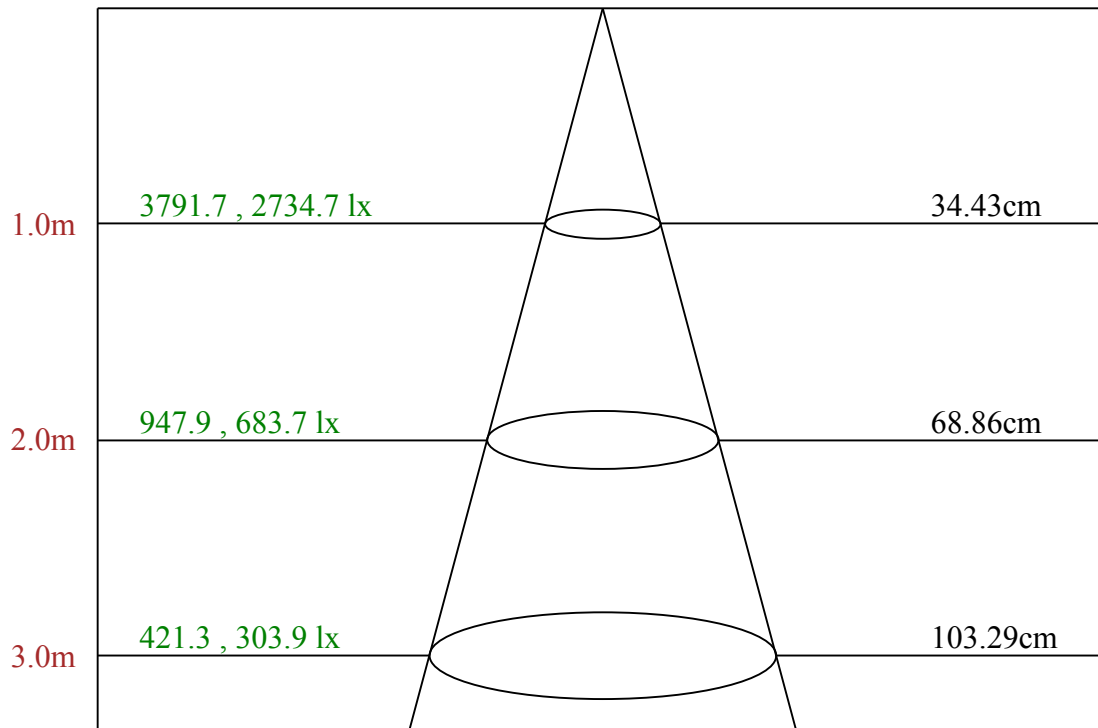
Equipment: equipamento lumini
Temperature(°C): 25.5

Date: 26/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90

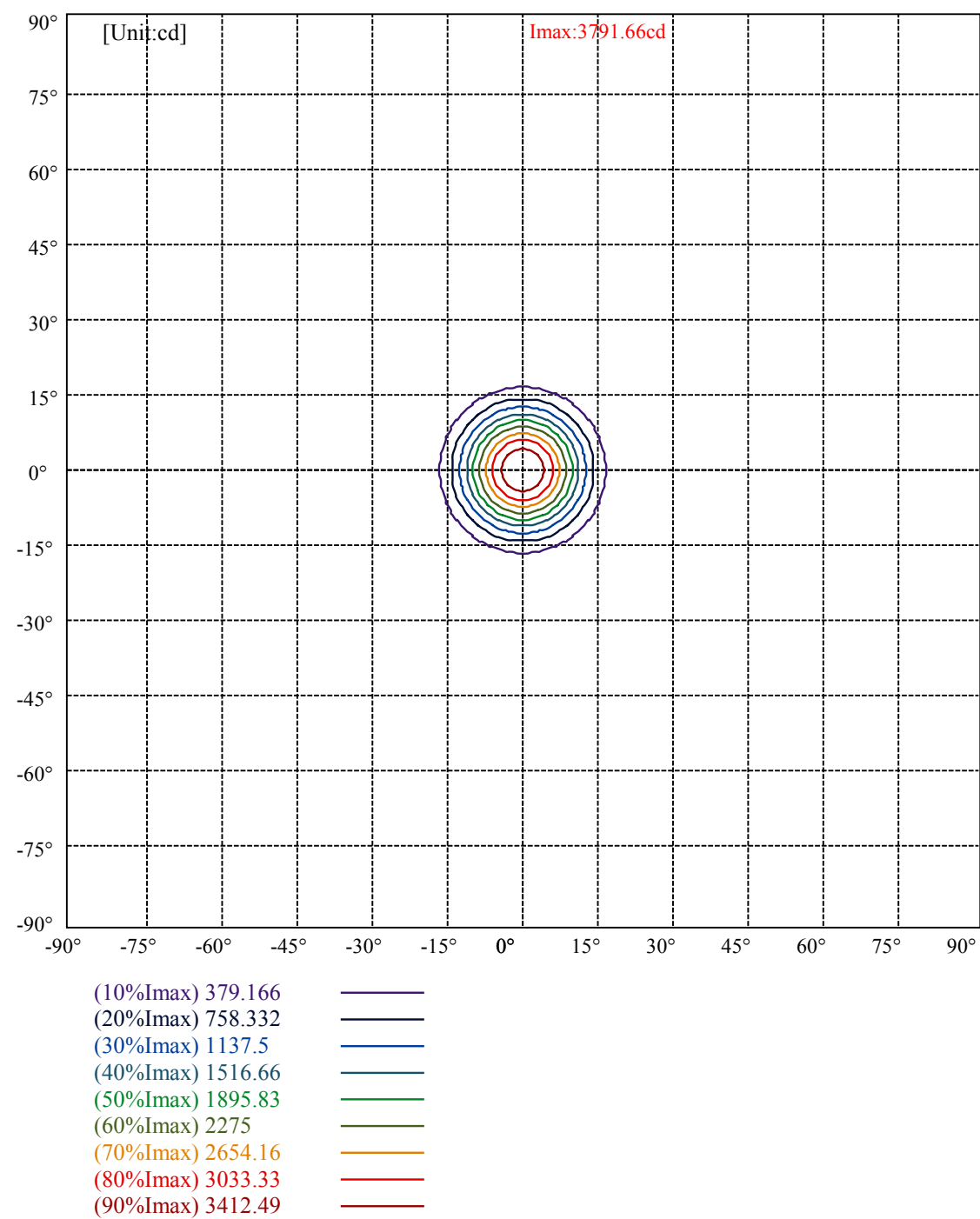


C0(Max):
C0/C180:
C90/C270:



Max , Ave

Beam angle of C0 plane 19.53



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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	2398	1842	1579	1603	1810	2179	2858	4243	8519
C45	2398	1842	1579	1603	1810	2179	2858	4243	8519
C90	2398	1842	1579	1603	1810	2179	2858	4243	8519

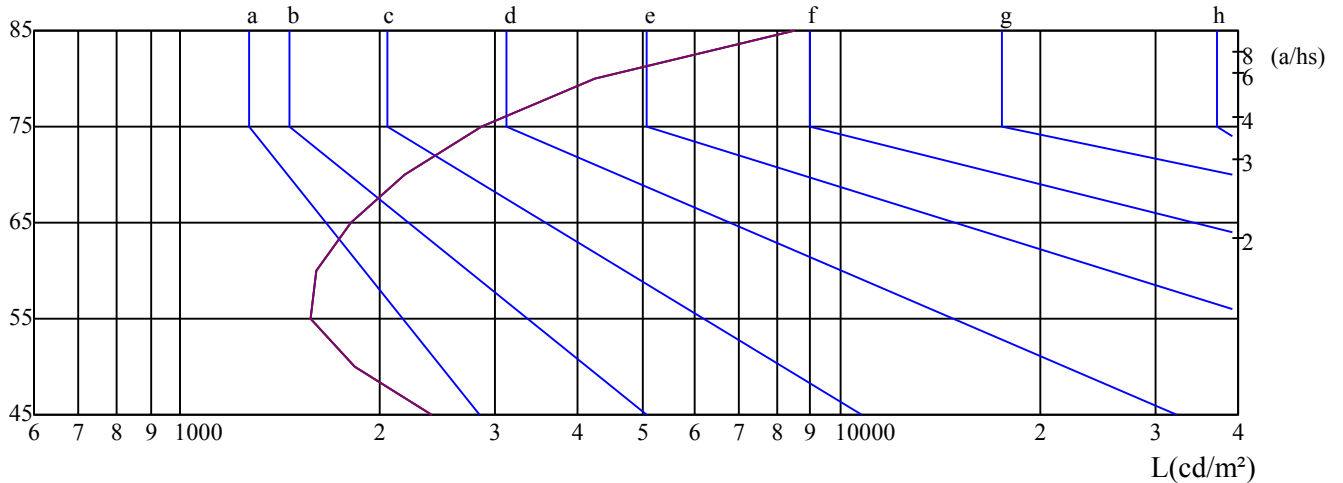
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1810	1810	1810	2858	2858	2858	8519	8519	8519

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

$\gamma(^{\circ})$



C0 ———

C45 ———

C90 ———

Equipment: equipamento lumini
Temperature($^{\circ}$ C): 25.5

Date: 26/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90

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	4.07	4.95	4.47	5.31	5.68	4.60	5.49	5.01	5.85	6.22
	3H	5.82	6.61	6.25	6.99	7.39	6.02	6.81	6.45	7.20	7.60
	4H	7.10	7.83	7.54	8.23	8.66	7.12	7.85	7.57	8.25	8.68
	6H	8.82	9.49	9.28	9.91	10.36	8.64	9.31	9.10	9.73	10.18
	8H	9.84	10.48	10.30	10.91	11.37	9.56	10.20	10.03	10.63	11.09
	12H	11.03	11.64	11.50	12.08	12.55	10.68	11.28	11.15	11.72	12.19
4H	2H	4.50	5.23	4.95	5.63	6.06	4.93	5.67	5.38	6.07	6.49
	3H	6.62	7.24	7.09	7.68	8.15	6.74	7.36	7.21	7.79	8.26
	4H	8.21	8.74	8.69	9.21	9.71	8.17	8.70	8.65	9.17	9.67
	6H	10.14	10.61	10.65	11.10	11.60	9.92	10.39	10.43	10.88	11.39
	8H	11.30	11.74	11.83	12.23	12.76	11.01	11.44	11.53	11.94	12.47
	12H	12.66	13.06	13.19	13.55	14.12	12.29	12.69	12.82	13.19	13.76
8H	4H	8.81	9.24	9.33	9.74	10.26	8.77	9.21	9.30	9.71	10.23
	6H	11.03	11.39	11.58	11.91	12.47	10.84	11.19	11.38	11.71	12.27
	8H	12.44	12.73	13.01	13.29	13.84	12.18	12.47	12.75	13.03	13.58
	12H	14.03	14.25	14.61	14.81	15.38	13.70	13.92	14.28	14.48	15.05
12H	4H	8.99	9.39	9.52	9.88	10.45	8.97	9.37	9.50	9.86	10.43
	6H	11.38	11.67	11.95	12.23	12.78	11.21	11.50	11.78	12.06	12.61
	8H	12.86	13.08	13.44	13.64	14.21	12.63	12.85	13.21	13.41	13.98
Variation with the observer position at spacings:											
S = 1.0H		0.6/-1.1					0.6/-1.1				
S = 1.5H		0.4/-1.2					0.4/-1.2				
S = 2.0H		0.4/-1.1					0.4/-1.1				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-5.8					-5.8				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fm

LampCAT: modulo led 6W 30K irc 90

Ballast type: led driver 180mA

Report No:

Voltage(V): 127.8900

Test No:

Current(A): 0.0650

Number of Lamps: 1

Power (W): 8.1470

Lamp flux(lm): 654.0

PF: 0.9870

Length(mm): 46

Width(mm): 46

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 551.97, Efficiency(%): 84.40% , Luminous Efficacy(lm/W): 67.75

Central intensity(cd): 2982.255, Maximum intensity(cd): 2982.255

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

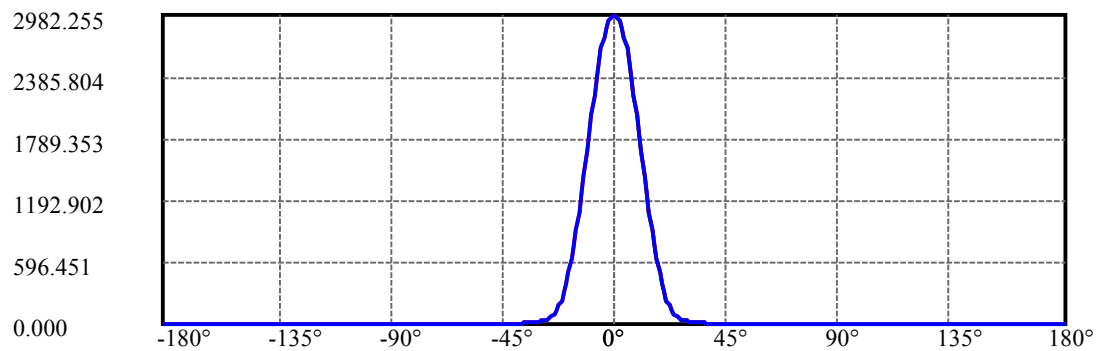
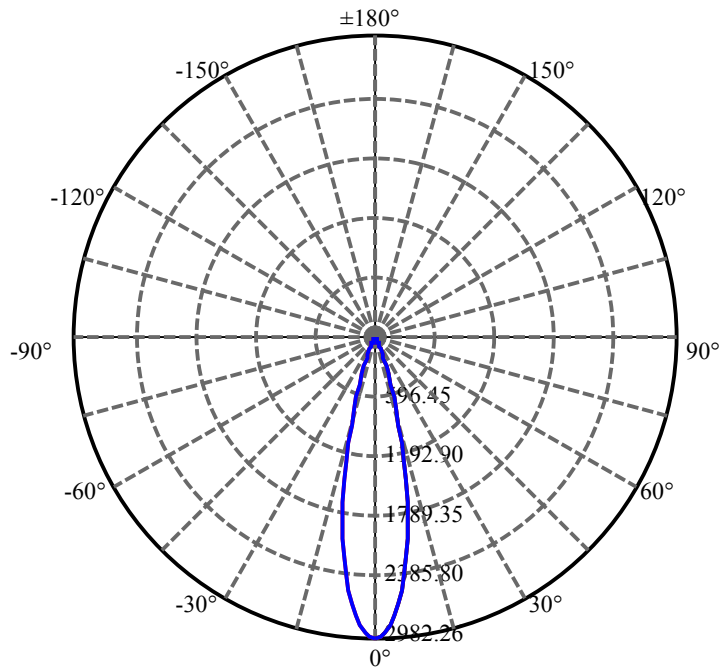
Beam angle of C0 plane : 23.50

Average BeamAngle(IEC 61341): 23.50

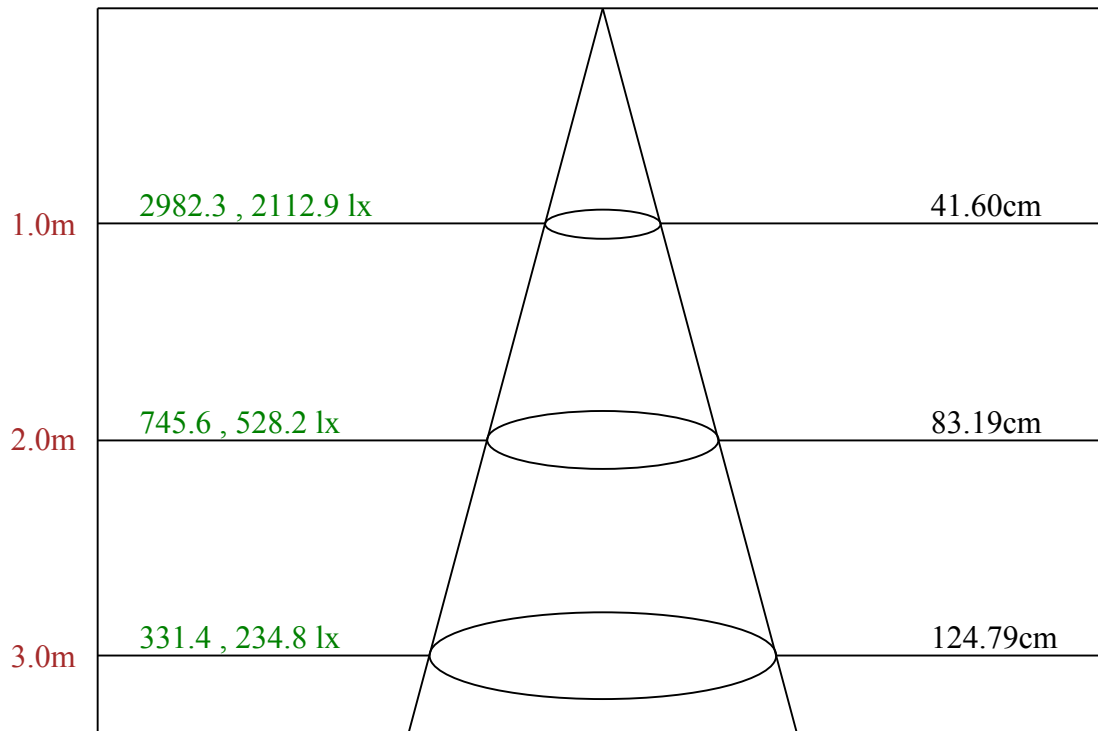
Equipment: equipamento lumini
Temperature(°C): 25.5

Date: 26/05/2025
Humidity(%): 60.0%

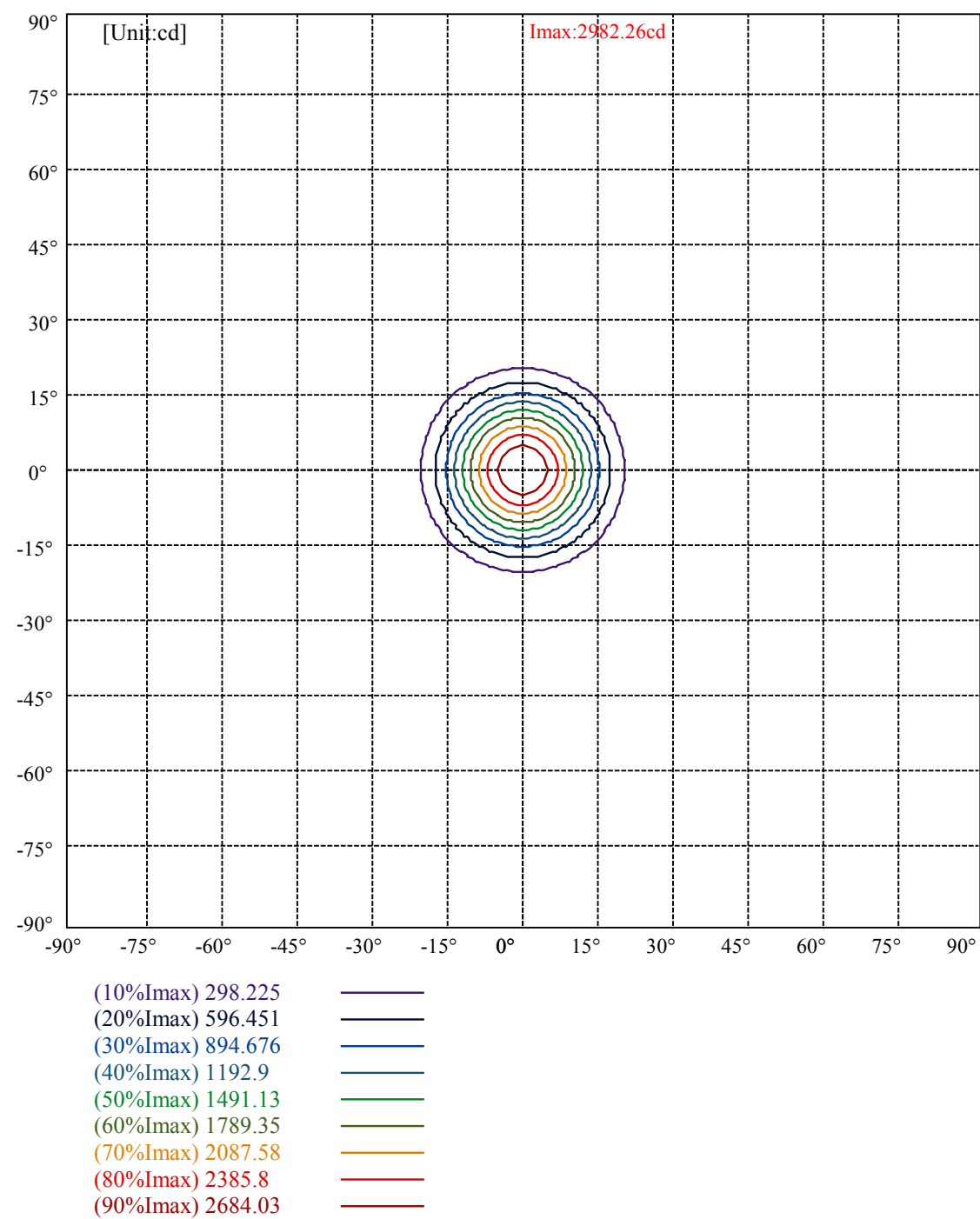
Operator: 01
Distance(m): 6.90



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



Max , Ave Beam angle of C0 plane 23.50



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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

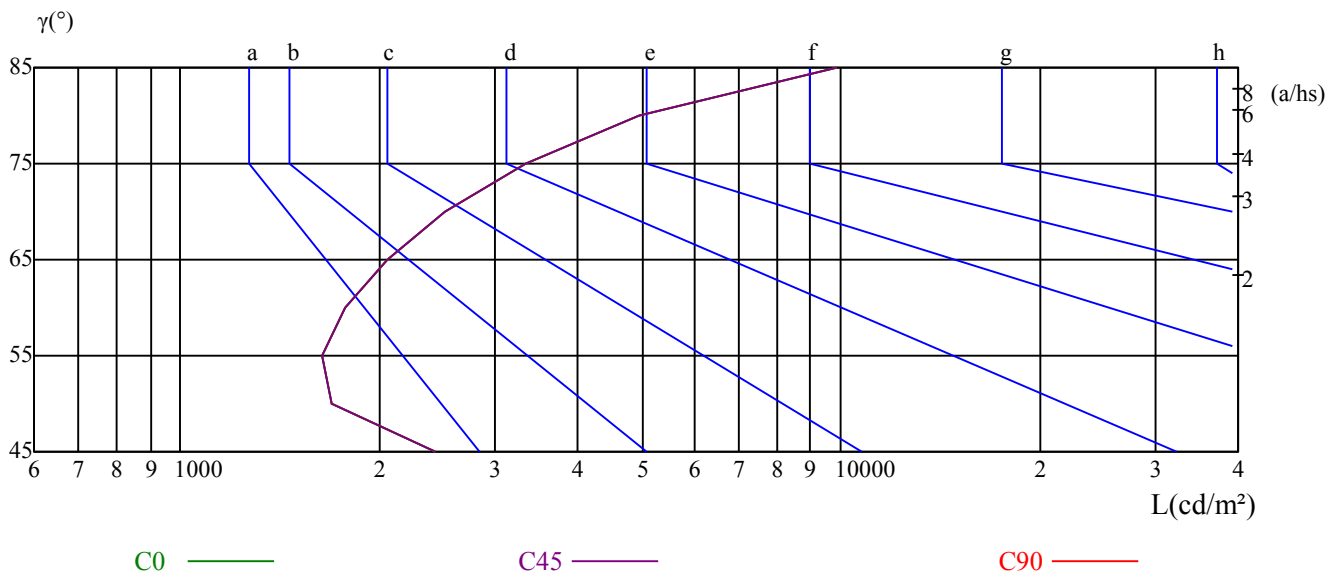
γ	45	50	55	60	65	70	75	80	85
C0	2438	1689	1643	1772	2063	2516	3325	4940	9875
C45	2438	1689	1643	1772	2063	2516	3325	4940	9875
C90	2438	1689	1643	1772	2063	2516	3325	4940	9875

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2063	2063	2063	3325	3325	3325	9875	9875	9875

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	4.76	5.65	5.17	6.01	6.38	4.32	5.21	4.73	5.57	5.94
	3H	6.39	7.18	6.82	7.57	7.97	6.02	6.81	6.45	7.19	7.59
	4H	7.66	8.39	8.10	8.79	9.21	7.26	7.99	7.70	8.39	8.82
	6H	9.35	10.01	9.81	10.44	10.89	8.92	9.58	9.38	10.01	10.46
	8H	10.35	10.99	10.82	11.42	11.88	9.91	10.54	10.37	10.97	11.44
	12H	11.54	12.15	12.01	12.59	13.06	11.12	11.73	11.59	12.17	12.64
4H	2H	5.07	5.80	5.51	6.20	6.62	4.70	5.43	5.15	5.84	6.26
	3H	7.11	7.72	7.58	8.16	8.63	6.80	7.42	7.27	7.86	8.33
	4H	8.70	9.24	9.18	9.70	10.20	8.38	8.91	8.86	9.37	9.88
	6H	10.62	11.09	11.14	11.59	12.09	10.26	10.73	10.77	11.22	11.73
	8H	11.78	12.22	12.31	12.72	13.24	11.39	11.83	11.92	12.33	12.85
	12H	13.14	13.54	13.67	14.04	14.61	12.77	13.17	13.30	13.66	14.23
8H	4H	9.30	9.73	9.82	10.23	10.76	9.04	9.47	9.56	9.97	10.50
	6H	11.51	11.87	12.06	12.39	12.95	11.22	11.57	11.76	12.09	12.65
	8H	12.91	13.20	13.48	13.77	14.31	12.59	12.88	13.16	13.44	13.99
	12H	14.50	14.73	15.08	15.28	15.85	14.19	14.41	14.77	14.97	15.54
12H	4H	9.48	9.88	10.01	10.37	10.94	9.25	9.65	9.78	10.14	10.71
	6H	11.85	12.14	12.42	12.70	13.25	11.59	11.88	12.16	12.44	12.99
	8H	13.33	13.55	13.91	14.10	14.68	13.04	13.27	13.62	13.82	14.39
Variation with the observer position at spacings:											
S = 1.0H		1.1/-1.2					1.1/-1.2				
S = 1.5H		1.0/-1.4					1.0/-1.4				
S = 2.0H		1.0/-1.2					1.0/-1.2				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-5.2					-5.2				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fa

LampCAT: modulo led 6W 30K irc 90

Ballast type: led driver 180mA

Report No:

Voltage(V): 127.8900

Test No:

Current(A): 0.0650

Number of Lamps: 1

Power (W): 8.1460

Lamp flux(lm): 654.0

PF: 0.9870

Length(mm): 46

Width(mm): 46

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 492.77, Efficiency(%): 75.35% , Luminous Efficacy(lm/W): 60.49

Central intensity(cd): 621.358, Maximum intensity(cd): 621.358

Angle of maximum intensity: C=0.0 γ =0.0

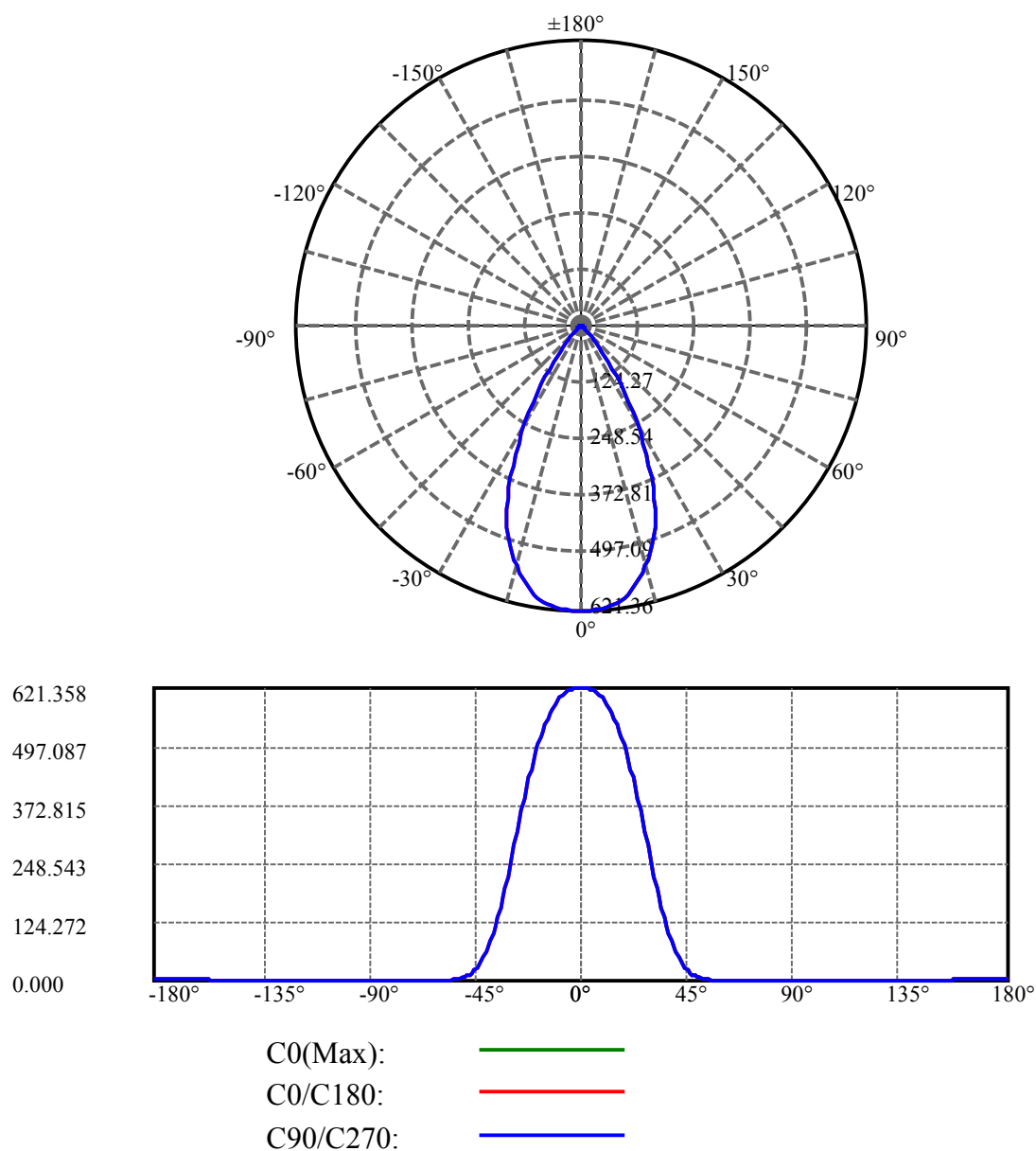
Beam angle of C0 plane : 54.37

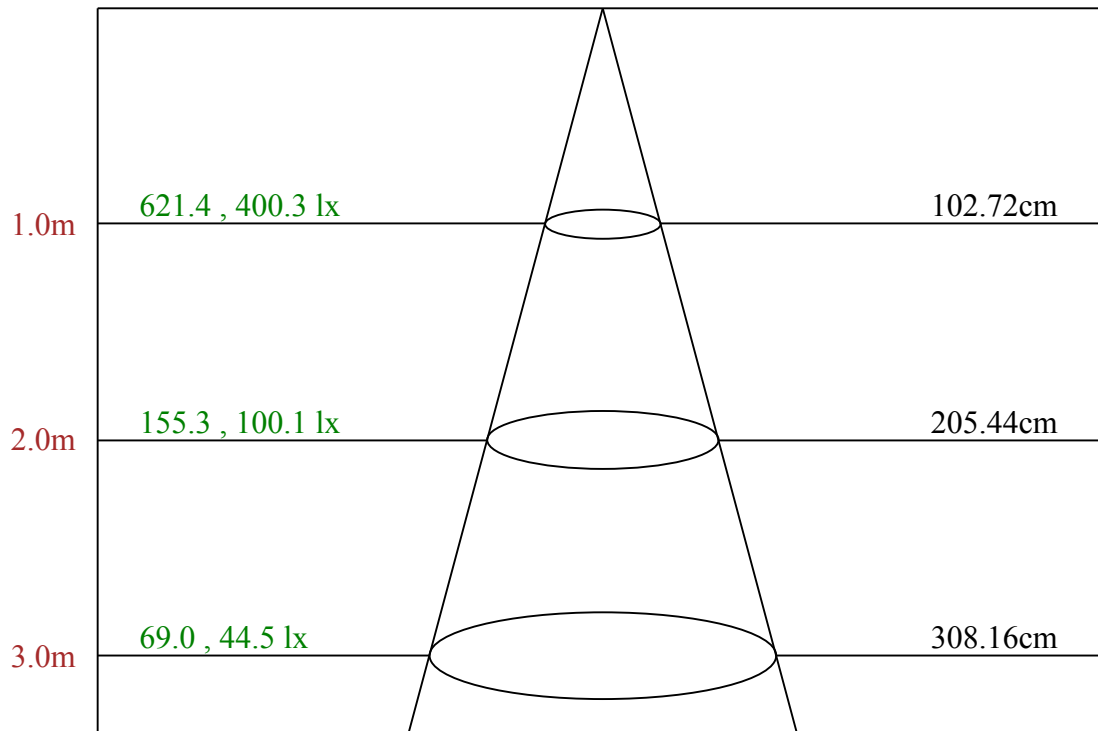
Aveage BeamAngle(IEC 61341):54.37

Equipment: equipamento lumini
Temperature(°C): 25.5

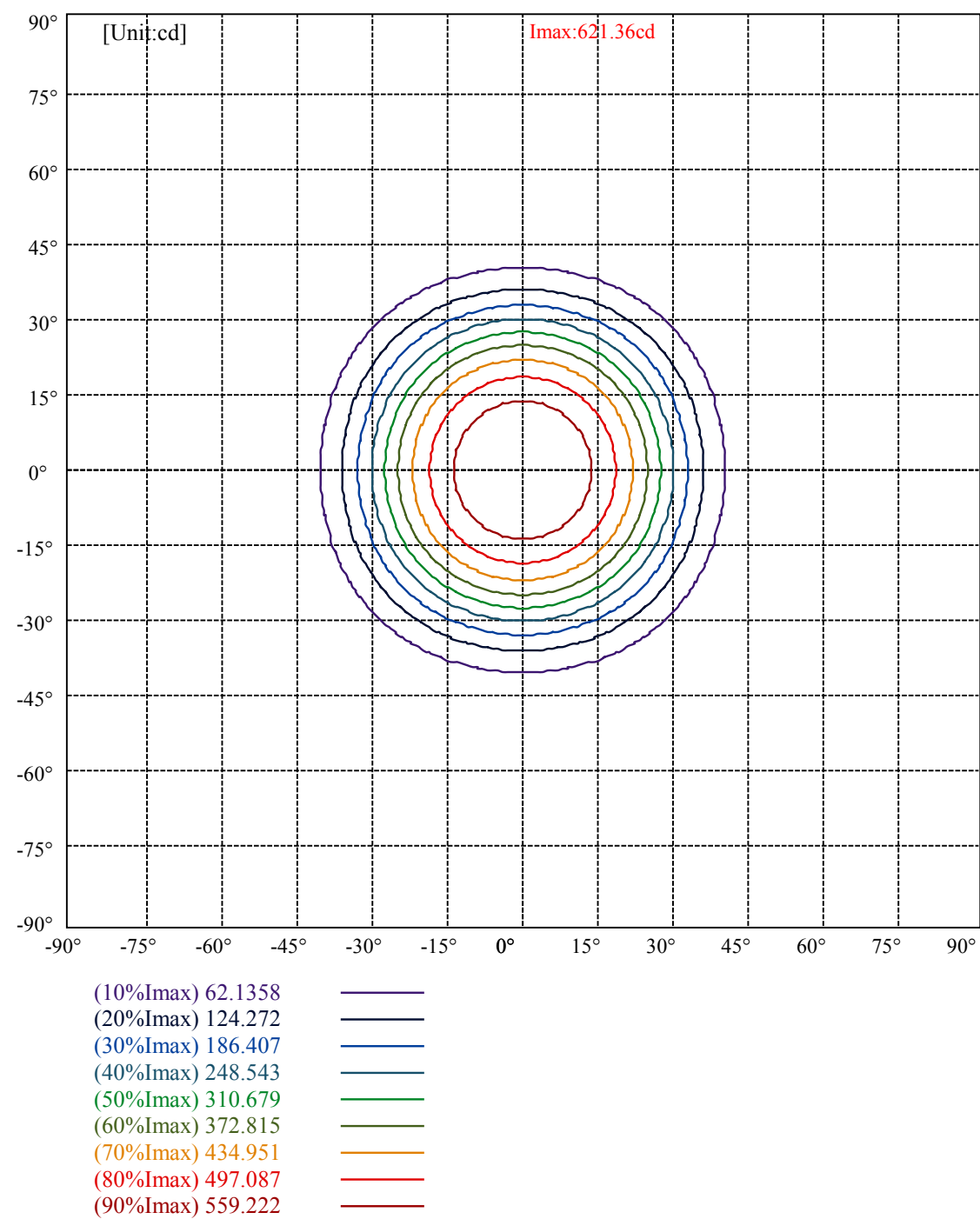
Date: 26/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 54.37



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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	14303	4822	1535	1271	1431	1752	2304	3401	6809
C45	14303	4822	1535	1271	1431	1752	2304	3401	6809
C90	14303	4822	1535	1271	1431	1752	2304	3401	6809

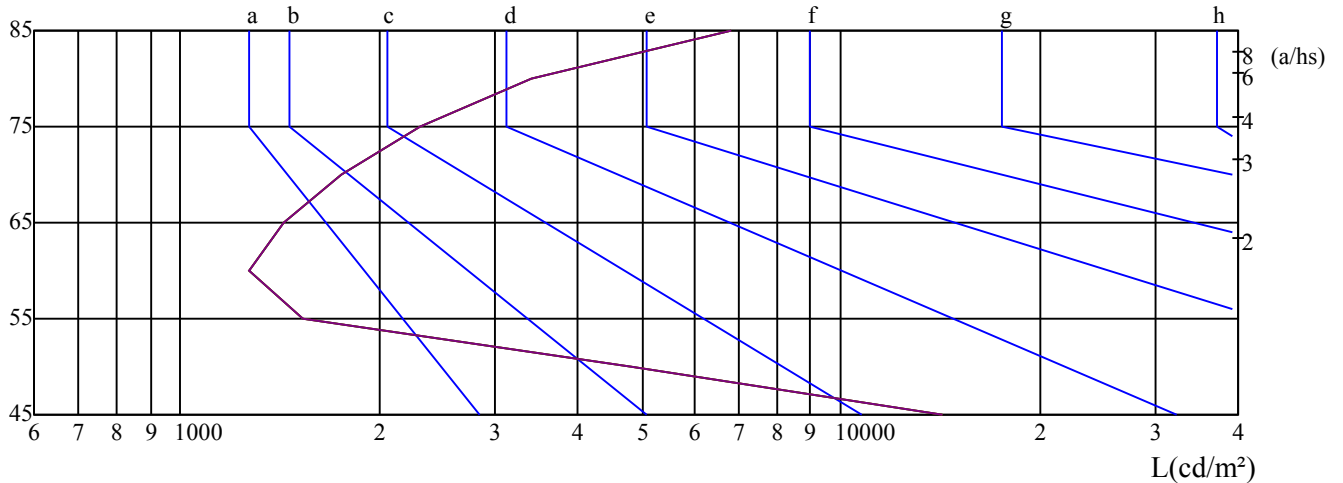
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1431	1431	1431	2304	2304	2304	6809	6809	6809

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

$\gamma(^{\circ})$



C0 ———

C45 ———

C90 ———

Equipment: equipamento lumini
Temperature($^{\circ}$ C): 25.5

Date: 26/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90

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	19.12	20.05	19.52	20.40	20.77	19.75	20.68	20.15	21.03	21.40
	3H	18.92	19.75	19.35	20.13	20.52	19.55	20.38	19.98	20.76	21.15
	4H	18.84	19.60	19.27	20.00	20.41	19.46	20.23	19.90	20.62	21.04
	6H	18.79	19.49	19.24	19.90	20.35	19.41	20.11	19.86	20.52	20.97
	8H	18.75	19.42	19.21	19.84	20.29	19.36	20.03	19.82	20.45	20.91
	12H	18.74	19.37	19.20	19.81	20.27	19.35	19.98	19.81	20.41	20.87
4H	2H	18.80	19.57	19.24	19.96	20.38	19.43	20.20	19.87	20.59	21.01
	3H	18.58	19.22	19.04	19.65	20.12	19.21	19.85	19.67	20.28	20.74
	4H	18.54	19.09	19.01	19.55	20.04	19.16	19.71	19.63	20.17	20.66
	6H	18.47	18.96	18.98	19.44	19.94	19.08	19.56	19.58	20.05	20.55
	8H	18.48	18.93	19.00	19.42	19.94	19.08	19.53	19.60	20.02	20.54
	12H	18.54	18.96	19.07	19.45	20.01	19.13	19.54	19.65	20.03	20.59
8H	4H	18.35	18.80	18.87	19.30	19.82	18.97	19.42	19.49	19.91	20.43
	6H	18.31	18.68	18.85	19.19	19.75	18.91	19.28	19.45	19.79	20.35
	8H	18.41	18.72	18.98	19.27	19.81	18.99	19.30	19.56	19.85	20.39
	12H	18.55	18.79	19.13	19.34	19.91	19.11	19.35	19.68	19.90	20.46
12H	4H	18.31	18.72	18.83	19.21	19.77	18.92	19.34	19.44	19.82	20.39
	6H	18.32	18.63	18.89	19.18	19.72	18.91	19.22	19.48	19.78	20.32
	8H	18.40	18.64	18.98	19.19	19.76	18.98	19.21	19.55	19.76	20.33
Variation with the observer position at spacings:											
S = 1.0H		5.2/-11.9					5.2/-11.9				
S = 1.5H		7.9/-9.7					7.9/-9.7				
S = 2.0H		9.7/-8.3					9.7/-8.3				
Standard tables:		BK1					BK1				
Uncorrected UGR		-0.3					-0.3				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fc

LampCAT: modulo led 12W 30K irc 90

Ballast type: led driver 350mA

Report No:

Voltage(V): 127.7800

Test No:

Current(A): 0.1160

Number of Lamps: 1

Power (W): 14.6010

Lamp flux(lm): 1185.0

PF: 0.9860

Length(mm): 46

Width(mm): 46

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 881.77, Efficiency(%): 74.41% , Luminous Efficacy(lm/W): 60.39

Central intensity(cd): 7305.183, Maximum intensity(cd): 7305.183

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

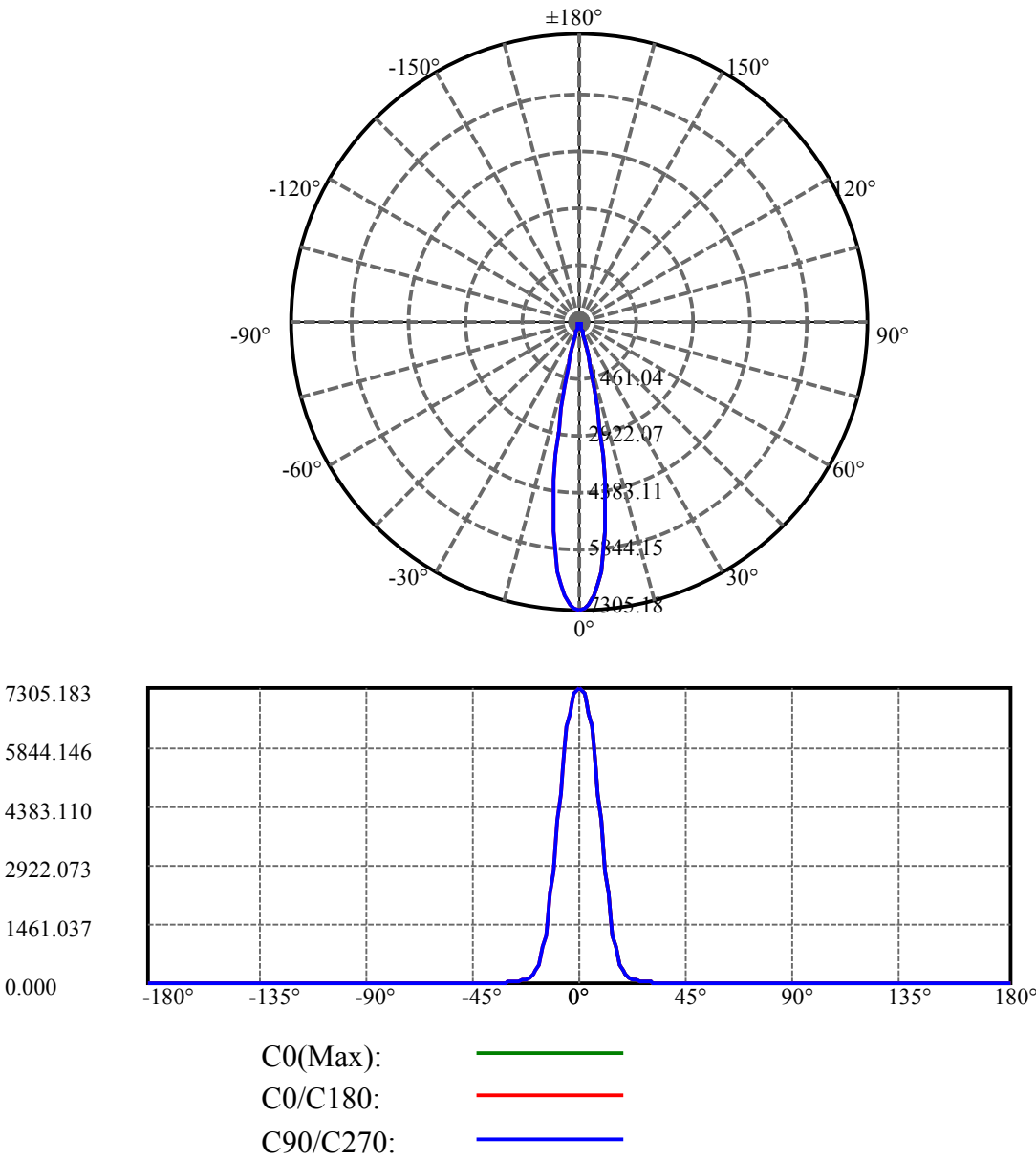
Beam angle of C0 plane : 19.23

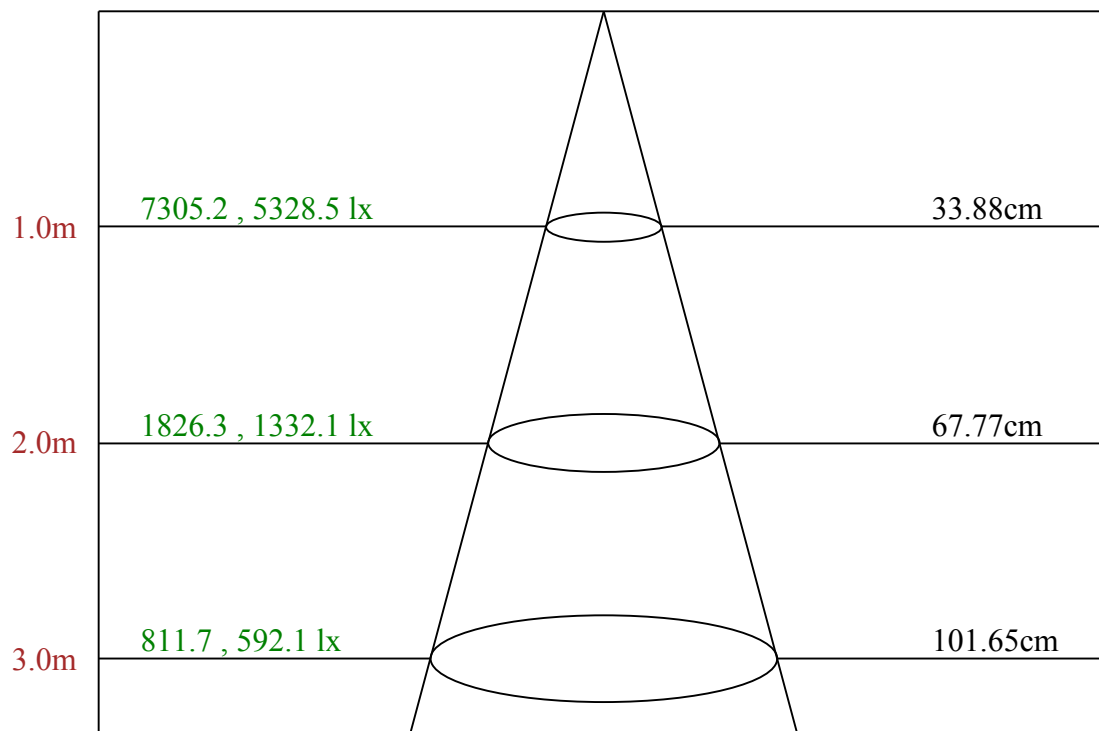
Average BeamAngle(IEC 61341): 19.23

Equipment: equipamento lumini
Temperature(°C): 25.5

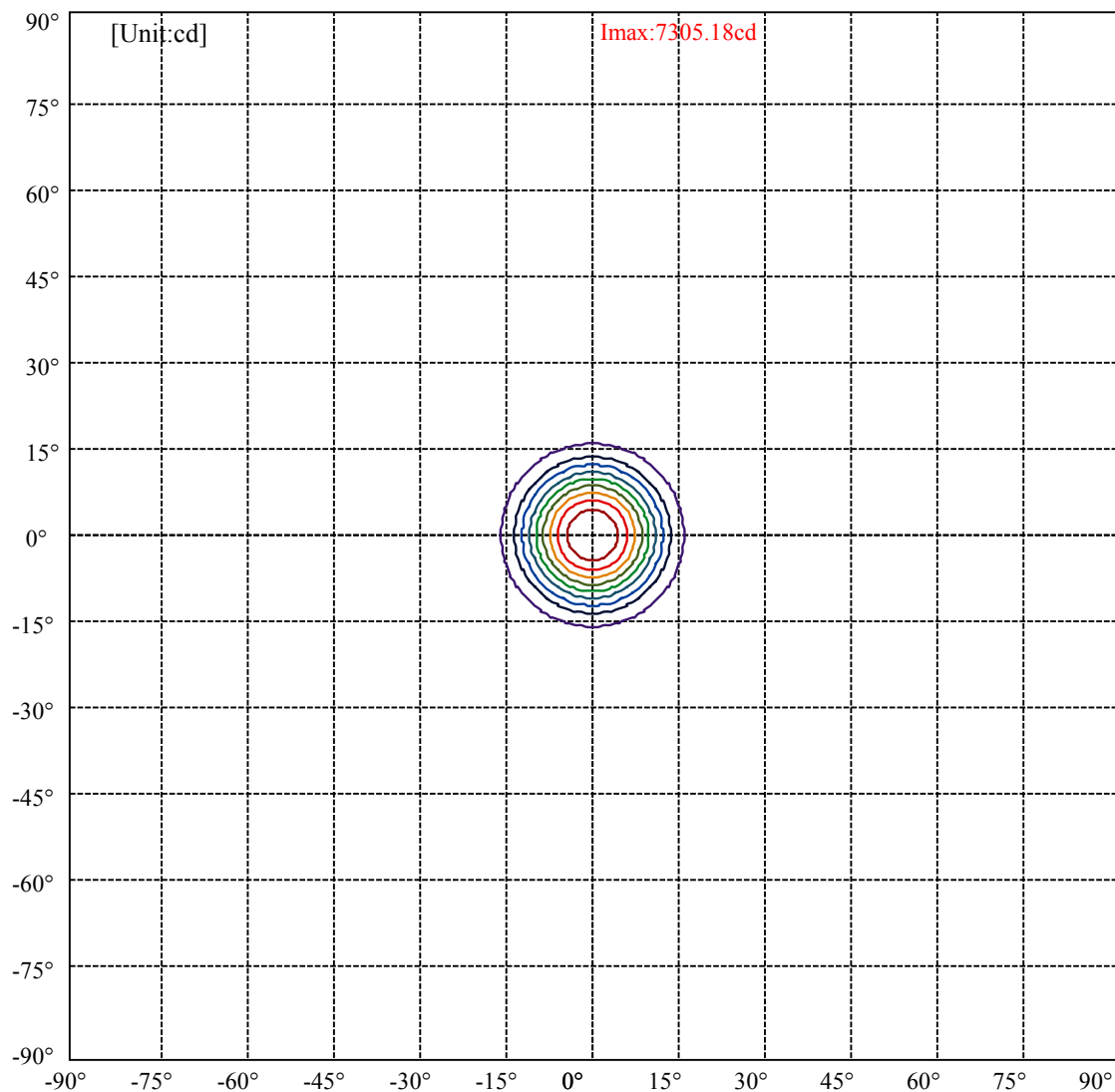
Date: 27/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 19.23



(10%Imax) 730.518	—
(20%Imax) 1461.04	—
(30%Imax) 2191.55	—
(40%Imax) 2922.07	—
(50%Imax) 3652.59	—
(60%Imax) 4383.11	—
(70%Imax) 5113.63	—
(80%Imax) 5844.15	—
(90%Imax) 6574.66	—

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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	4236	3251	2780	2835	3214	3931	5151	7677	15231
C45	4236	3251	2780	2835	3214	3931	5151	7677	15231
C90	4236	3251	2780	2835	3214	3931	5151	7677	15231

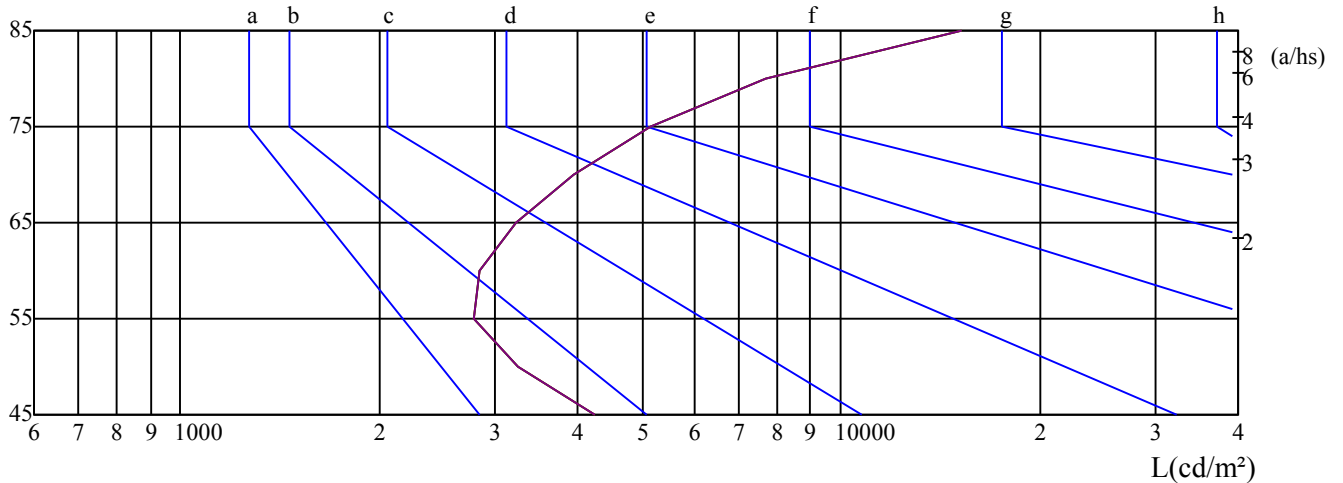
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3214	3214	3214	5151	5151	5151	15231	15231	15231

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

$\gamma(^{\circ})$



C0 ———

C45 ———

C90 ———

Equipment: equipamento lumini
Temperature($^{\circ}$ C): 25.5

Date: 27/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90

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	5.78	6.67	6.19	7.03	7.40	5.72	6.60	6.12	6.96	7.33
	3H	7.65	8.44	8.08	8.83	9.23	7.42	8.21	7.85	8.59	8.99
	4H	9.00	9.74	9.45	10.13	10.56	8.69	9.42	9.13	9.82	10.24
	6H	10.77	11.43	11.23	11.85	12.31	10.37	11.03	10.83	11.46	11.91
	8H	11.81	12.45	12.28	12.88	13.34	11.38	12.01	11.84	12.44	12.90
	12H	13.03	13.64	13.50	14.07	14.55	12.56	13.16	13.03	13.60	14.07
4H	2H	6.20	6.93	6.64	7.33	7.75	6.14	6.87	6.58	7.27	7.69
	3H	8.44	9.06	8.91	9.50	9.97	8.23	8.85	8.70	9.29	9.76
	4H	10.10	10.64	10.58	11.10	11.60	9.82	10.35	10.30	10.82	11.32
	6H	12.07	12.54	12.58	13.03	13.54	11.71	12.18	12.22	12.67	13.18
	8H	13.27	13.70	13.79	14.20	14.73	12.87	13.31	13.40	13.80	14.33
	12H	14.65	15.04	15.17	15.54	16.11	14.21	14.61	14.73	15.10	15.67
8H	4H	10.70	11.13	11.22	11.63	12.15	10.47	10.91	11.00	11.41	11.93
	6H	12.96	13.31	13.50	13.83	14.39	12.66	13.02	13.21	13.53	14.10
	8H	14.39	14.69	14.96	15.25	15.79	14.06	14.36	14.63	14.92	15.46
	12H	15.99	16.22	16.57	16.77	17.34	15.61	15.84	16.19	16.39	16.96
12H	4H	10.88	11.28	11.41	11.77	12.34	10.69	11.08	11.21	11.58	12.15
	6H	13.30	13.60	13.87	14.16	14.70	13.04	13.33	13.61	13.89	14.44
	8H	14.80	15.03	15.38	15.58	16.15	14.51	14.73	15.09	15.29	15.86
Variation with the observer position at spacings:											
S = 1.0H		0.5/-1.1					0.5/-1.1				
S = 1.5H		0.4/-1.3					0.4/-1.3				
S = 2.0H		0.3/-1.1					0.3/-1.1				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-3.8					-3.8				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fm

LampCAT: modulo led 12W 30K irc 90

Ballast type: led driver 350mA

Report No:

Voltage(V): 127.7800

Test No:

Current(A): 0.1160

Number of Lamps: 1

Power (W): 14.6030

Lamp flux(lm): 1185.0

PF: 0.9860

Length(mm): 46

Width(mm): 46

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1010.87, Efficiency(%): 85.31% , Luminous Efficacy(lm/W): 69.22

Central intensity(cd): 5365.993, Maximum intensity(cd): 5365.993

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

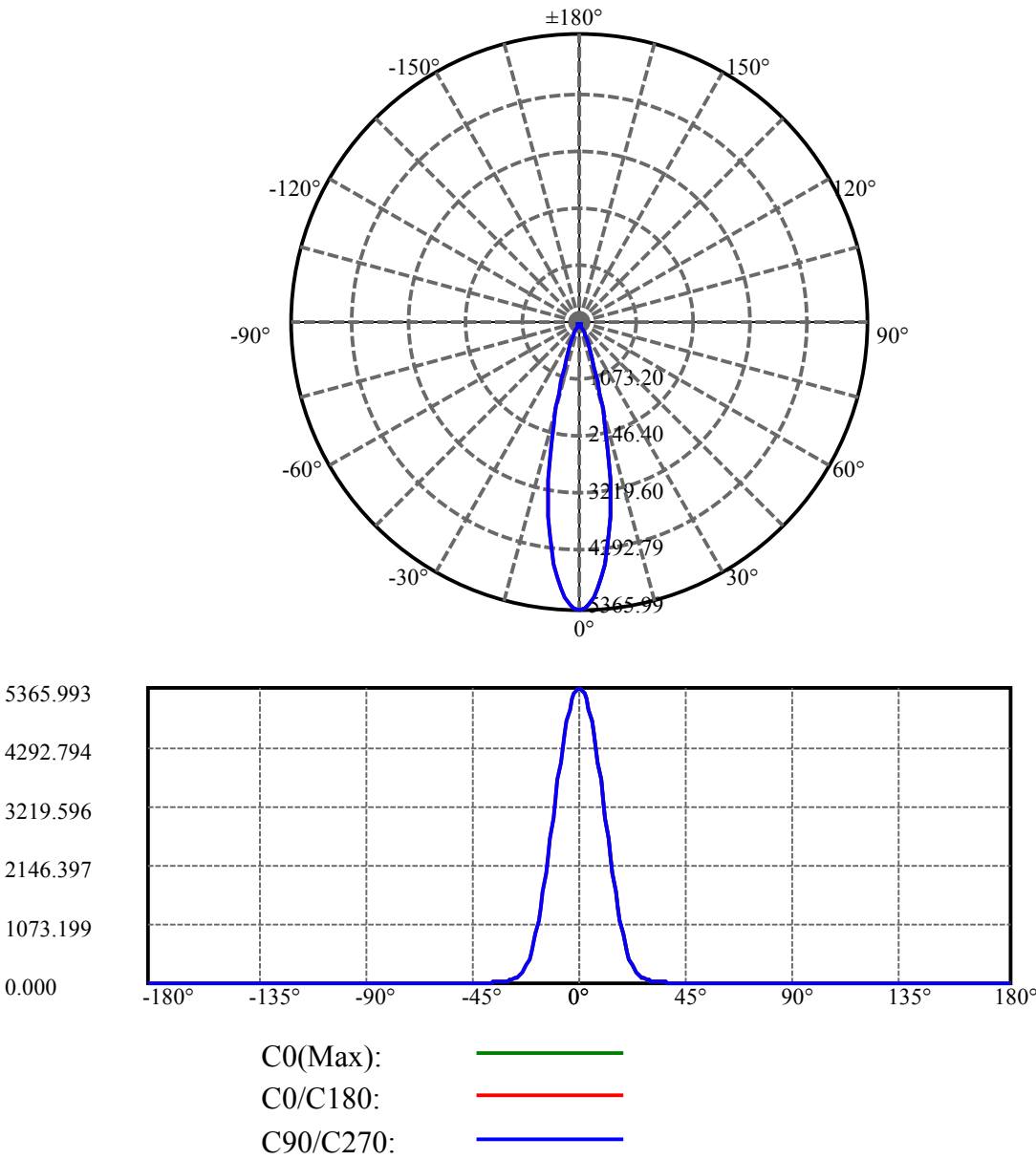
Beam angle of C0 plane : 23.67

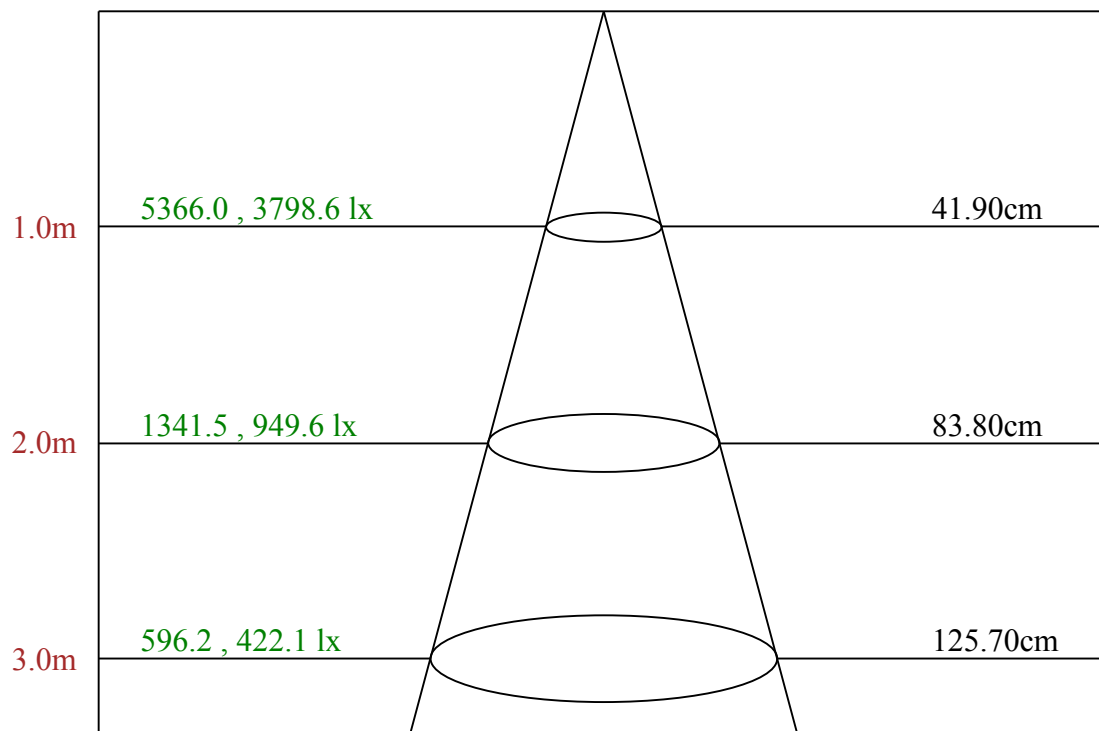
Average BeamAngle(IEC 61341): 23.67

Equipment: equipamento lumini
Temperature(°C): 25.5

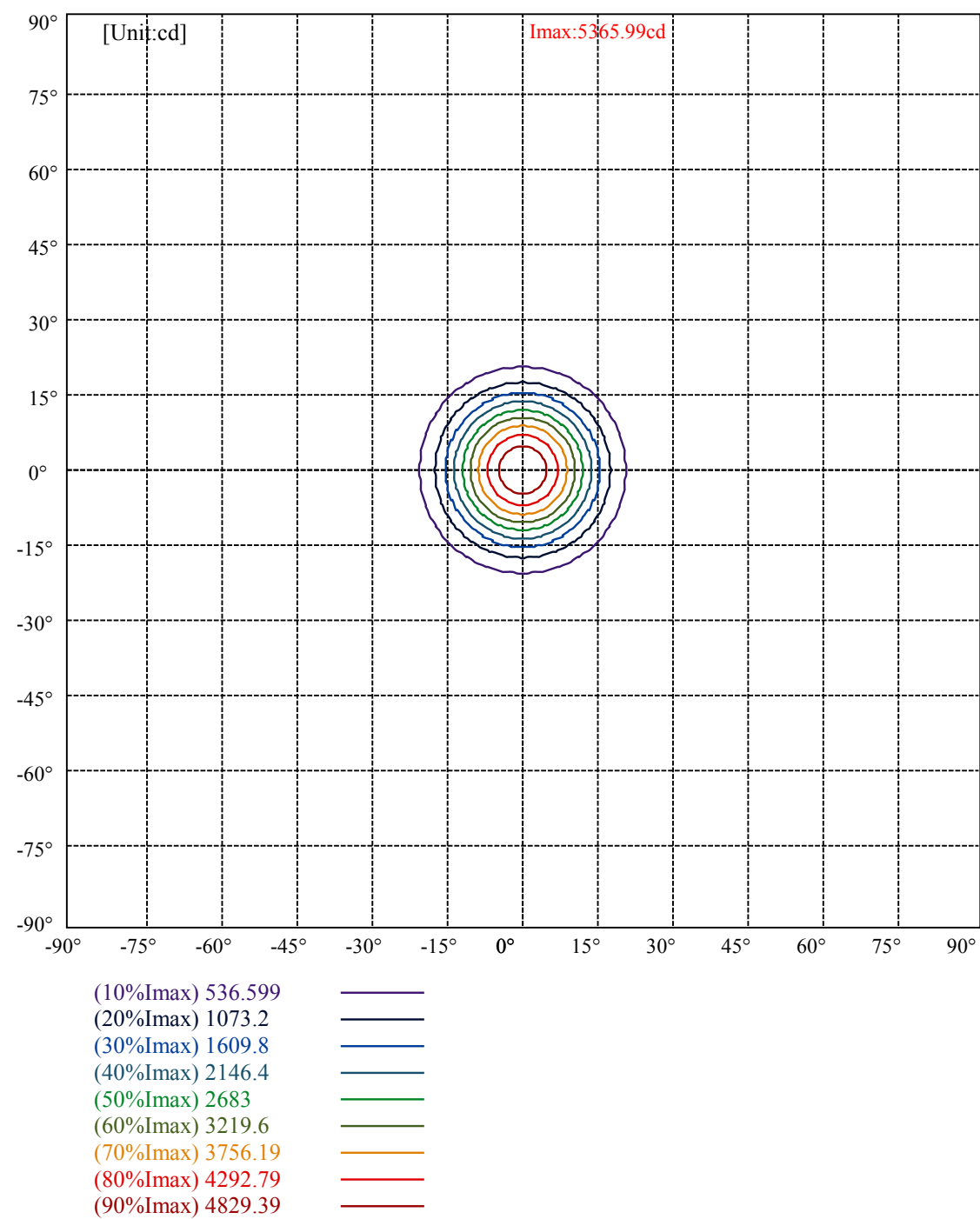
Date: 27/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 23.67



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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	4487	3063	3016	3268	3807	4654	6172	9167	18200
C45	4487	3063	3016	3268	3807	4654	6172	9167	18200
C90	4487	3063	3016	3268	3807	4654	6172	9167	18200

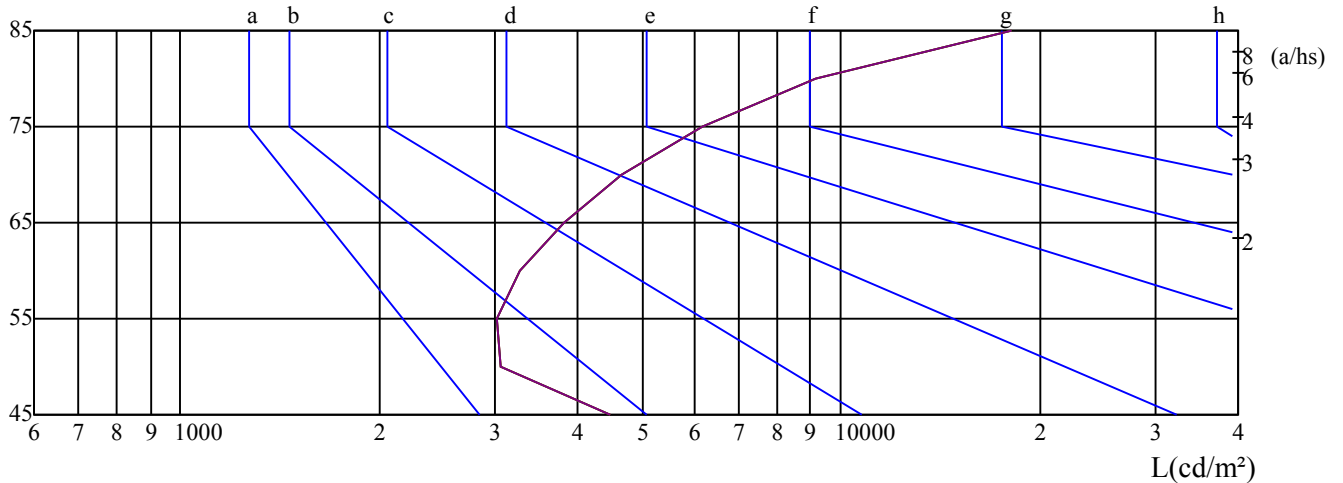
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3807	3807	3807	6172	6172	6172	18200	18200	18200

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

$\gamma(^{\circ})$



C0 ———

C45 ———

C90 ———

Equipment: equipamento lumini
Temperature($^{\circ}$ C): 25.5

Date: 27/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90

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	6.63	7.52	7.04	7.88	8.25	6.60	7.49	7.01	7.85	8.22
	3H	8.33	9.12	8.76	9.50	9.90	8.29	9.07	8.72	9.46	9.86
	4H	9.61	10.34	10.05	10.74	11.16	9.56	10.29	10.01	10.69	11.12
	6H	11.30	11.97	11.76	12.39	12.85	11.22	11.89	11.69	12.31	12.77
	8H	12.32	12.96	12.79	13.39	13.85	12.23	12.87	12.70	13.30	13.76
	12H	13.50	14.10	13.97	14.54	15.01	13.37	13.98	13.84	14.42	14.89
4H	2H	6.99	7.72	7.44	8.12	8.55	6.97	7.70	7.41	8.10	8.52
	3H	9.09	9.70	9.56	10.14	10.62	9.06	9.67	9.52	10.11	10.58
	4H	10.69	11.22	11.17	11.69	12.19	10.65	11.19	11.13	11.65	12.15
	6H	12.61	13.08	13.13	13.58	14.08	12.54	13.01	13.06	13.51	14.01
	8H	13.78	14.22	14.31	14.72	15.24	13.70	14.13	14.23	14.63	15.16
	12H	15.12	15.52	15.65	16.01	16.58	15.00	15.40	15.53	15.89	16.47
8H	4H	11.31	11.75	11.84	12.25	12.77	11.28	11.71	11.81	12.21	12.74
	6H	13.53	13.89	14.08	14.40	14.97	13.47	13.83	14.02	14.35	14.91
	8H	14.94	15.23	15.51	15.80	16.34	14.87	15.16	15.44	15.72	16.27
	12H	16.50	16.72	17.08	17.28	17.85	16.39	16.62	16.98	17.17	17.75
12H	4H	11.51	11.91	12.04	12.40	12.97	11.48	11.88	12.01	12.37	12.94
	6H	13.89	14.18	14.46	14.74	15.29	13.84	14.13	14.41	14.69	15.24
	8H	15.37	15.59	15.95	16.15	16.72	15.30	15.53	15.88	16.08	16.65
Variation with the observer position at spacings:											
S = 1.0H		1.1/-1.3					1.1/-1.3				
S = 1.5H		1.0/-1.4					1.0/-1.4				
S = 2.0H		1.0/-1.2					1.0/-1.2				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-3.0					-3.0				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fa

LampCAT: modulo led 12W 30K irc 90

Ballast type: led driver 350mA

Report No:

Voltage(V): 127.7900

Test No:

Current(A): 0.1160

Number of Lamps: 1

Power (W): 14.5970

Lamp flux(lm): 1185.0

PF: 0.9860

Length(mm): 46

Width(mm): 46

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 906.53, Efficiency(%): 76.50% , Luminous Efficacy(lm/W): 62.10

Central intensity(cd): 1150.186, Maximum intensity(cd): 1150.186

Angle of maximum intensity: C=0.0 γ =0.0

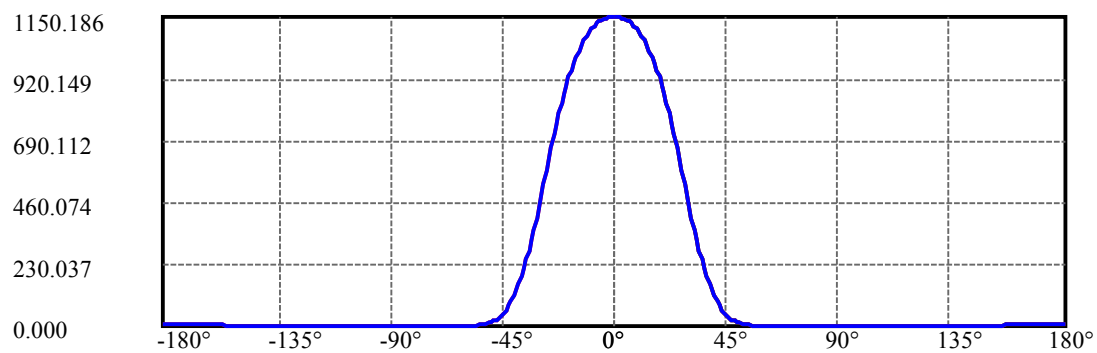
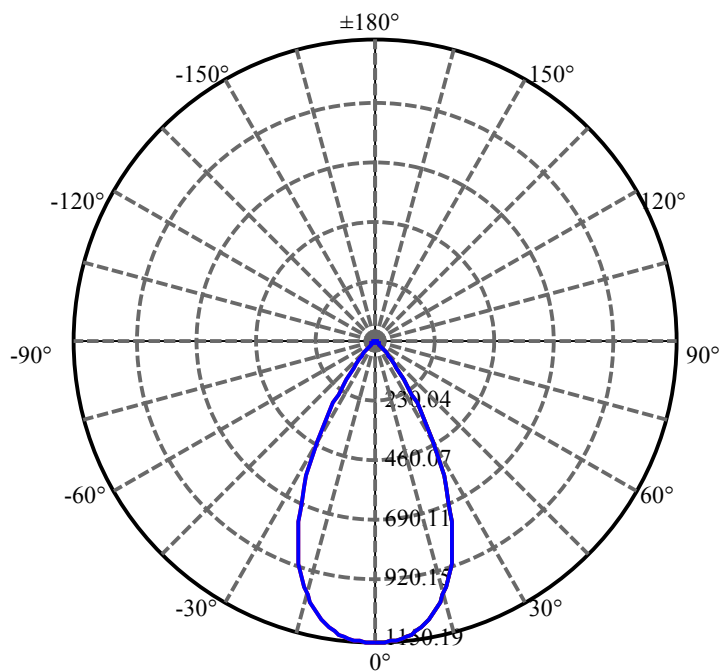
Beam angle of C0 plane : 54.08

Aveage BeamAngle(IEC 61341):54.08

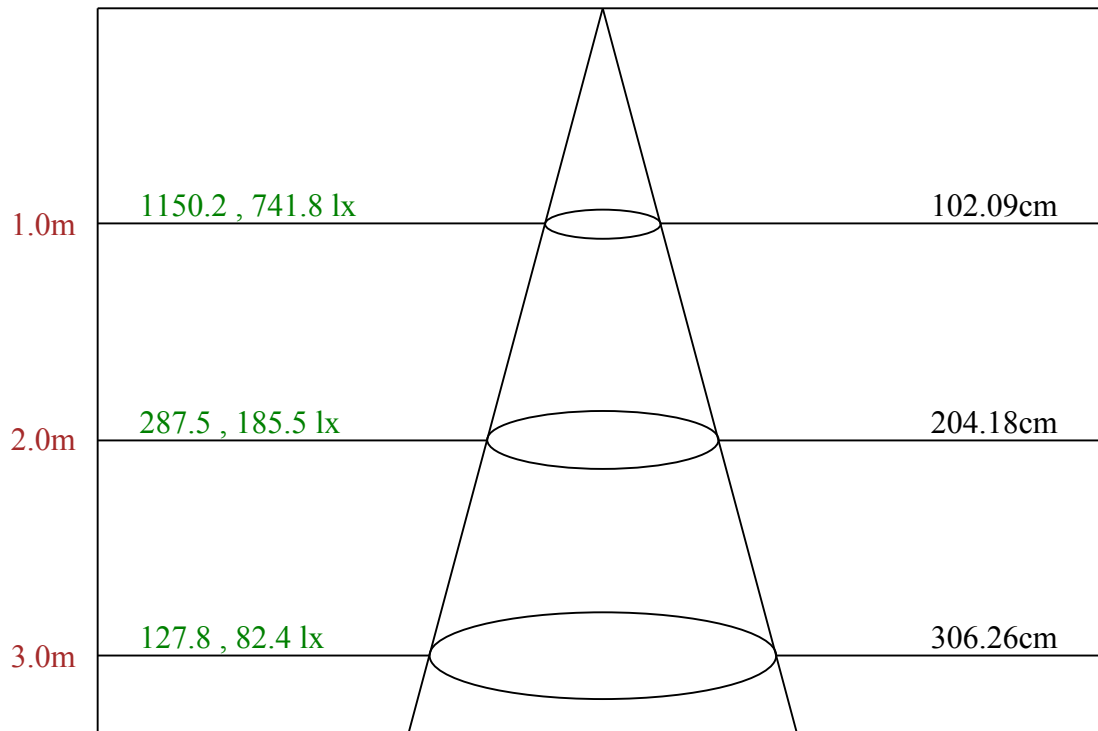
Equipment: equipamento lumini
Temperature(°C): 25.5

Date: 27/05/2025
Humidity(%): 60.0%

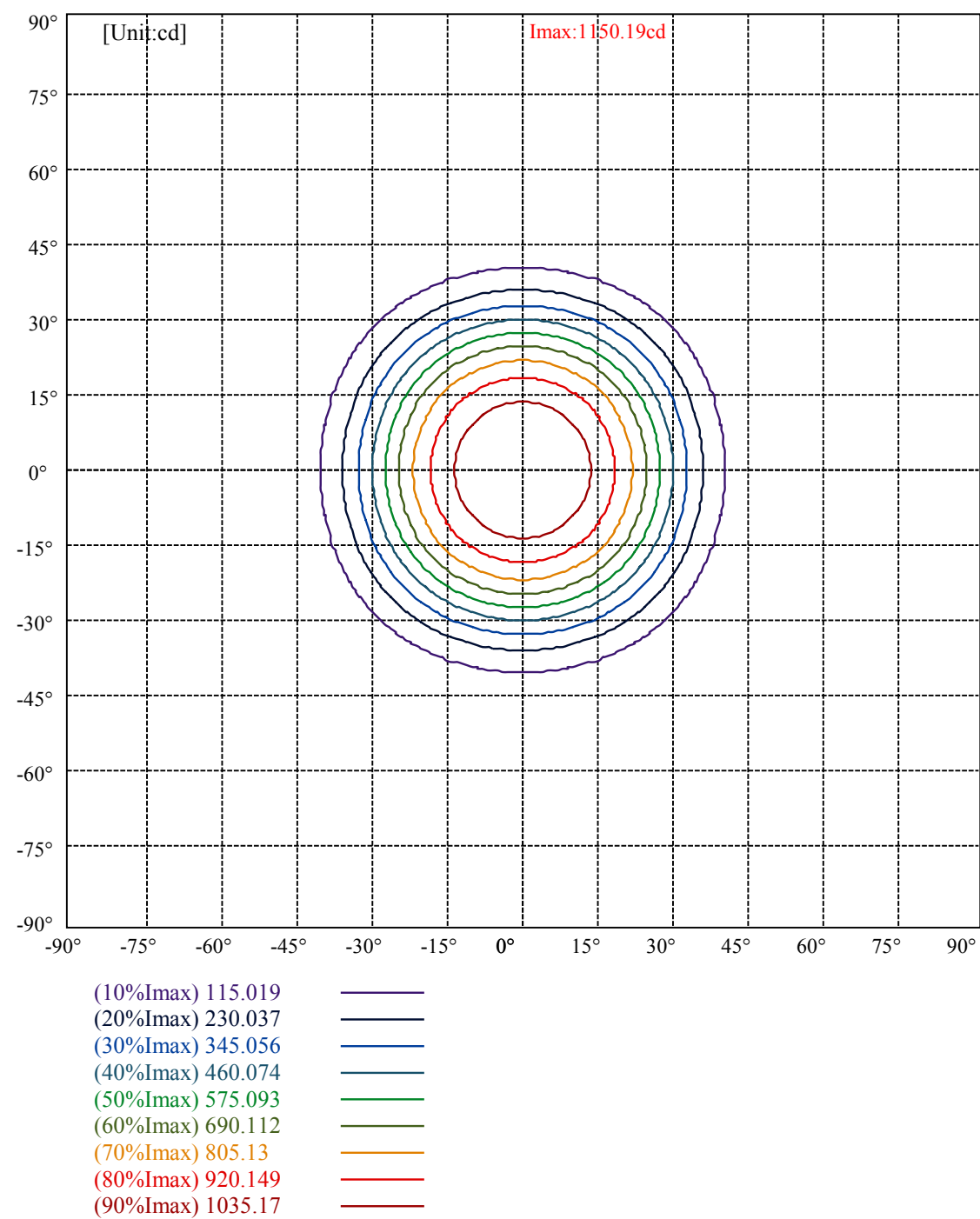
Operator: 01
Distance(m): 6.90



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



Max , Ave Beam angle of C0 plane 54.08



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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	26140	8563	2913	2363	2695	3281	4303	6398	12553
C45	26140	8563	2913	2363	2695	3281	4303	6398	12553
C90	26140	8563	2913	2363	2695	3281	4303	6398	12553

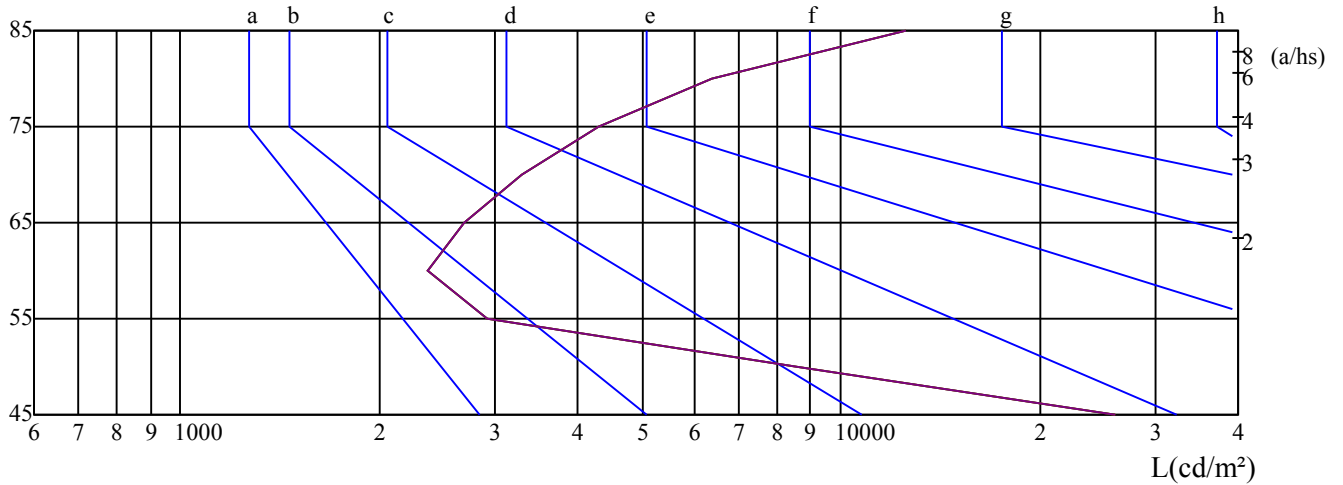
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2695	2695	2695	4303	4303	4303	12553	12553	12553

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

$\gamma(^{\circ})$



C0 ———

C45 ———

C90 ———

Equipment: equipamento lumini
Temperature($^{\circ}$ C): 25.5

Date: 27/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90

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	21.99	22.92	22.39	23.27	23.63	22.03	22.96	22.43	23.31	23.68
	3H	21.79	22.61	22.21	22.99	23.39	21.83	22.66	22.26	23.04	23.43
	4H	21.70	22.46	22.13	22.86	23.27	21.74	22.51	22.18	22.90	23.32
	6H	21.64	22.34	22.09	22.75	23.20	21.69	22.39	22.14	22.80	23.25
	8H	21.59	22.26	22.05	22.69	23.14	21.64	22.31	22.10	22.74	23.19
	12H	21.57	22.20	22.04	22.64	23.10	21.63	22.26	22.09	22.69	23.15
4H	2H	21.67	22.43	22.11	22.83	23.24	21.71	22.48	22.15	22.87	23.29
	3H	21.44	22.08	21.90	22.51	22.98	21.49	22.13	21.95	22.56	23.02
	4H	21.39	21.94	21.86	22.40	22.90	21.44	21.99	21.91	22.45	22.94
	6H	21.31	21.79	21.81	22.28	22.78	21.36	21.84	21.86	22.33	22.83
	8H	21.31	21.76	21.82	22.25	22.77	21.36	21.81	21.88	22.30	22.82
	12H	21.35	21.76	21.87	22.25	22.81	21.40	21.82	21.93	22.31	22.87
8H	4H	21.20	21.65	21.72	22.15	22.67	21.25	21.70	21.77	22.19	22.71
	6H	21.14	21.51	21.68	22.02	22.58	21.19	21.56	21.73	22.07	22.63
	8H	21.22	21.53	21.78	22.08	22.62	21.27	21.58	21.84	22.14	22.68
	12H	21.32	21.56	21.90	22.11	22.68	21.38	21.62	21.96	22.17	22.74
12H	4H	21.16	21.57	21.68	22.06	22.62	21.20	21.62	21.73	22.11	22.67
	6H	21.14	21.45	21.71	22.01	22.55	21.19	21.50	21.76	22.06	22.60
	8H	21.20	21.44	21.78	21.99	22.56	21.26	21.49	21.83	22.05	22.61
Variation with the observer position at spacings:											
S = 1.0H		5.2/-11.8					5.2/-11.8				
S = 1.5H		7.8/-9.6					7.8/-9.6				
S = 2.0H		9.6/-8.1					9.6/-8.1				
Standard tables:		BK1					BK1				
Uncorrected UGR		1.8					1.8				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fc

LampCAT: modulo led 18W 30K irc 90

Ballast type: led driver 500mA

Report No:

Voltage(V): 127.7100

Test No:

Current(A): 0.1760

Number of Lamps: 1

Power (W): 22.3240

Lamp flux(lm): 1585.0

PF: 0.9910

Length(mm): 54

Width(mm): 54

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1116.35, Efficiency(%): 70.43% , Luminous Efficacy(lm/W): 50.01

Central intensity(cd): 13122.960, Maximum intensity(cd): 13122.960

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

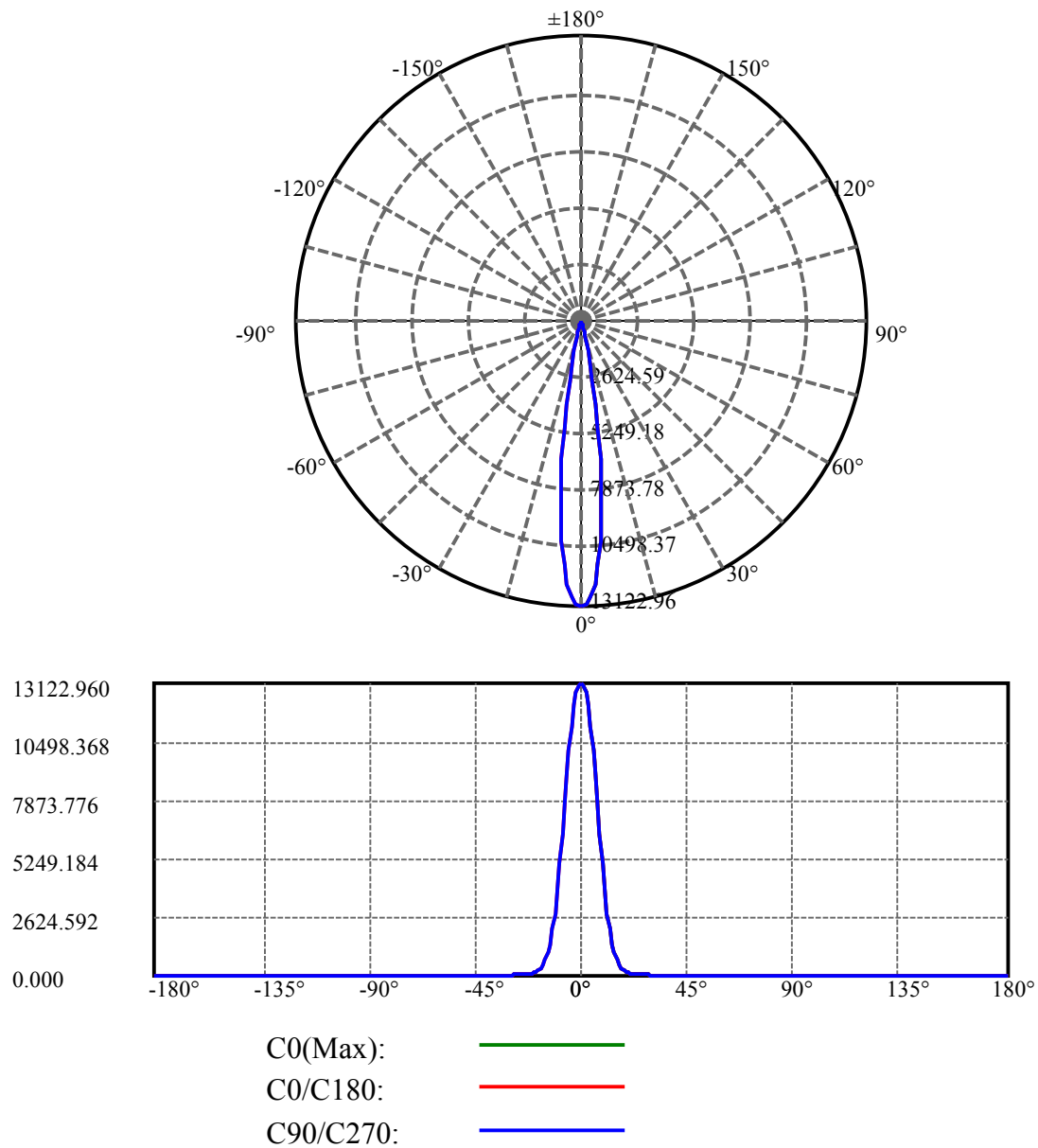
Beam angle of C0 plane : 15.73

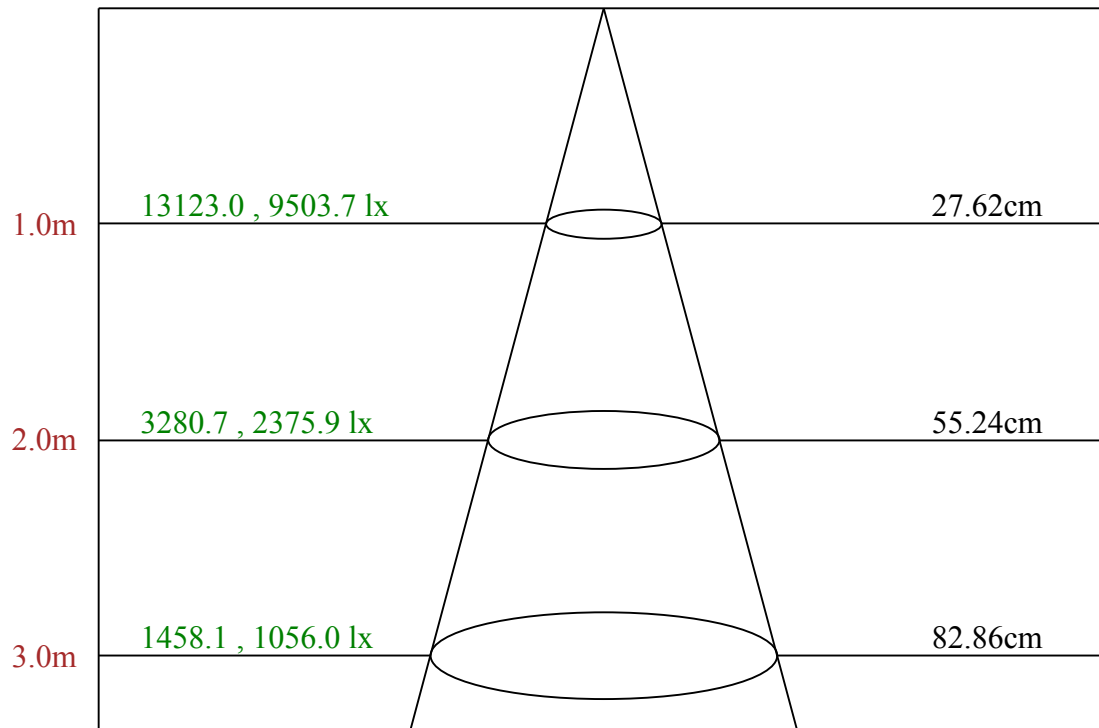
Average BeamAngle(IEC 61341): 15.73

Equipment: equipamento lumini
Temperature(°C): 25.5

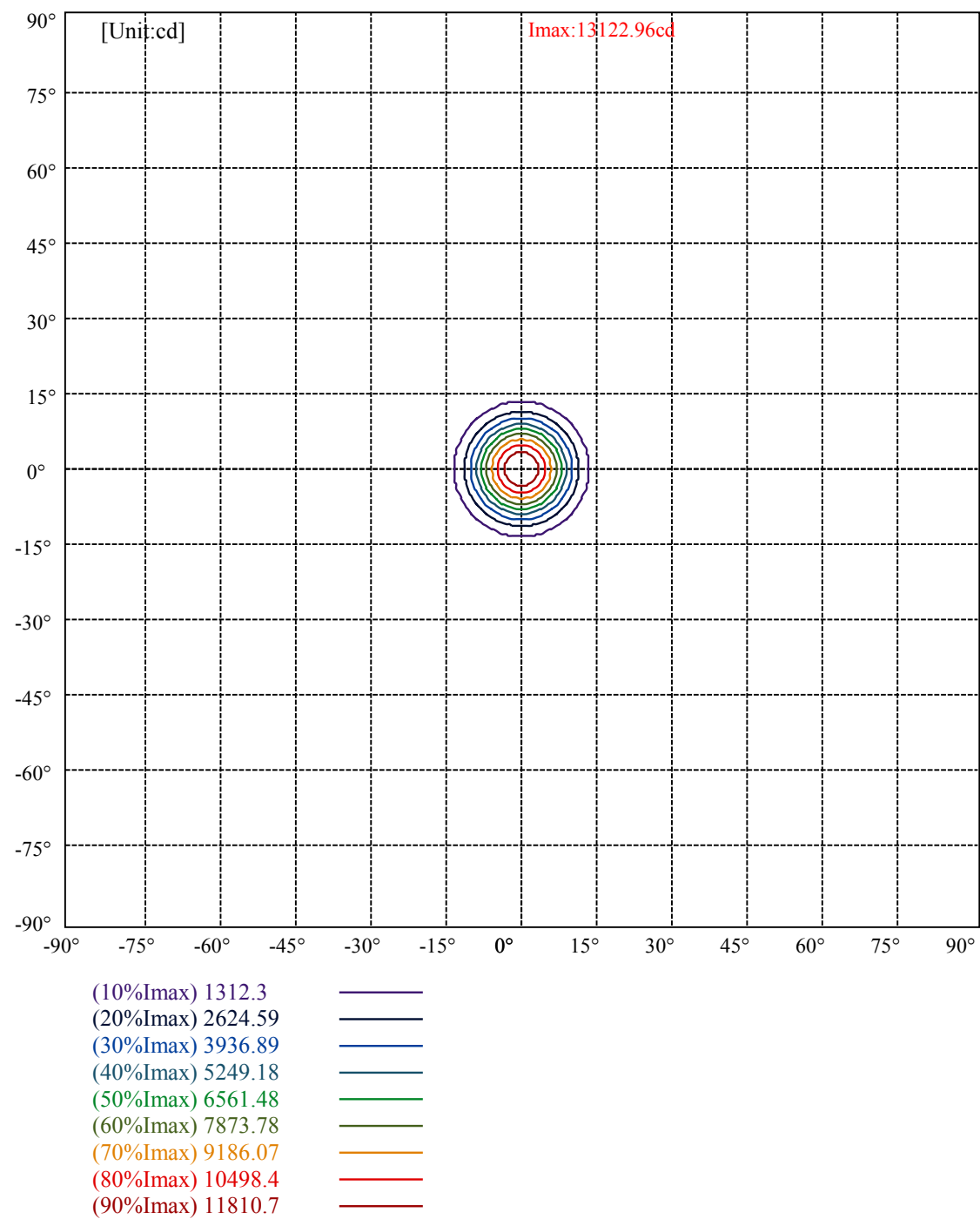
Date: 28/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 15.73



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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	4096	3146	3000	2702	2936	3580	4700	7005	13886
C45	4096	3146	3000	2702	2936	3580	4700	7005	13886
C90	4096	3146	3000	2702	2936	3580	4700	7005	13886

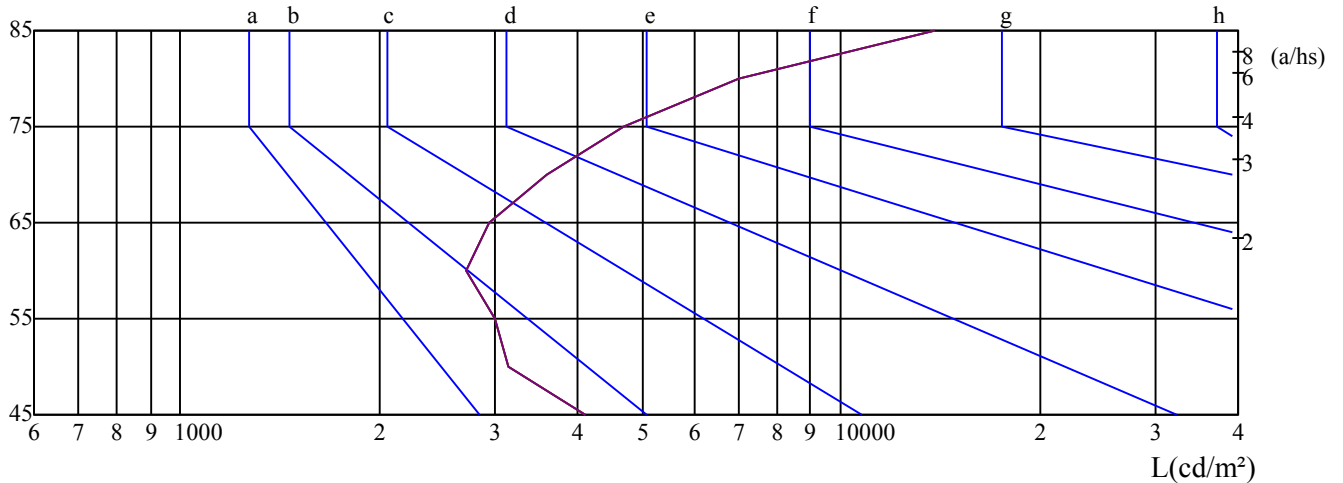
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2936	2936	2936	4700	4700	4700	13886	13886	13886

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

$\gamma(^{\circ})$



C0 ———

C45 ———

C90 ———

Equipment: equipamento lumini
Temperature($^{\circ}$ C): 25.5

Date: 28/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90

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	5.51	6.40	5.92	6.76	7.13	6.18	7.07	6.59	7.43	7.80
	3H	7.20	8.00	7.63	8.38	8.78	7.61	8.40	8.04	8.78	9.18
	4H	8.48	9.21	8.92	9.61	10.03	8.75	9.48	9.19	9.88	10.30
	6H	10.17	10.84	10.63	11.26	11.71	10.32	10.99	10.78	11.41	11.86
	8H	11.18	11.82	11.64	12.25	12.71	11.28	11.91	11.74	12.34	12.80
	12H	12.37	12.97	12.84	13.41	13.88	12.42	13.02	12.88	13.46	13.93
4H	2H	5.97	6.71	6.42	7.11	7.53	6.51	7.24	6.95	7.64	8.06
	3H	8.03	8.64	8.49	9.08	9.55	8.31	8.93	8.78	9.37	9.84
	4H	9.60	10.14	10.08	10.60	11.10	9.78	10.31	10.26	10.78	11.28
	6H	11.50	11.97	12.01	12.46	12.97	11.59	12.06	12.10	12.55	13.05
	8H	12.66	13.09	13.18	13.59	14.12	12.70	13.14	13.23	13.64	14.16
	12H	14.00	14.40	14.53	14.90	15.47	14.01	14.41	14.54	14.90	15.47
8H	4H	10.22	10.65	10.74	11.15	11.67	10.36	10.79	10.88	11.29	11.81
	6H	12.42	12.77	12.96	13.29	13.85	12.48	12.83	13.02	13.35	13.91
	8H	13.82	14.11	14.39	14.67	15.22	13.84	14.13	14.41	14.69	15.24
	12H	15.39	15.61	15.97	16.17	16.74	15.38	15.60	15.96	16.16	16.73
12H	4H	10.41	10.81	10.94	11.30	11.87	10.54	10.94	11.07	11.43	12.00
	6H	12.77	13.07	13.34	13.63	14.17	12.83	13.12	13.40	13.68	14.23
	8H	14.25	14.47	14.83	15.03	15.60	14.27	14.49	14.85	15.05	15.62
Variation with the observer position at spacings:											
S = 1.0H		0.8/-1.2					0.8/-1.2				
S = 1.5H		0.7/-1.3					0.7/-1.3				
S = 2.0H		0.7/-1.1					0.7/-1.1				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-3.9					-3.9				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fm

LampCAT: modulo led 18W 30K irc 90

Ballast type: led driver 500mA

Report No:

Voltage(V): 127.7000

Test No:

Current(A): 0.1770

Number of Lamps: 1

Power (W): 22.3330

Lamp flux(lm): 1585.0

PF: 0.9910

Length(mm): 54

Width(mm): 54

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1259.95, Efficiency(%): 79.49% , Luminous Efficacy(lm/W): 56.42

Central intensity(cd): 7462.201, Maximum intensity(cd): 7462.201

Angle of maximum intensity: C=0.0 γ =0.0

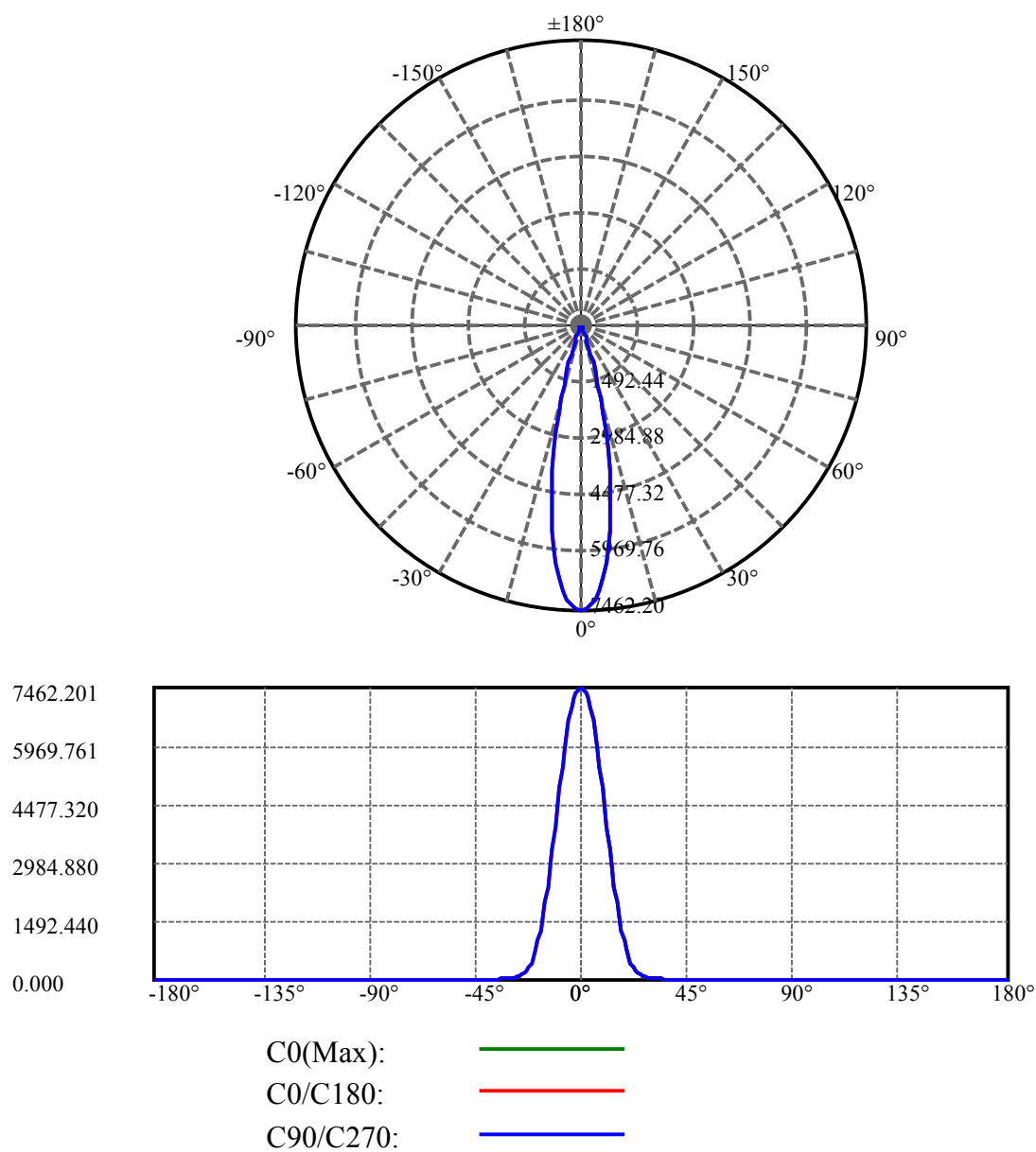
Beam angle of C0 plane : 22.52

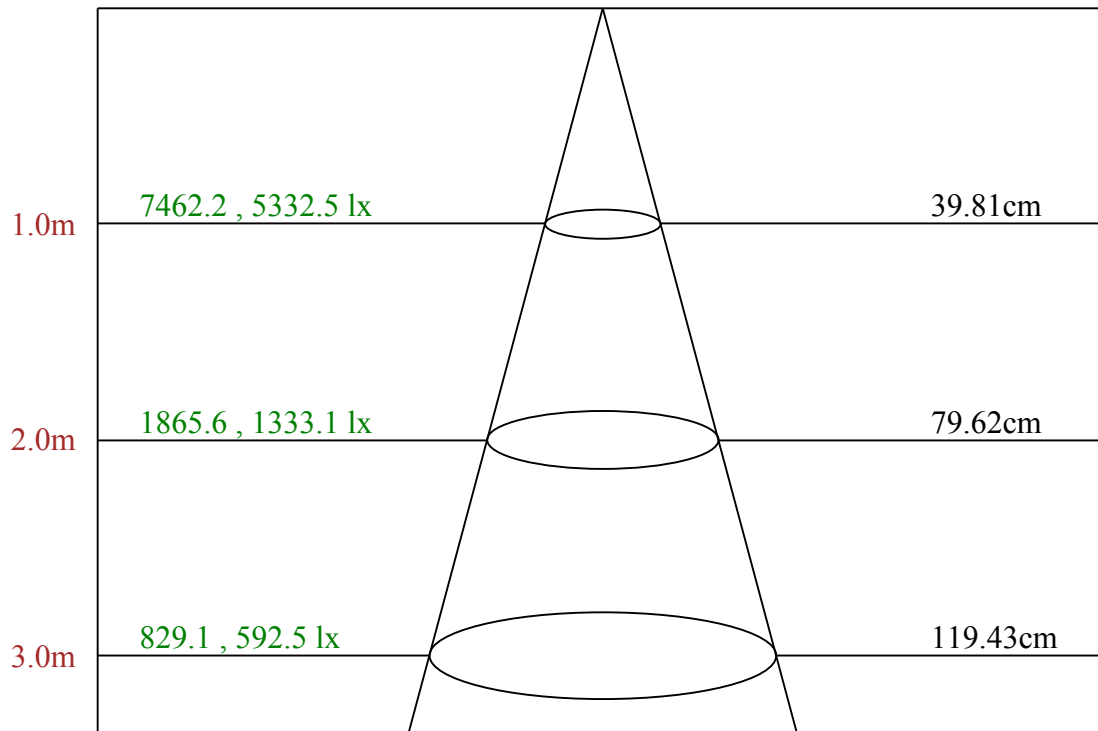
Aveage BeamAngle(IEC 61341):22.52

Equipment: equipamento lumini
Temperature(°C): 25.5

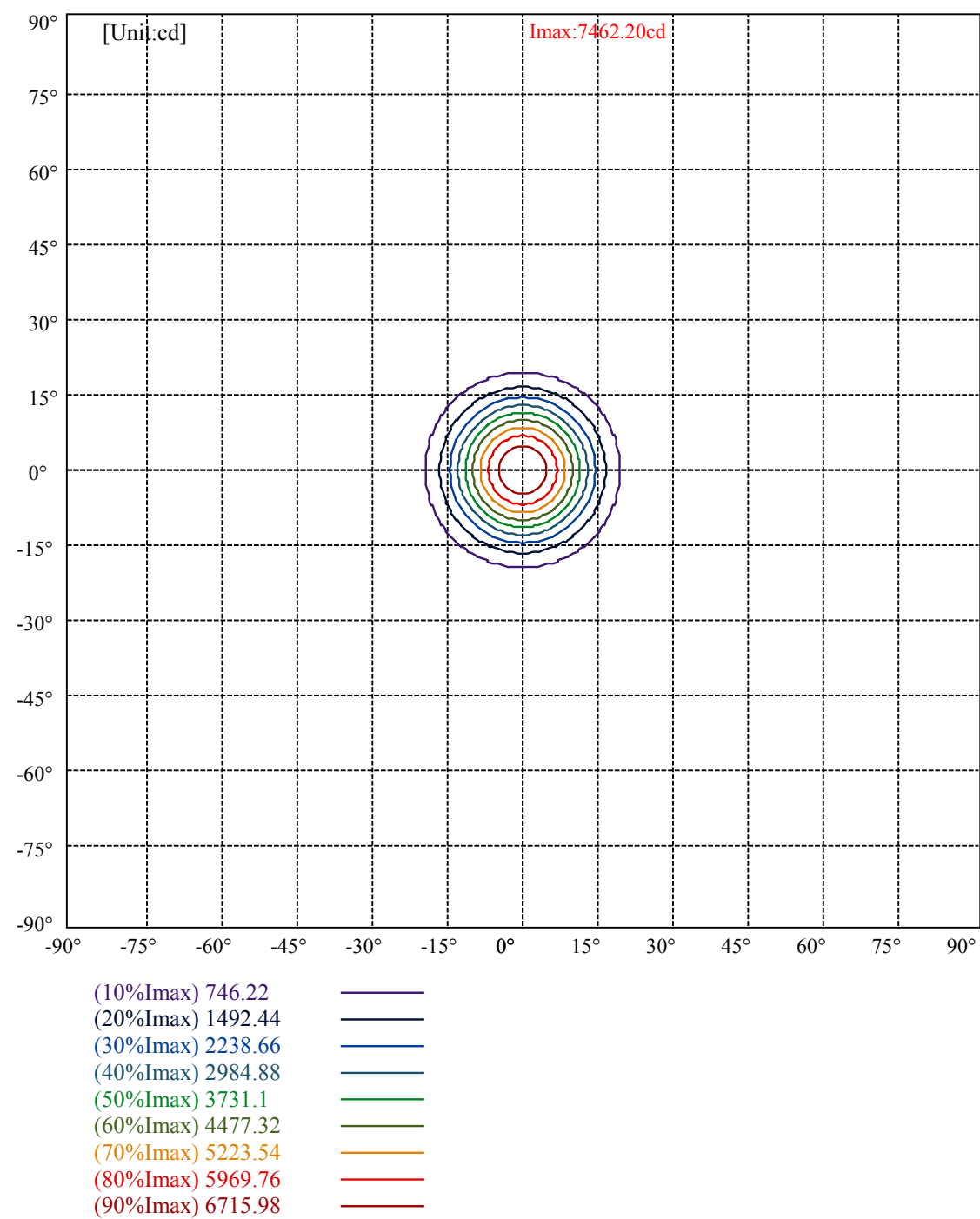
Date: 28/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 22.52



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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	3694	2870	2804	2980	3448	4213	5567	8309	16532
C45	3694	2870	2804	2980	3448	4213	5567	8309	16532
C90	3694	2870	2804	2980	3448	4213	5567	8309	16532

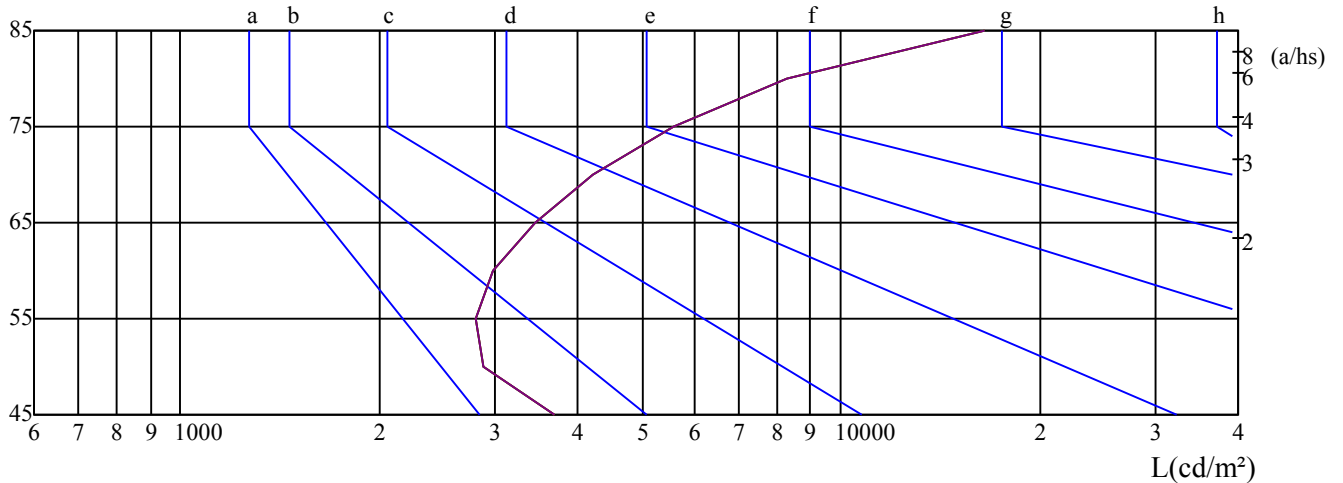
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3448	3448	3448	5567	5567	5567	16532	16532	16532

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

$\gamma(^{\circ})$



C0 ———

C45 ———

C90 ———

Equipment: equipamento lumini
Temperature($^{\circ}$ C): 25.5

Date: 28/05/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90

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	4.70	5.59	5.11	5.95	6.32	5.44	6.32	5.84	6.68	7.06
	3H	7.15	7.94	7.58	8.33	8.73	7.49	8.28	7.92	8.66	9.06
	4H	8.73	9.46	9.17	9.86	10.28	8.91	9.64	9.35	10.04	10.46
	6H	10.64	11.30	11.10	11.73	12.18	10.70	11.37	11.17	11.79	12.25
	8H	11.73	12.36	12.19	12.79	13.25	11.76	12.40	12.22	12.83	13.29
	12H	12.96	13.56	13.43	14.00	14.48	12.98	13.59	13.45	14.03	14.50
4H	2H	5.41	6.14	5.85	6.54	6.96	5.96	6.69	6.41	7.09	7.52
	3H	8.17	8.79	8.64	9.23	9.70	8.39	9.00	8.86	9.44	9.91
	4H	10.00	10.53	10.48	11.00	11.50	10.11	10.64	10.59	11.11	11.61
	6H	12.07	12.54	12.59	13.04	13.54	12.09	12.56	12.61	13.06	13.56
	8H	13.28	13.72	13.81	14.22	14.74	13.28	13.72	13.81	14.22	14.74
	12H	14.66	15.05	15.19	15.55	16.12	14.65	15.05	15.18	15.55	16.12
8H	4H	10.70	11.13	11.22	11.63	12.16	10.78	11.21	11.30	11.71	12.24
	6H	13.05	13.41	13.60	13.93	14.49	13.06	13.41	13.60	13.93	14.50
	8H	14.49	14.78	15.06	15.34	15.89	14.48	14.78	15.06	15.34	15.89
	12H	16.08	16.30	16.66	16.86	17.43	16.07	16.30	16.65	16.85	17.43
12H	4H	10.91	11.31	11.44	11.81	12.38	10.99	11.39	11.52	11.88	12.46
	6H	13.43	13.72	14.00	14.28	14.83	13.43	13.73	14.01	14.29	14.84
	8H	14.94	15.16	15.52	15.71	16.29	14.93	15.15	15.51	15.71	16.28
Variation with the observer position at spacings:											
S = 1.0H		0.7/-1.2					0.7/-1.2				
S = 1.5H		0.5/-1.4					0.5/-1.4				
S = 2.0H		0.5/-1.1					0.5/-1.1				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-3.6					-3.6				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: spectra no frame fa

LampCAT: modulo led 18W 30K irc 90

Ballast type: led driver 500mA

Report No:

Voltage(V): 127.7000

Test No:

Current(A): 0.1770

Number of Lamps: 1

Power (W): 22.3390

Lamp flux(lm): 1585.0

PF: 0.9910

Length(mm): 54

Width(mm): 54

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1162.13, Efficiency(%): 73.32% , Luminous Efficacy(lm/W): 52.02

Central intensity(cd): 1646.532, Maximum intensity(cd): 1646.532

Angle of maximum intensity: C=0.0 γ =0.0

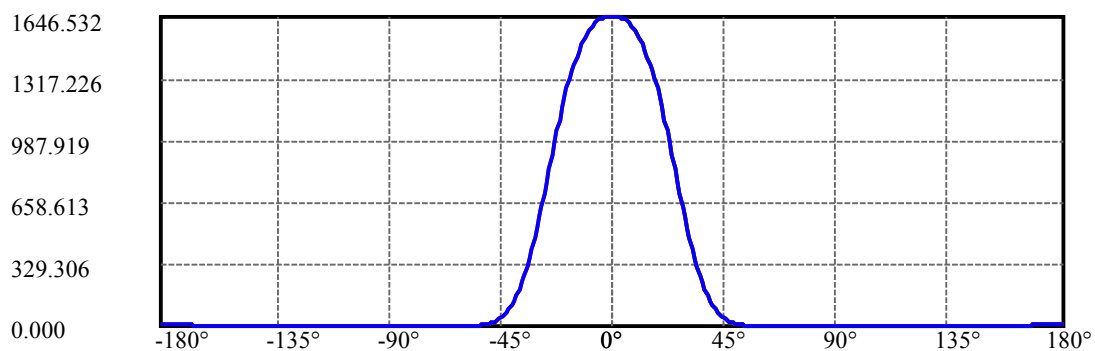
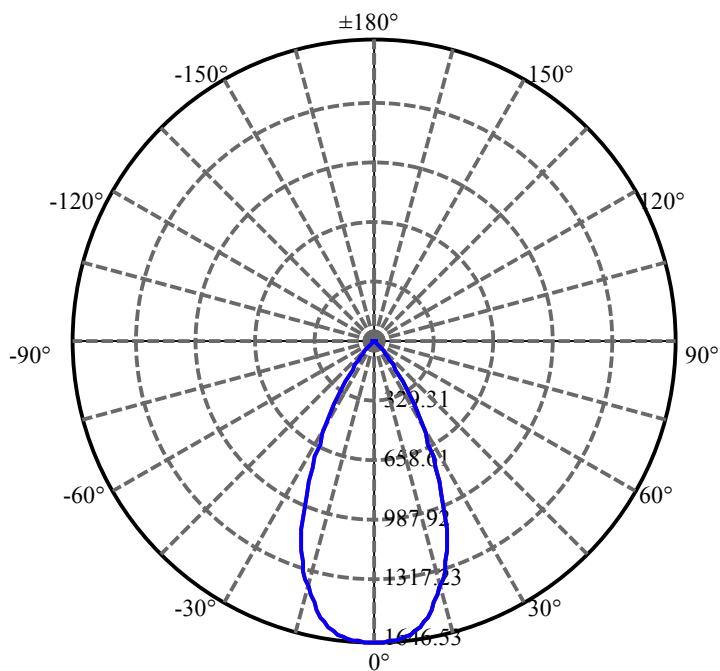
Beam angle of C0 plane : 50.56

Aveage BeamAngle(IEC 61341):50.56

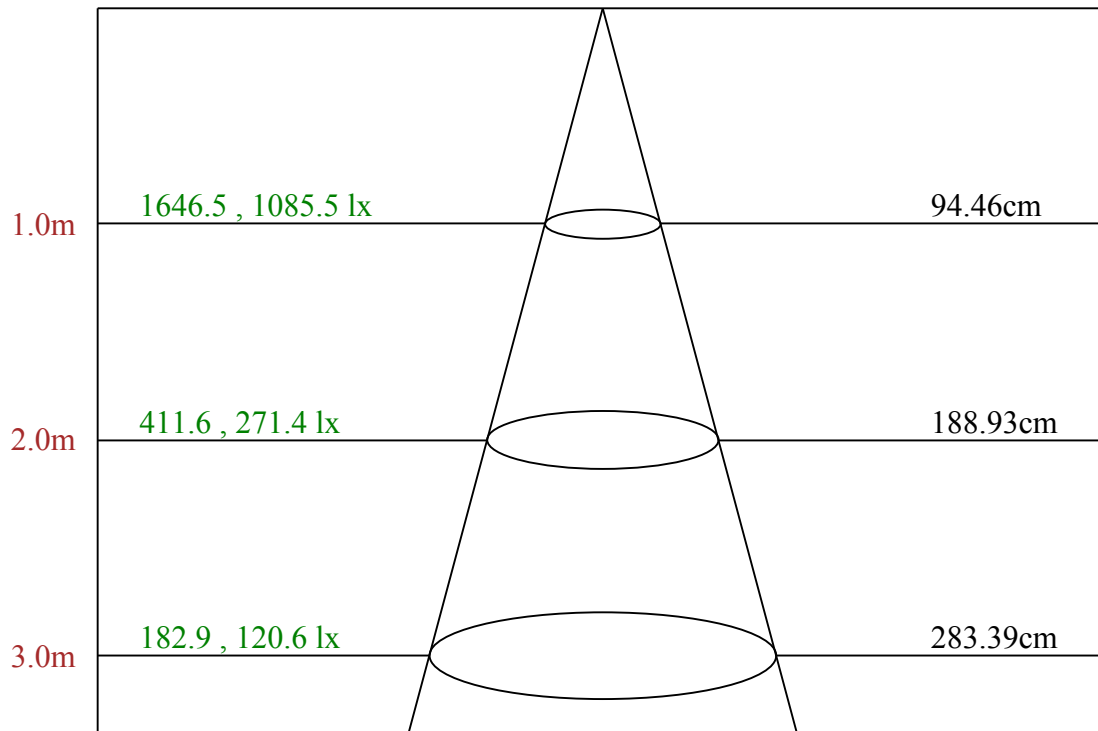
Equipment: equipamento lumini
Temperature(°C): 25.5

Date: 28/05/2025
Humidity(%): 60.0%

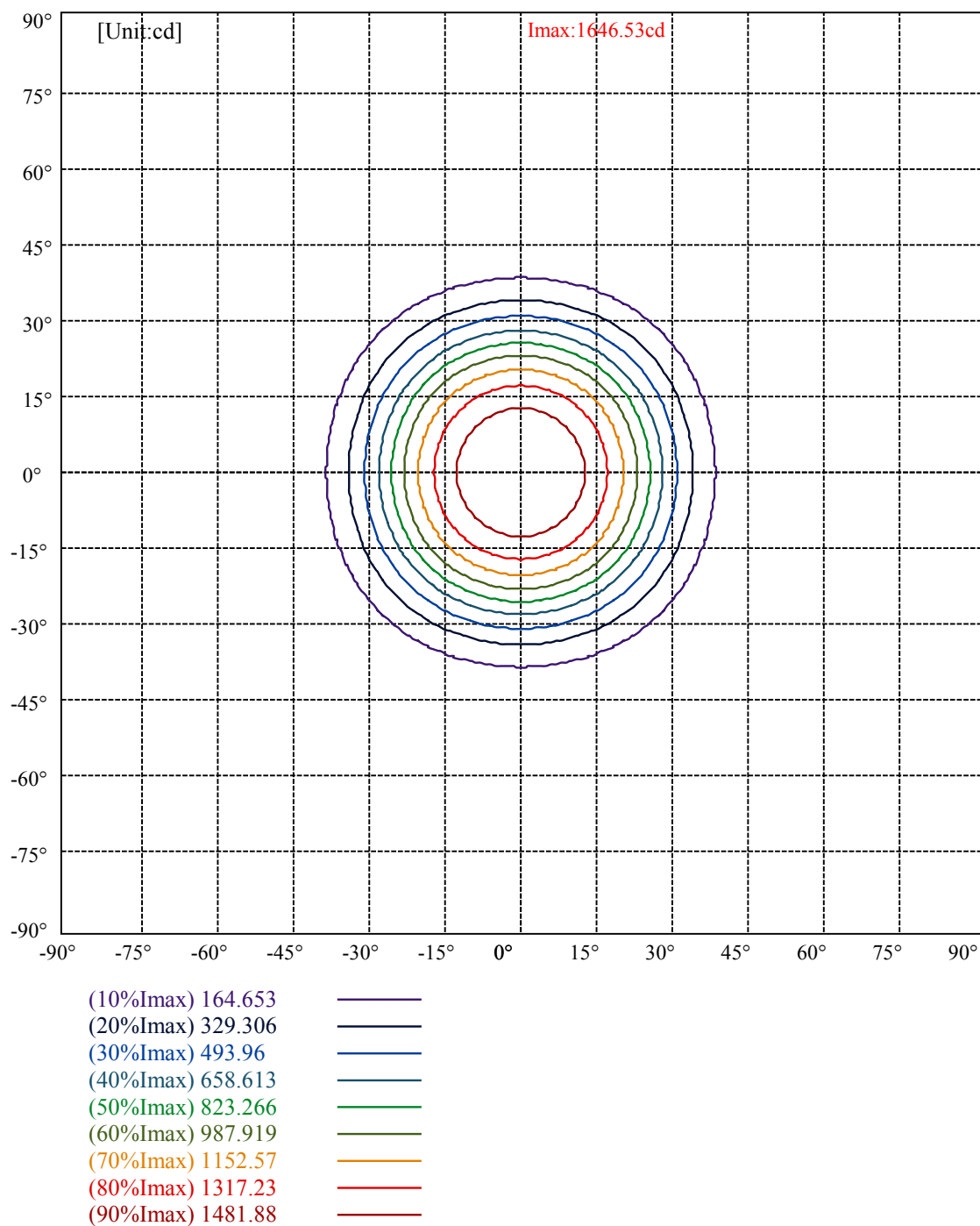
Operator: 01
Distance(m): 6.90



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



Max , Ave Beam angle of C0 plane 50.56



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Luminance Limiting Curve(no luminous side)

Appendix Page: 5 Total:6

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	18741	5398	2135	2020	2289	2828	3698	5512	10818
C45	18741	5398	2135	2020	2289	2828	3698	5512	10818
C90	18741	5398	2135	2020	2289	2828	3698	5512	10818

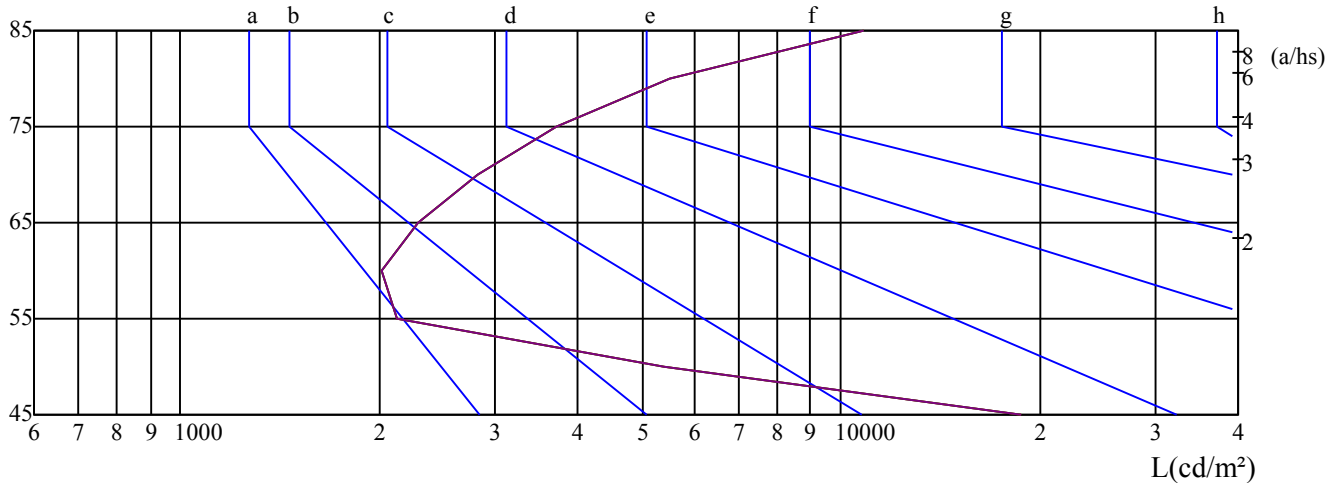
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2289	2289	2289	3698	3698	3698	10818	10818	10818

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

$\gamma(^{\circ})$



C0 ———

C45 ———

C90 ———

Equipment: equipamento lumini
Temperature($^{\circ}$ C): 25.5

Date: 28/05/2025
Humidity(%): 60.0%

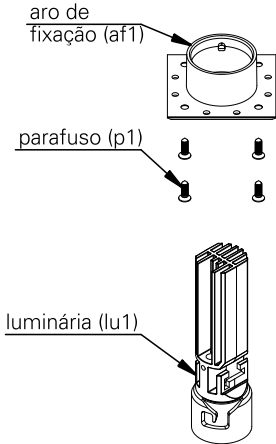
Operator: 01
Distance(m): 6.90

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	19.01	19.93	19.40	20.27	20.64	20.33	21.25	20.73	21.60	21.96
	3H	18.82	19.64	19.24	20.01	20.40	20.14	20.95	20.56	21.33	21.72
	4H	18.75	19.50	19.18	19.89	20.30	20.05	20.80	20.49	21.20	21.61
	6H	18.72	19.41	19.17	19.82	20.27	20.01	20.69	20.46	21.11	21.55
	8H	18.71	19.36	19.16	19.79	20.24	19.97	20.63	20.42	21.05	21.50
	12H	18.73	19.35	19.19	19.78	20.24	19.97	20.59	20.42	21.02	21.48
4H	2H	18.69	19.44	19.12	19.84	20.25	20.01	20.77	20.45	21.16	21.57
	3H	18.48	19.11	18.94	19.54	20.00	19.79	20.42	20.25	20.85	21.31
	4H	18.46	19.00	18.93	19.46	19.95	19.75	20.29	20.22	20.75	21.24
	6H	18.43	18.91	18.94	19.40	19.89	19.68	20.17	20.19	20.65	21.15
	8H	18.49	18.93	19.00	19.42	19.94	19.70	20.15	20.22	20.64	21.15
	12H	18.61	19.02	19.13	19.51	20.07	19.77	20.18	20.30	20.67	21.23
8H	4H	18.29	18.73	18.81	19.23	19.74	19.56	20.01	20.08	20.50	21.02
	6H	18.31	18.68	18.85	19.19	19.74	19.53	19.90	20.07	20.41	20.96
	8H	18.48	18.78	19.04	19.33	19.87	19.64	19.94	20.20	20.50	21.03
	12H	18.71	18.95	19.29	19.49	20.06	19.80	20.03	20.37	20.58	21.14
12H	4H	18.25	18.66	18.77	19.14	19.70	19.52	19.93	20.04	20.41	20.98
	6H	18.34	18.64	18.90	19.19	19.73	19.54	19.85	20.11	20.40	20.94
	8H	18.50	18.73	19.07	19.28	19.84	19.64	19.87	20.21	20.42	20.98
Variation with the observer position at spacings:											
S = 1.0H		5.4/-11.4					5.4/-11.4				
S = 1.5H		8.0/-9.2					8.0/-9.2				
S = 2.0H		9.7/-7.7					9.7/-7.7				
Standard tables:		BK1					BK1				
Uncorrected UGR		0.5					0.5				

依据CIE Publ. 117 计算 UGR, S/H = 0.25

spectra

spectra xsm no frame 2w
spectra xsm no frame 4w
spectra sm no frame 6w
spectra sm no frame 12w
spectra md no frame 18w



atenção

leia atentamente todas as instruções relacionadas ao seu produto antes de utilizá-lo.

antes de iniciar a instalação, certifique-se que a energia elétrica esteja desligada.

não são permitidas modificações no produto, esse deve atender à finalidade para a qual foi projetado e ser utilizado de acordo com as especificações técnicas.

em caso de dúvidas, entre em contato com o fabricante.

especificações técnicas

fonte de luz

módulo led integrado (incluso)

índice de proteção

IP20 - luminária para uso interno

peso

spectra xsm no frame 2w - 0,1 kg
spectra xsm no frame 4w - 0,15 kg
spectra sm no frame 6w - 0,26 kg
spectra sm no frame 12w - 0,26 kg
spectra md no frame 18w - 0,37 kg

cuidados com o produto

o produto deve ser manuseado com cuidado para evitar riscos e deformações.

para limpeza, utilize detergente neutro e um pano de algodão macio. finalize com um pano de algodão seco.

instalação

conteúdo da embalagem

1 luminária

ferramentas necessárias

chave philips

informações importantes

para a instalação, lave e seque as mãos, use luvas descartáveis.

antes de iniciar a instalação, certifique-se que a energia elétrica esteja desligada.

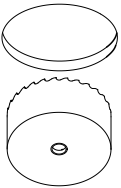
retire a luminária da embalagem com cuidado e apoie-o em uma superfície limpa e seca.

instalação passo a passo

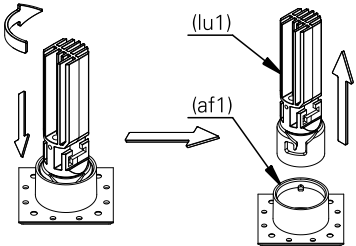


1. faça um nicho no forro conforme a tabela abaixo:

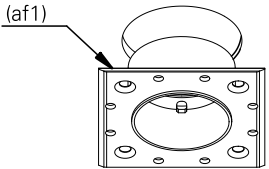
spectra xsm no frame 2w - nicho = Ø35
spectra xsm no frame 4w - nicho = Ø35
spectra sm no frame 6w- nicho = Ø52
spectra sm no frame 12w- nicho = Ø52
spectra md no frame 18w - nicho = Ø64



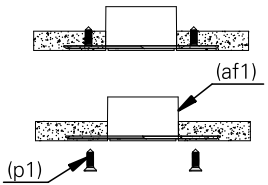
2. segure o aro de fixação (af1) empurre a luminária (lu1), gire sentido horário e retire a luminária.



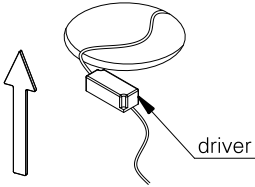
3. encaixe o aro de fixação (af1) no nicho.



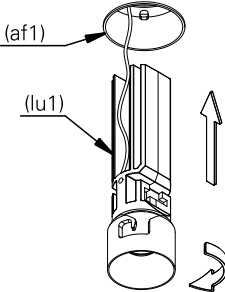
4. utilize os parafusos (p1) para fixar o aro de fixação (af1), em seguida faça o acabamento no forro cobrindo-o com a massa de acabamento, não deixando o parafuso aparente.



5. aloje o driver sobre o forro. faça a conexão entre os cabos condutores da luminária e os fios da rede elétrica, utilize conectores apropriados para garantir o contato firme e seguro. caso necessário isole-os separadamente com fita isolante.



6. encaixe a luminária (lu1) no aro de fixação (af1) e gire no sentido anti-horário.



7. a luminária após instalada deverá ficar como ilustrado na imagem. ligue a rede elétrica e teste o seu funcionamento.

