



focal e

linha de projetores à prova de tempo desenvolvidos para tecnologia led. corpo em alumínio injetado e pintado por processo eletrostático, possui excelente controle de ofuscamento. disponível em 2 aberturas, nas versões embutida, espeto e roseta. estas últimas com sistema de orientação e travamento do fecho.

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)

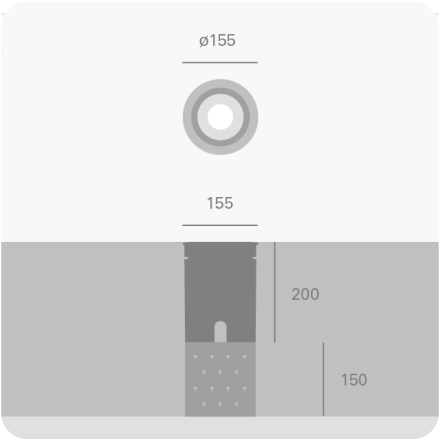
W		K	lm nominal	lm útil
8,5	concentrado	2700		
8,5	médio	2700		
8,5	concentrado	3000	750	519
8,5	médio	3000	750	633
15,5	concentrado	2700		
15,5	médio	2700		
15,5	concentrado	3000	1265	946
15,5	médio	3000	1265	1017
15,5	difuso	2700		
15,5	difuso	3000	1265	277
30	concentrado	2700		
30	médio	2700		
30	concentrado	3000	2860	1982
30	médio	3000	2860	2145

equipamentos
LED driver 180mA (incluso, dentro do produto)
LED driver 350mA (incluso, dentro do produto)
LED driver 700mA (incluso, dentro do produto)

controle
on/off

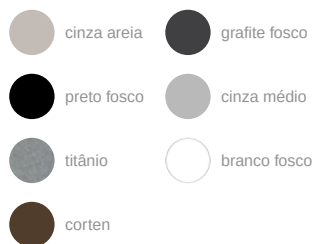
instalação
alvenaria
grama
terra

IP
65



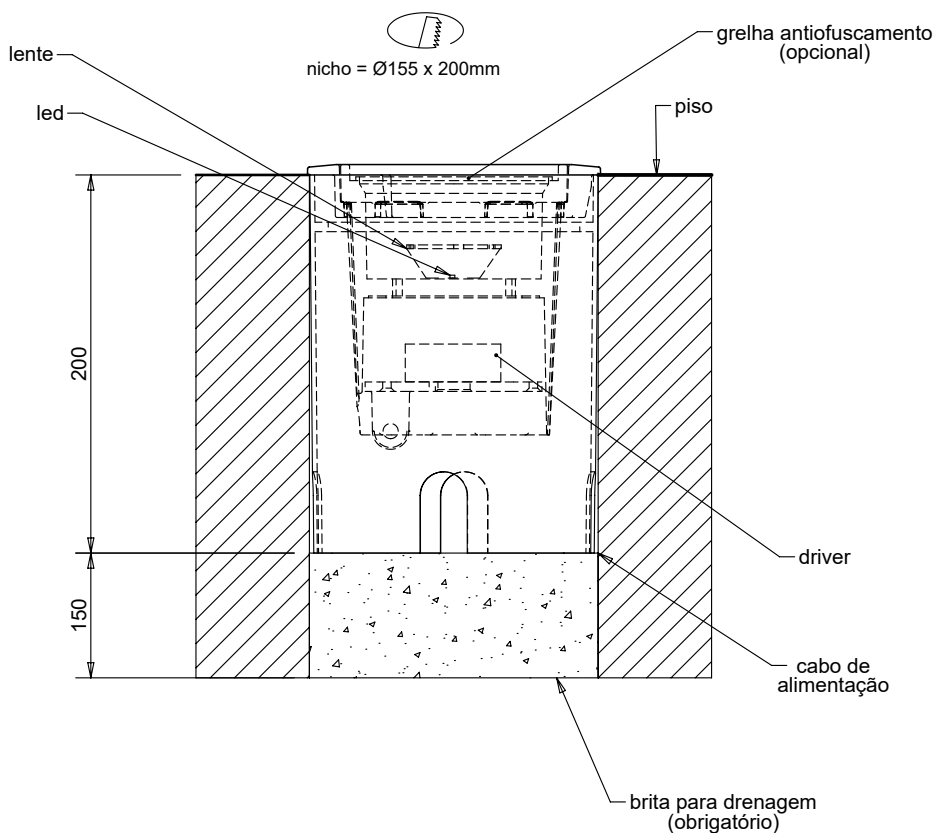
acabamentos e cores

cores



vista lateral

dimensões em milímetros



focal e

folha
1/1

escala
1:4

data
23/11/2024

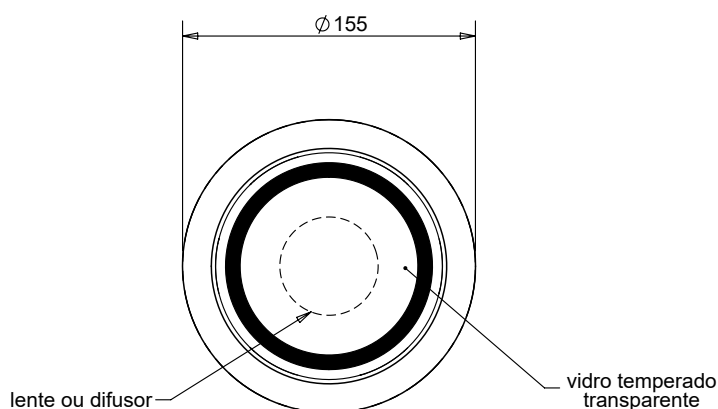
desenhista
ailton

aprovação
ronaldo

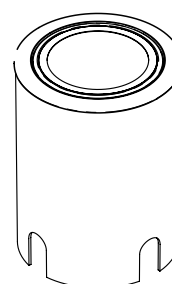
revisões
23/11/2024

vista superior

dimensões em milímetros



para maiores informações,
consulte a área técnica
produto@lumini.com.br



ATENÇÃO

Para garantir o correto funcionamento da luminária é necessário que haja drenagem no fundo do nicho de instalação



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LumCAT:

Luminaire: focal e fc

LampCAT: modulo led 8.5W 30K irc90

Ballast type: LED driver 180mA

Report No:

Voltage(V): 127.0800

Test No:

Current(A): 0.0610

Number of Lamps: 1

Power (W): 7.8600

Lamp flux(lm): 750.0

PF: 0.9860

Length(mm): 94

Width(mm): 94

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 519.36, Efficiency(%): 69.25% , Luminous Efficacy(lm/W): 66.08

Central intensity(cd): 4931.872, Maximum intensity(cd): 4931.872

Angle of maximum intensity: C=0.0 γ =0.0

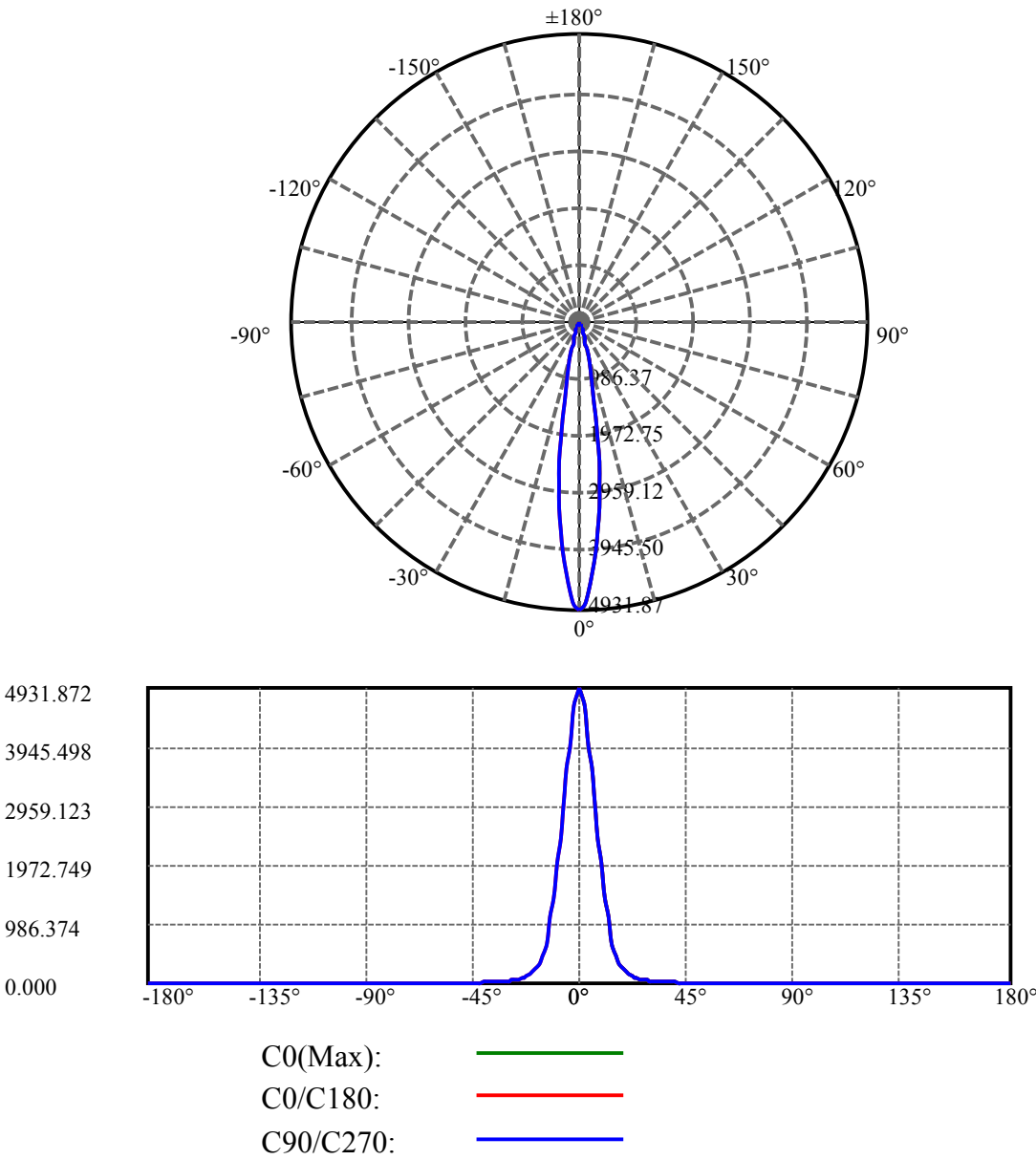
Beam angle of C0 plane : 15.79

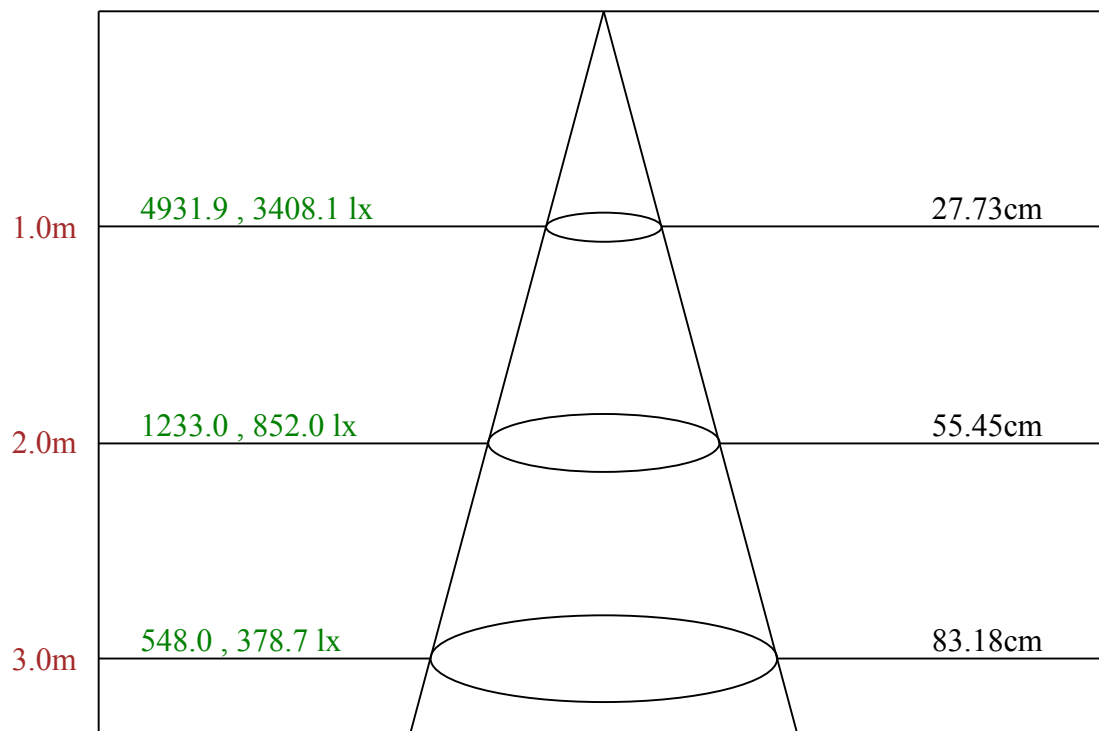
Aveage BeamAngle(IEC 61341):15.79

Equipment: equipamento lumini
Temperature(°C): 24.8

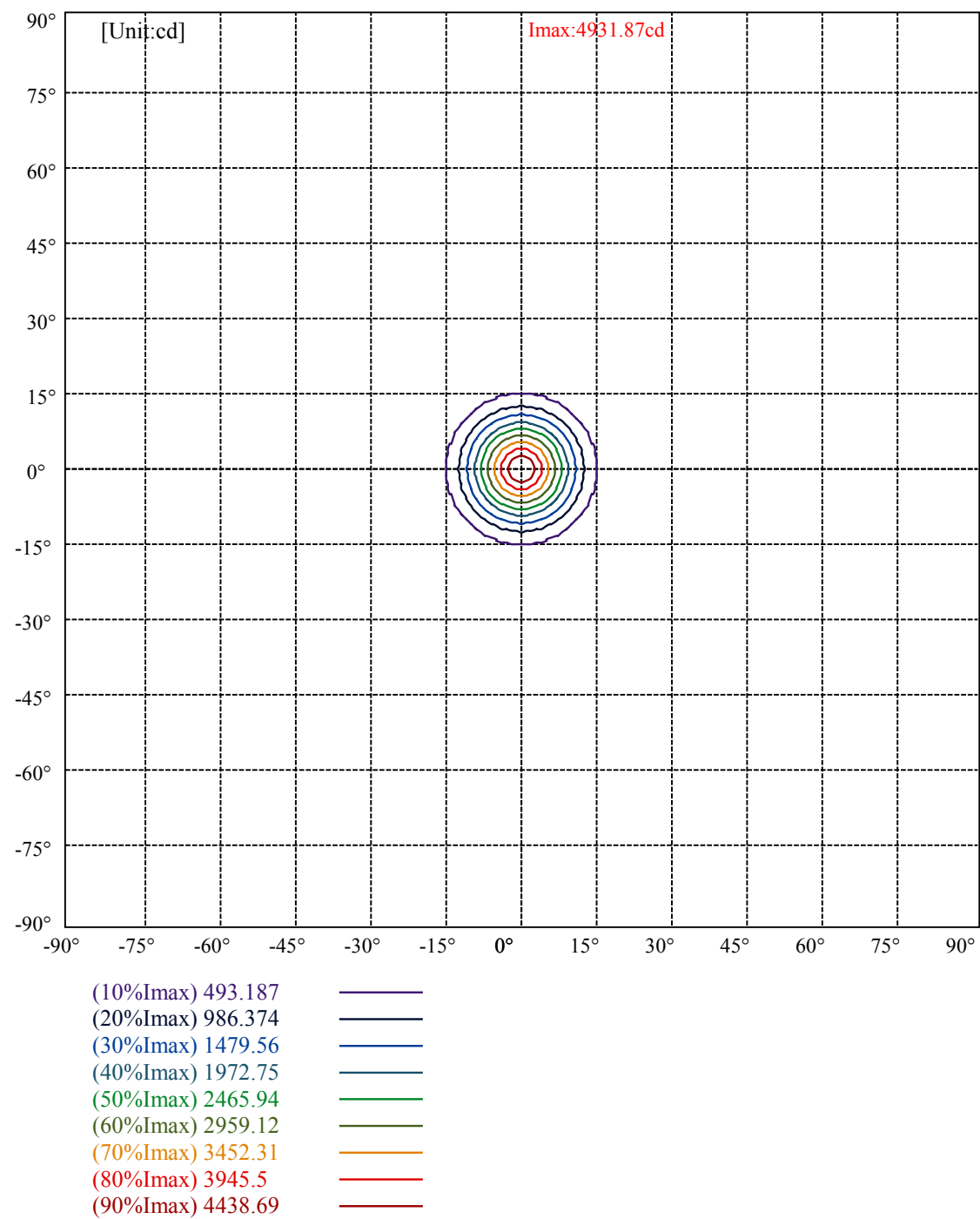
Date: 21/11/2024
Humidity(%): 76.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 15.79



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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	1684	710	496	498	508	616	802	1179	2334
C45	1684	710	496	498	508	616	802	1179	2334
C90	1684	710	496	498	508	616	802	1179	2334

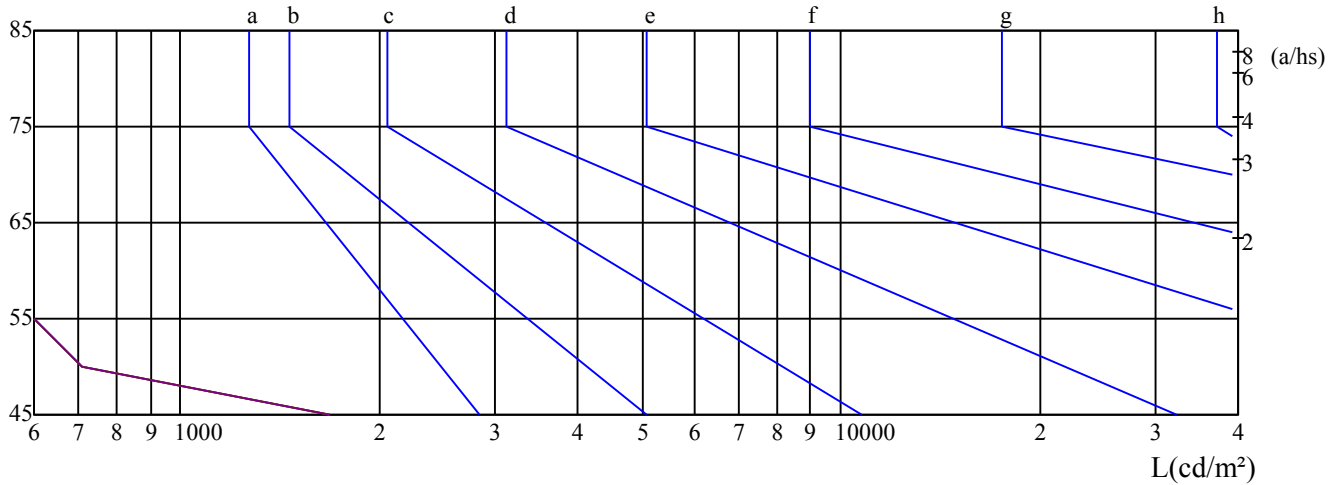
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
508	508	508	802	802	802	2334	2334	2334

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	3.72	4.62	4.13	4.98	5.36	3.35	4.26	3.76	4.62	4.99
	3H	4.25	5.05	4.68	5.43	5.84	3.91	4.71	4.34	5.10	5.51
	4H	4.83	5.57	5.28	5.98	6.40	4.53	5.27	4.97	5.67	6.10
	6H	5.82	6.50	6.28	6.92	7.38	5.55	6.23	6.02	6.66	7.11
	8H	6.48	7.13	6.95	7.57	8.03	6.22	6.87	6.69	7.30	7.76
	12H	7.36	7.98	7.83	8.42	8.89	7.10	7.71	7.57	8.15	8.63
4H	2H	3.65	4.39	4.09	4.79	5.22	3.31	4.05	3.75	4.45	4.88
	3H	4.45	5.07	4.92	5.51	5.99	4.15	4.78	4.62	5.22	5.70
	4H	5.35	5.89	5.83	6.36	6.87	5.10	5.64	5.58	6.11	6.61
	6H	6.65	7.13	7.17	7.62	8.13	6.43	6.91	6.95	7.41	7.92
	8H	7.54	7.98	8.06	8.48	9.01	7.32	7.76	7.84	8.26	8.79
	12H	8.66	9.07	9.19	9.56	10.14	8.43	8.83	8.96	9.33	9.90
8H	4H	5.69	6.13	6.21	6.63	7.16	5.47	5.91	6.00	6.42	6.94
	6H	7.31	7.68	7.86	8.20	8.76	7.14	7.50	7.68	8.02	8.58
	8H	8.46	8.76	9.04	9.32	9.88	8.28	8.58	8.86	9.14	9.70
	12H	9.86	10.09	10.44	10.65	11.22	9.66	9.89	10.24	10.45	11.02
12H	4H	5.80	6.21	6.33	6.70	7.28	5.60	6.01	6.13	6.50	7.08
	6H	7.59	7.89	8.16	8.45	9.00	7.43	7.73	8.00	8.29	8.84
	8H	8.82	9.05	9.40	9.61	10.18	8.66	8.89	9.24	9.45	10.02
Variation with the observer position at spacings:											
S = 1.0H		1.7/-2.1					1.7/-2.1				
S = 1.5H		2.2/-1.8					2.2/-1.8				
S = 2.0H		2.6/-1.5					2.6/-1.5				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-7.9					-7.9				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: focal e fm

LampCAT: modulo led 8.5W 30K irc90

Ballast type: LED driver 180mA

Report No:

Voltage(V): 127.0900

Test No:

Current(A): 0.0610

Number of Lamps: 1

Power (W): 7.8700

Lamp flux(lm): 750.0

PF: 0.9857

Length(mm): 94

Width(mm): 94

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 632.75, Efficiency(%): 84.37% , Luminous Efficacy(lm/W): 80.40

Central intensity(cd): 2119.157, Maximum intensity(cd): 2119.157

Angle of maximum intensity: C=0.0 γ =0.0

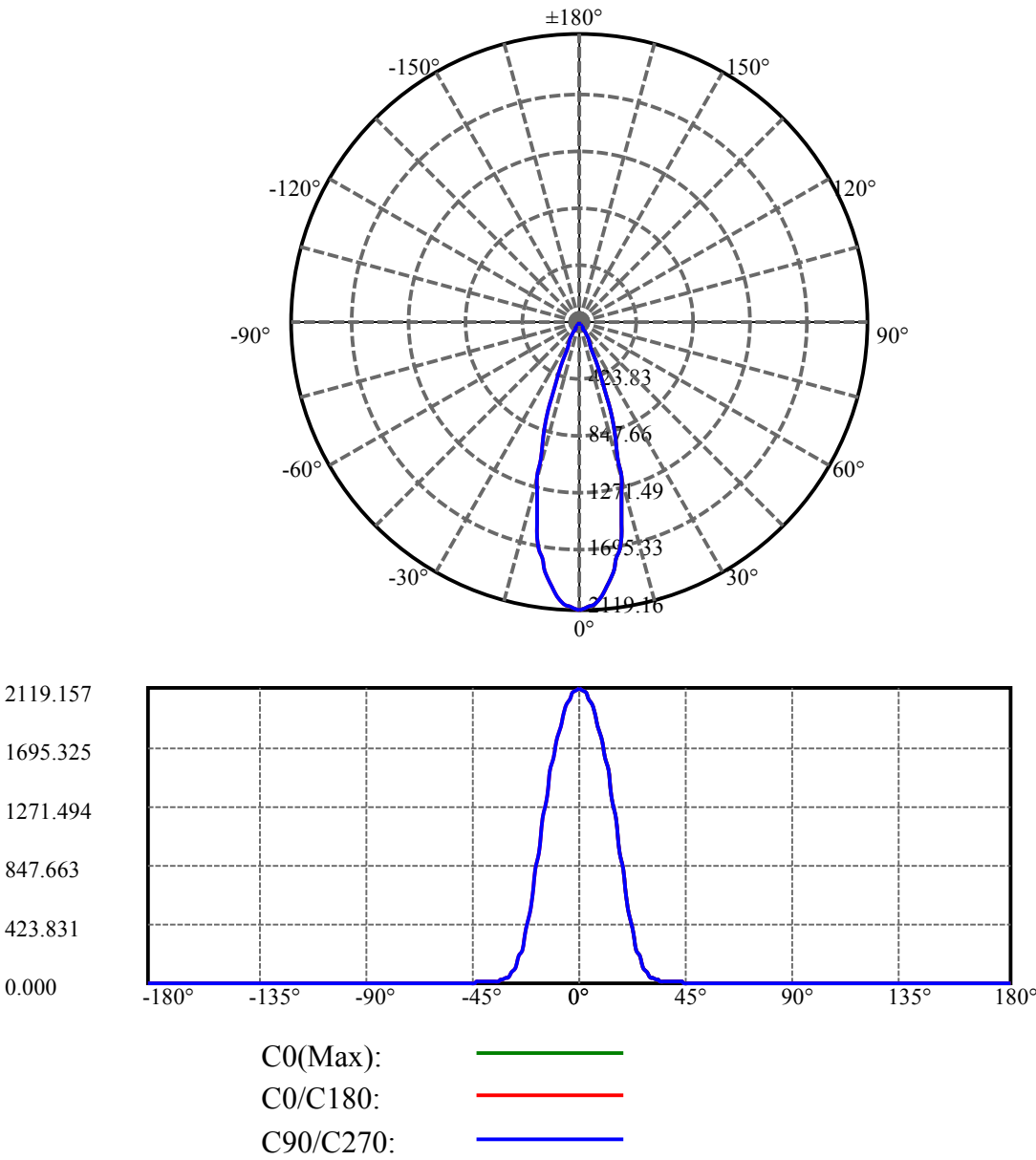
Beam angle of C0 plane : 31.87

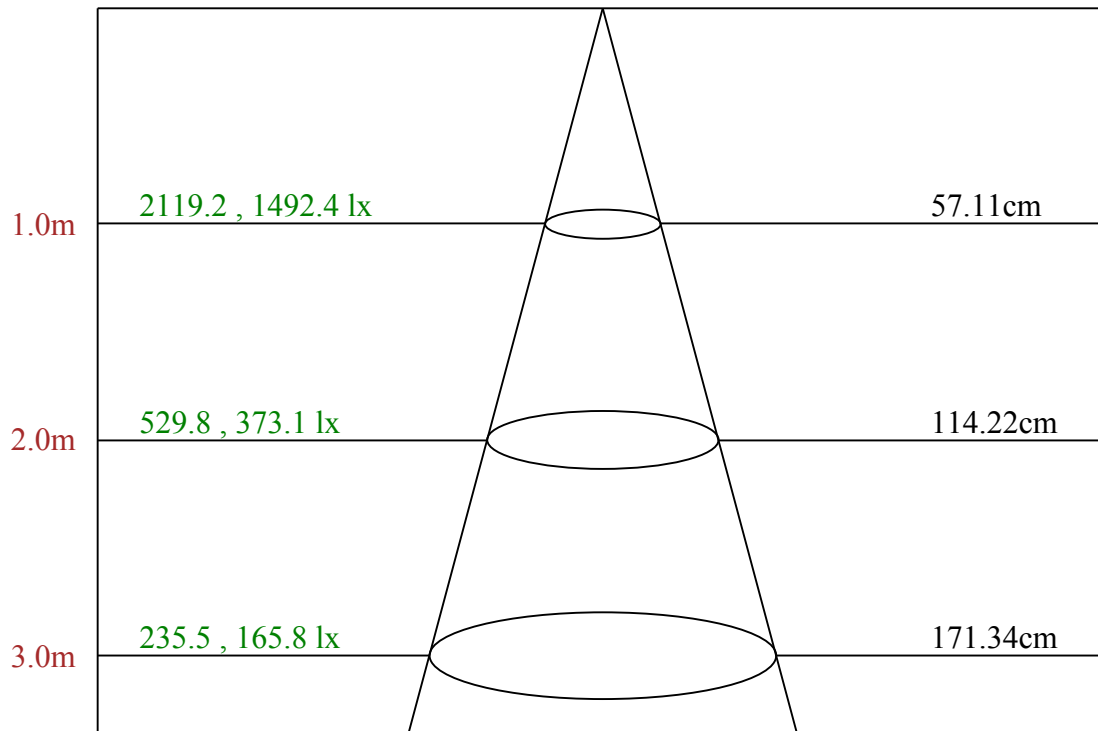
Aveage BeamAngle(IEC 61341):31.87

Equipment: equipamento lumini
Temperature(°C): 24.8

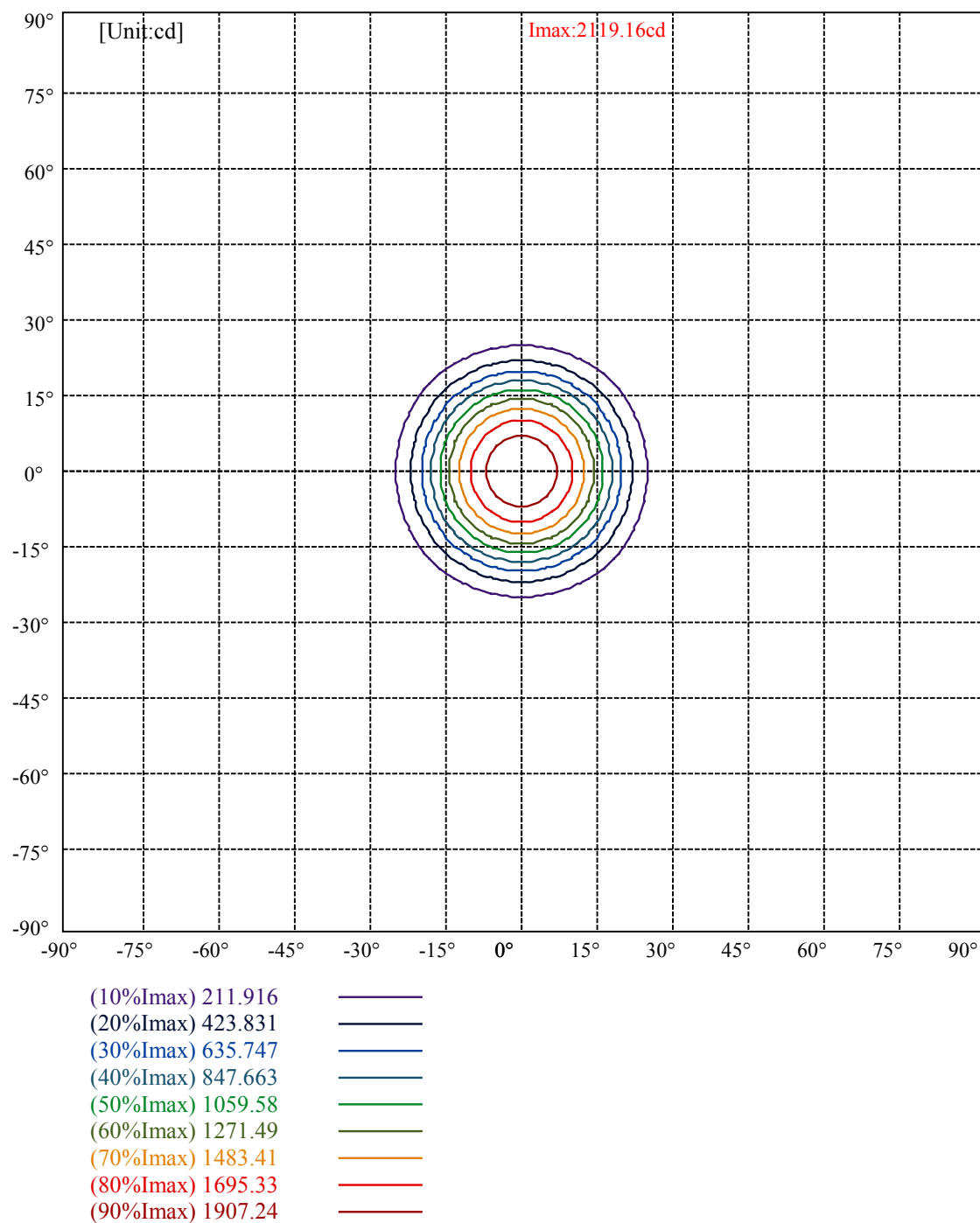
Date: 21/11/2024
Humidity(%): 76.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 31.87



Luminance Table

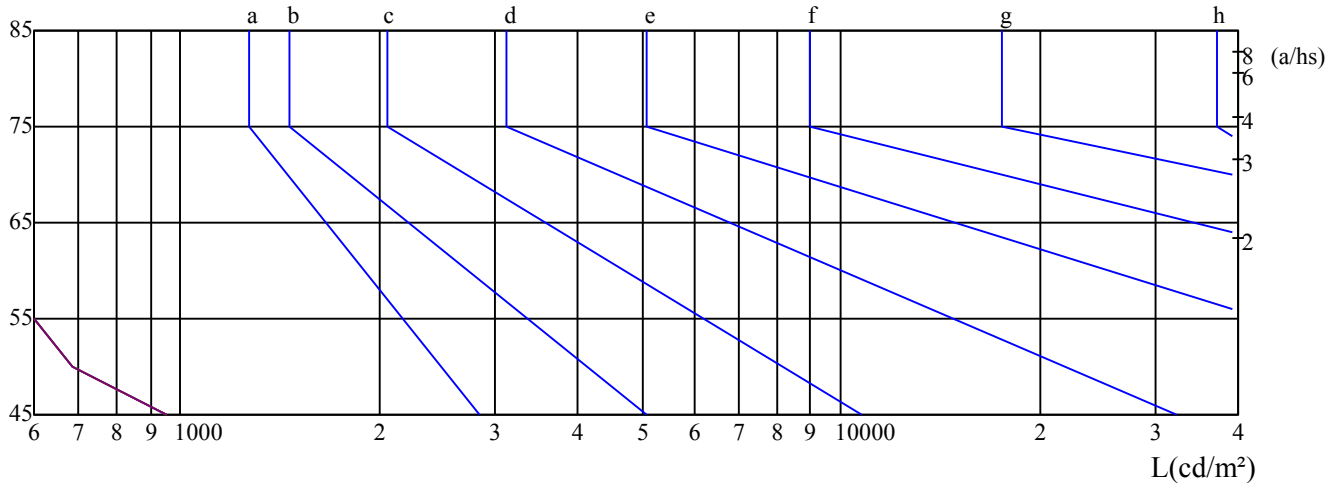
γ	45	50	55	60	65	70	75	80	85
C0	953	687	541	543	602	731	947	1396	2767
C45	953	687	541	543	602	731	947	1396	2767
C90	953	687	541	543	602	731	947	1396	2767

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
602	602	602	947	947	947	2767	2767	2767

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	1.96	2.85	2.37	3.21	3.58	1.72	2.62	2.13	2.98	3.35
	3H	3.08	3.88	3.51	4.26	4.67	2.87	3.66	3.30	4.05	4.45
	4H	4.05	4.78	4.49	5.18	5.61	3.82	4.55	4.26	4.95	5.38
	6H	5.46	6.13	5.92	6.55	7.01	5.19	5.86	5.65	6.28	6.74
	8H	6.35	6.99	6.81	7.42	7.88	6.03	6.67	6.50	7.11	7.57
	12H	7.44	8.05	7.91	8.49	8.96	7.12	7.72	7.59	8.16	8.64
4H	2H	2.10	2.83	2.54	3.23	3.66	1.89	2.63	2.34	3.03	3.45
	3H	3.59	4.21	4.06	4.65	5.12	3.40	4.02	3.87	4.46	4.93
	4H	4.89	5.42	5.37	5.89	6.39	4.69	5.23	5.17	5.69	6.20
	6H	6.57	7.04	7.08	7.54	8.04	6.33	6.80	6.84	7.30	7.80
	8H	7.65	8.08	8.18	8.59	9.11	7.36	7.79	7.88	8.29	8.82
	12H	8.94	9.34	9.47	9.83	10.40	8.64	9.04	9.17	9.53	10.10
8H	4H	5.36	5.80	5.89	6.30	6.82	5.20	5.63	5.72	6.13	6.66
	6H	7.35	7.71	7.90	8.23	8.79	7.15	7.51	7.70	8.03	8.59
	8H	8.69	8.99	9.27	9.55	10.10	8.44	8.73	9.01	9.29	9.84
	12H	10.22	10.45	10.81	11.01	11.58	9.96	10.19	10.54	10.74	11.32
12H	4H	5.51	5.91	6.04	6.41	6.98	5.37	5.77	5.90	6.26	6.83
	6H	7.67	7.96	8.24	8.52	9.07	7.49	7.78	8.06	8.34	8.89
	8H	9.09	9.31	9.67	9.87	10.44	8.86	9.08	9.44	9.64	10.21
Variation with the observer position at spacings:											
S = 1.0H		1.4/-1.2					1.4/-1.2				
S = 1.5H		1.4/-1.3					1.4/-1.3				
S = 2.0H		1.5/-1.2					1.5/-1.2				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-8.9					-8.9				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: focal e fc

LampCAT: modulo led 15.5W 30K irc90

Ballast type: LED driver 350mA

Report No:

Voltage(V): 128.3000

Test No:

Current(A): 0.1220

Number of Lamps: 1

Power (W): 15.6530

Lamp flux(lm): 1265.0

PF: 0.9870

Length(mm): 94

Width(mm): 94

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 946.38, Efficiency(%): 74.81% , Luminous Efficacy(lm/W): 60.46

Central intensity(cd): 9037.484, Maximum intensity(cd): 9037.484

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

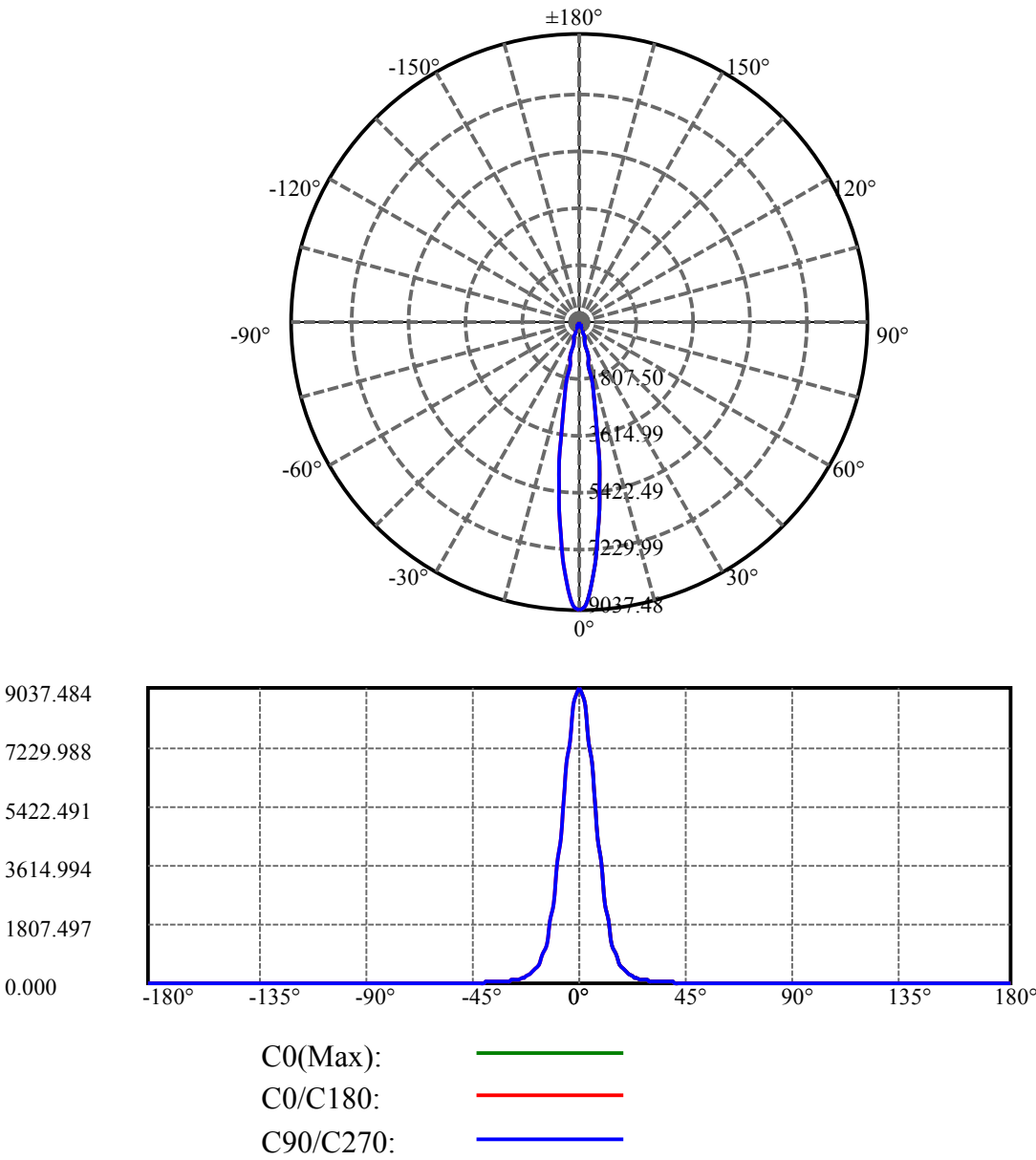
Beam angle of C0 plane : 15.78

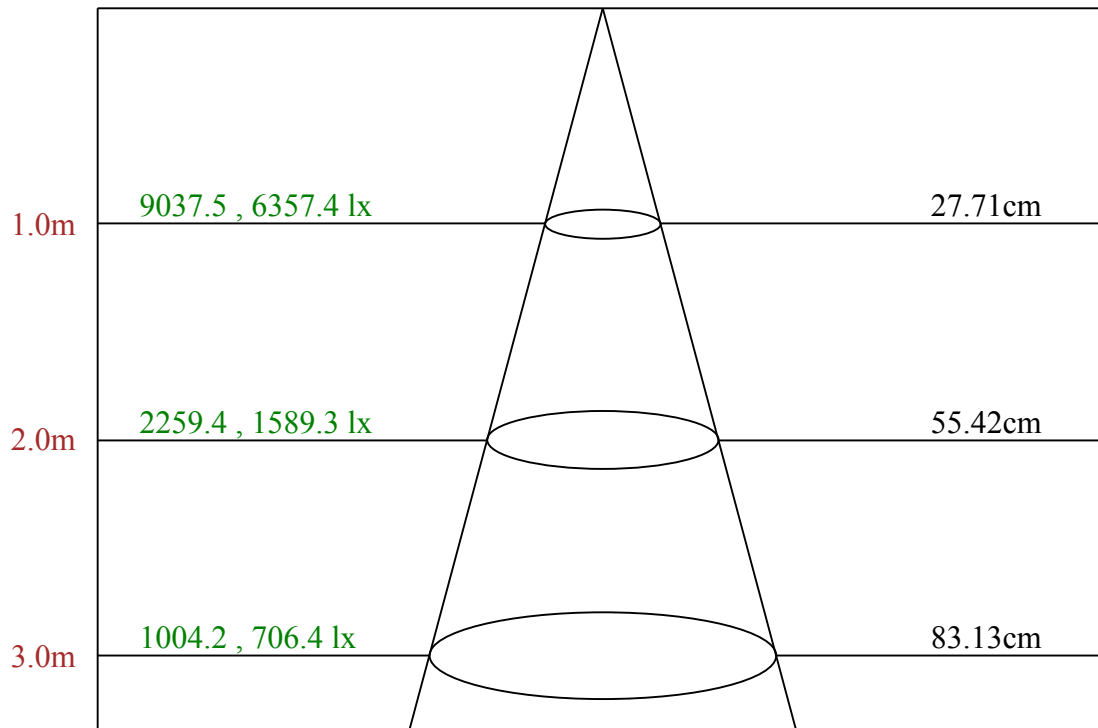
Average BeamAngle(IEC 61341): 15.78

Equipment: equipamento lumini
Temperature(°C): 23.5

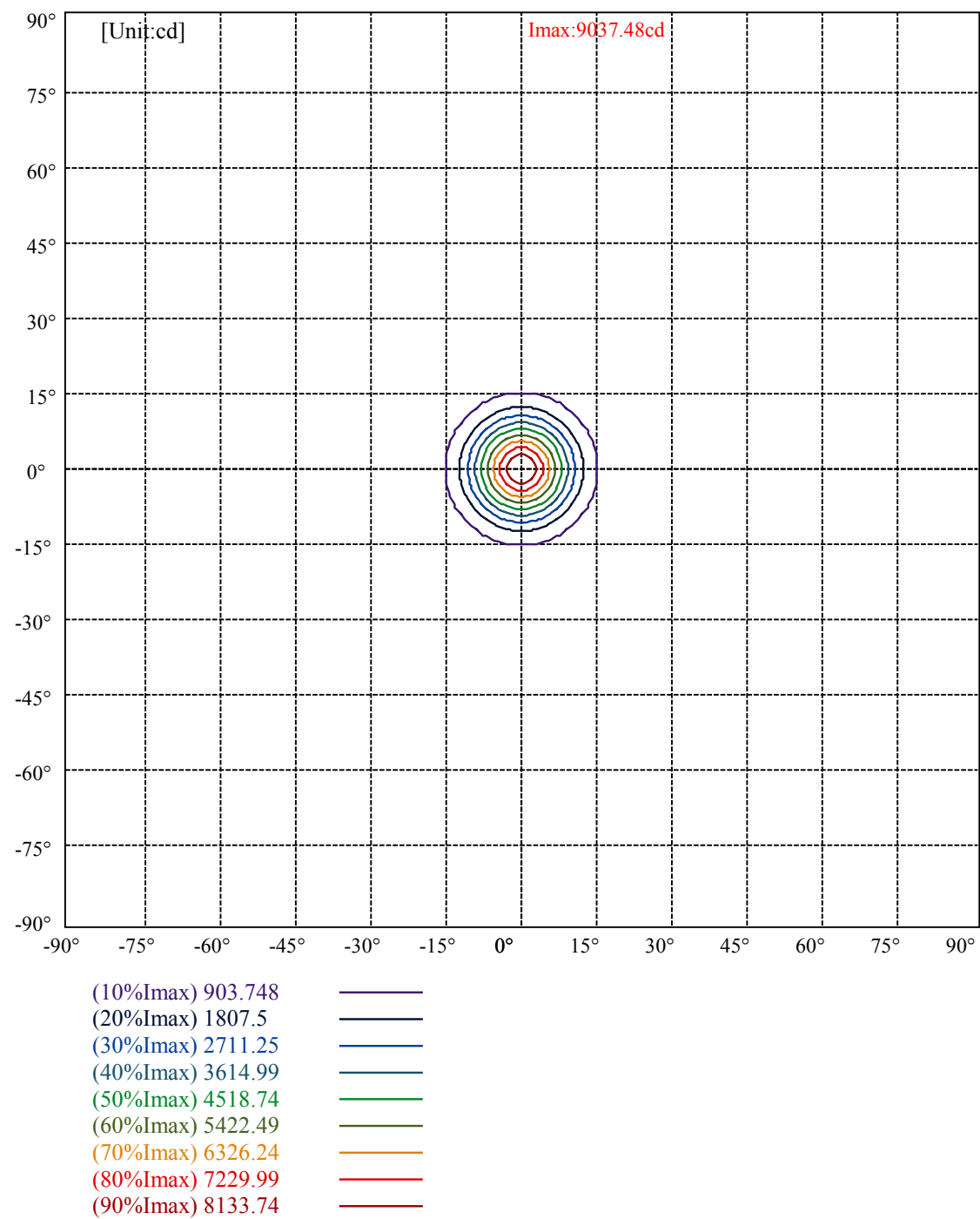
Date: 22/11/2024
Humidity(%): 79.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 15.78



Luminance Table

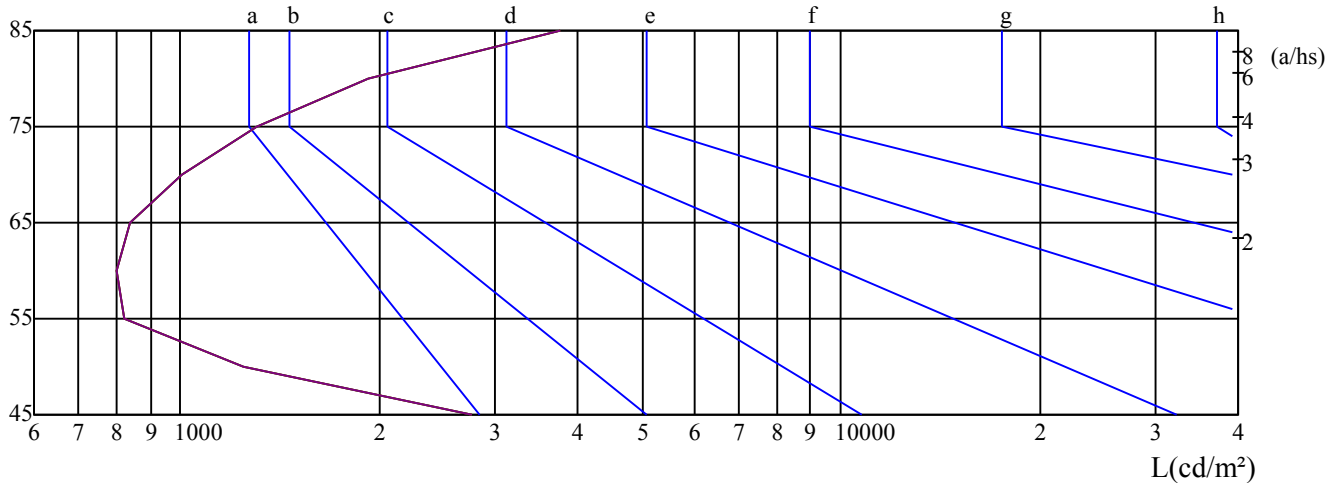
γ	45	50	55	60	65	70	75	80	85
C0	2758	1248	824	801	841	1006	1301	1920	3763
C45	2758	1248	824	801	841	1006	1301	1920	3763
C90	2758	1248	824	801	841	1006	1301	1920	3763

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
841	841	841	1301	1301	1301	3763	3763	3763

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	5.71	6.61	6.11	6.96	7.33	5.52	6.42	5.92	6.77	7.14
	3H	6.14	6.94	6.57	7.32	7.72	5.94	6.74	6.37	7.12	7.52
	4H	6.64	7.38	7.08	7.78	8.20	6.43	7.17	6.87	7.56	7.98
	6H	7.51	8.19	7.97	8.61	9.06	7.28	7.96	7.74	8.38	8.83
	8H	8.13	8.77	8.59	9.20	9.66	7.88	8.52	8.34	8.95	9.41
	12H	8.96	9.57	9.42	10.01	10.47	8.67	9.28	9.13	9.71	10.18
4H	2H	5.60	6.34	6.04	6.73	7.15	5.42	6.16	5.86	6.56	6.98
	3H	6.27	6.89	6.73	7.33	7.80	6.08	6.71	6.55	7.14	7.61
	4H	7.07	7.60	7.54	8.07	8.57	6.88	7.41	7.35	7.88	8.37
	6H	8.24	8.72	8.75	9.21	9.71	8.03	8.51	8.55	9.00	9.50
	8H	9.09	9.53	9.61	10.03	10.55	8.86	9.30	9.38	9.79	10.32
	12H	10.18	10.58	10.70	11.07	11.64	9.89	10.30	10.42	10.79	11.36
8H	4H	7.34	7.78	7.86	8.28	8.80	7.18	7.61	7.70	8.11	8.63
	6H	8.84	9.20	9.39	9.72	10.28	8.66	9.02	9.21	9.54	10.10
	8H	9.96	10.26	10.53	10.82	11.36	9.76	10.05	10.33	10.61	11.16
	12H	11.32	11.55	11.90	12.10	12.67	11.06	11.29	11.64	11.84	12.41
12H	4H	7.44	7.84	7.97	8.33	8.90	7.28	7.69	7.81	8.18	8.75
	6H	9.10	9.40	9.67	9.96	10.50	8.94	9.24	9.51	9.79	10.34
	8H	10.30	10.53	10.88	11.08	11.65	10.11	10.34	10.69	10.89	11.46
Variation with the observer position at spacings:											
S = 1.0H		1.8/-2.1					1.8/-2.1				
S = 1.5H		2.4/-1.8					2.4/-1.8				
S = 2.0H		2.9/-1.5					2.9/-1.5				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-6.5					-6.5				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: focal e fm

LampCAT: modulo 15.5W 30K irc90

Ballast type: LED driver 350mA

Report No:

Voltage(V): 128.3000

Test No:

Current(A): 0.1220

Number of Lamps: 1

Power (W): 15.6530

Lamp flux(lm): 1265.0

PF: 0.9867

Length(mm): 94

Width(mm): 94

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1017.40, Efficiency(%): 80.43% , Luminous Efficacy(lm/W): 65.00

Central intensity(cd): 3407.305, Maximum intensity(cd): 3407.305

Angle of maximum intensity: C=0.0 γ =0.0

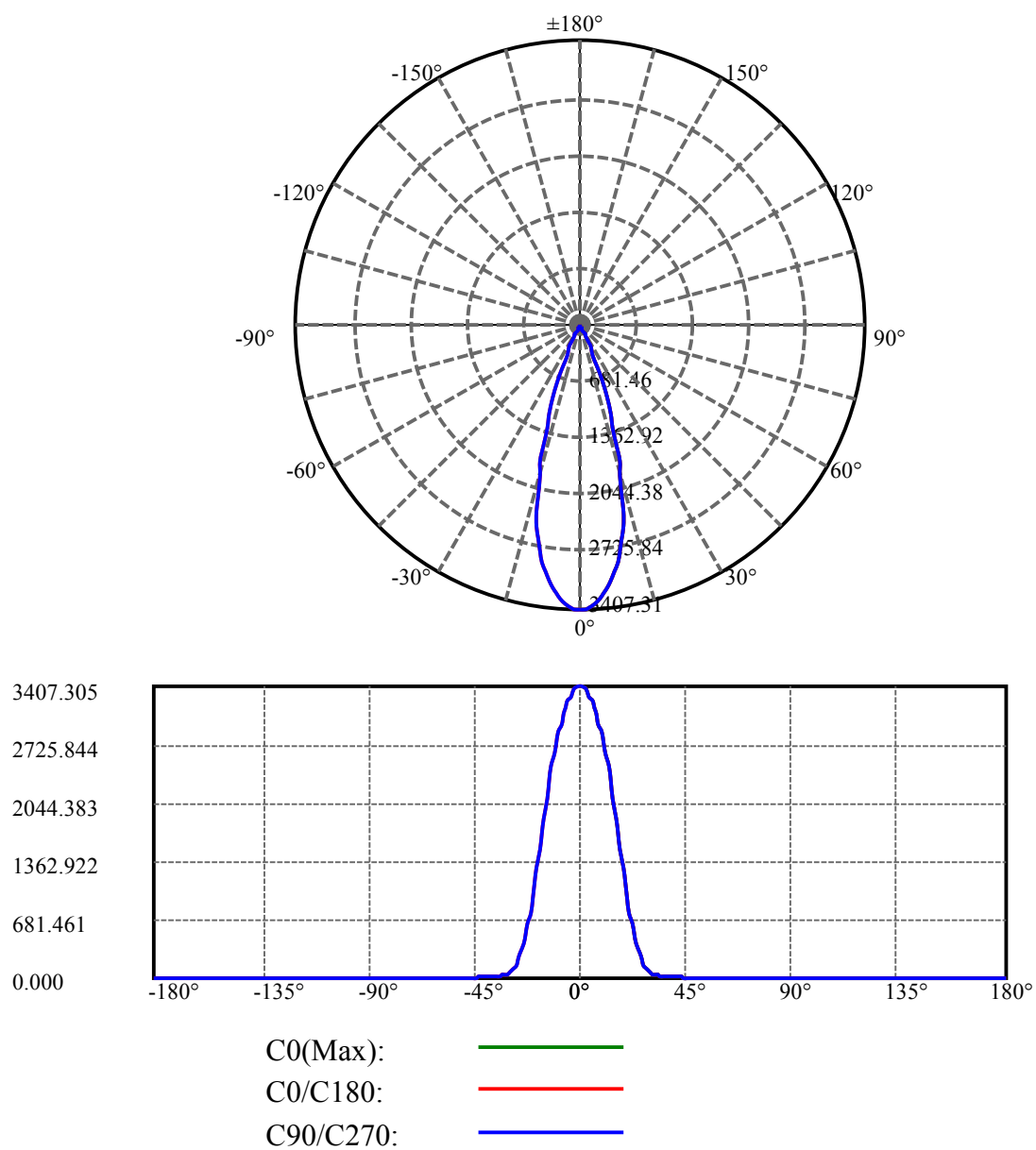
Beam angle of C0 plane : 31.94

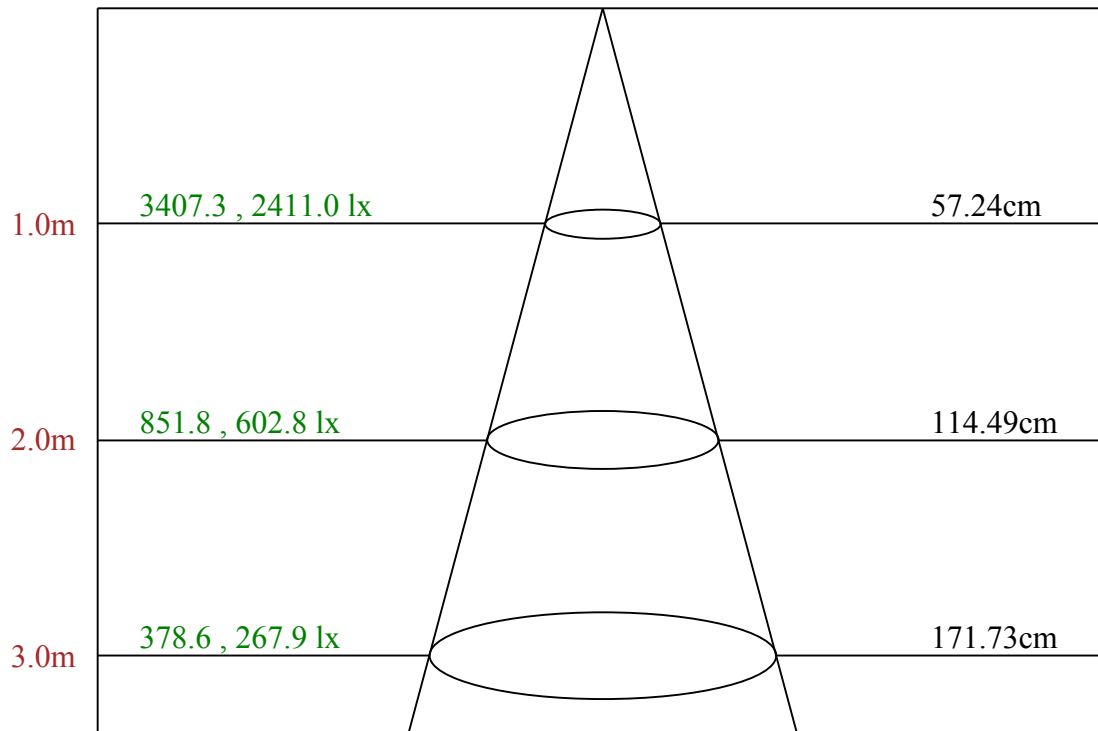
Aveage BeamAngle(IEC 61341):31.94

Equipment: equipamento lumini
Temperature(°C): 23.5

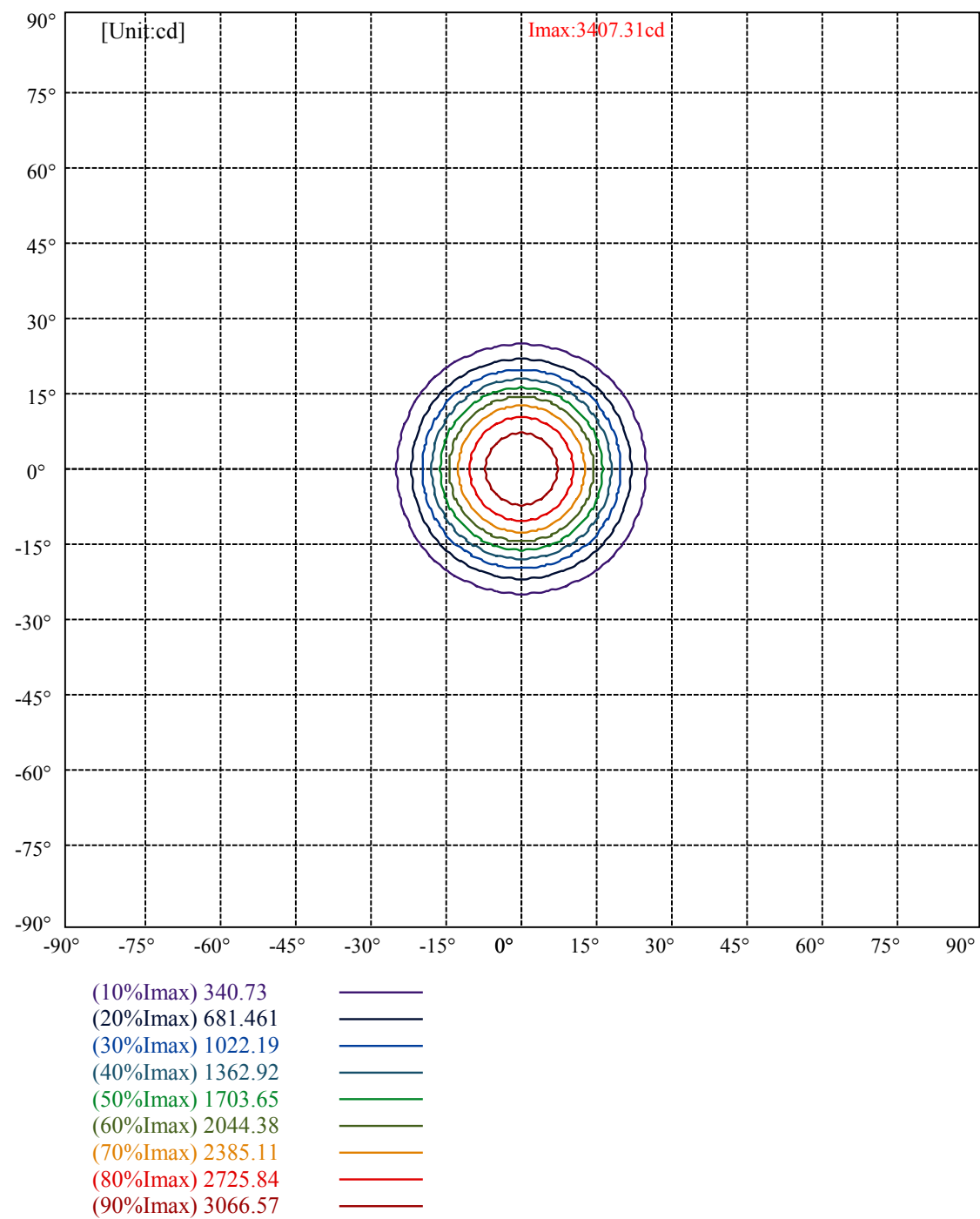
Date: 22/11/2024
Humidity(%): 79.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 31.94



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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	1510	1018	867	853	939	1130	1478	2180	4312
C45	1510	1018	867	853	939	1130	1478	2180	4312
C90	1510	1018	867	853	939	1130	1478	2180	4312

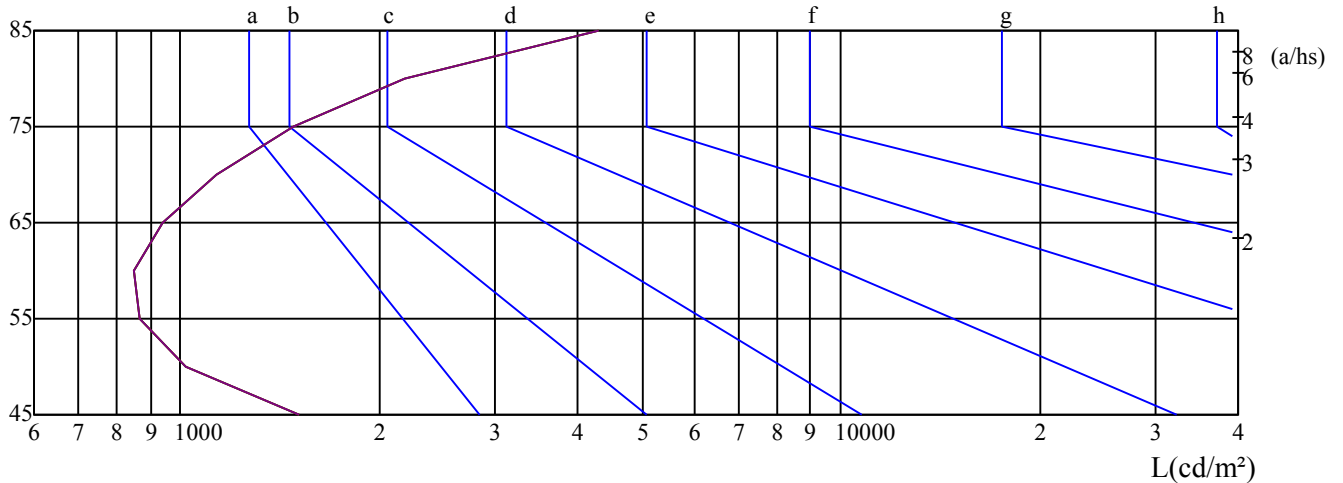
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
939	939	939	1478	1478	1478	4312	4312	4312

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($^{\circ}\text{C}$): 23.5

Date: 22/11/2024
Humidity(%): 79.0%

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	3.43	4.32	3.84	4.68	5.05	2.70	3.59	3.11	3.95	4.33
	3H	4.50	5.30	4.93	5.68	6.08	3.98	4.78	4.41	5.16	5.56
	4H	5.44	6.17	5.88	6.57	6.99	5.03	5.77	5.47	6.17	6.59
	6H	6.80	7.47	7.26	7.89	8.35	6.53	7.20	6.99	7.63	8.08
	8H	7.67	8.31	8.13	8.74	9.20	7.46	8.10	7.92	8.53	8.99
	12H	8.72	9.32	9.19	9.76	10.23	8.53	9.14	9.00	9.58	10.05
4H	2H	3.55	4.28	3.99	4.68	5.11	2.92	3.66	3.37	4.06	4.48
	3H	4.99	5.61	5.46	6.05	6.52	4.59	5.20	5.05	5.64	6.11
	4H	6.26	6.80	6.74	7.26	7.76	5.97	6.50	6.45	6.97	7.47
	6H	7.90	8.38	8.42	8.87	9.37	7.72	8.20	8.24	8.69	9.19
	8H	8.96	9.40	9.49	9.90	10.42	8.82	9.26	9.35	9.76	10.28
	12H	10.21	10.61	10.74	11.10	11.67	10.08	10.48	10.61	10.97	11.54
8H	4H	6.74	7.17	7.26	7.67	8.20	6.50	6.93	7.02	7.43	7.96
	6H	8.70	9.06	9.24	9.57	10.14	8.57	8.92	9.11	9.44	10.00
	8H	10.01	10.31	10.59	10.87	11.42	9.91	10.21	10.48	10.77	11.31
	12H	11.51	11.73	12.09	12.29	12.86	11.41	11.63	11.99	12.19	12.76
12H	4H	6.90	7.30	7.42	7.79	8.36	6.67	7.07	7.20	7.56	8.13
	6H	9.02	9.32	9.59	9.88	10.42	8.90	9.20	9.47	9.76	10.30
	8H	10.41	10.64	10.99	11.19	11.77	10.32	10.54	10.90	11.10	11.67
Variation with the observer position at spacings:											
S = 1.0H		1.4/-1.2					1.4/-1.2				
S = 1.5H		1.4/-1.3					1.4/-1.3				
S = 2.0H		1.5/-1.2					1.5/-1.2				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-7.4					-7.4				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: focal e fc

LampCAT: modulo led 30W 30K irc90

Ballast type: LED driver 700mA

Report No:

Voltage(V): 125.8000

Test No:

Current(A): 0.2180

Number of Lamps: 1

Power (W): 27.4240

Lamp flux(lm): 2860.0

PF: 0.9952

Length(mm): 94

Width(mm): 94

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1982.45, Efficiency(%): 69.32% , Luminous Efficacy(lm/W): 72.29

Central intensity(cd): 11927.280, Maximum intensity(cd): 11927.280

Angle of maximum intensity: C=0.0 γ =0.0

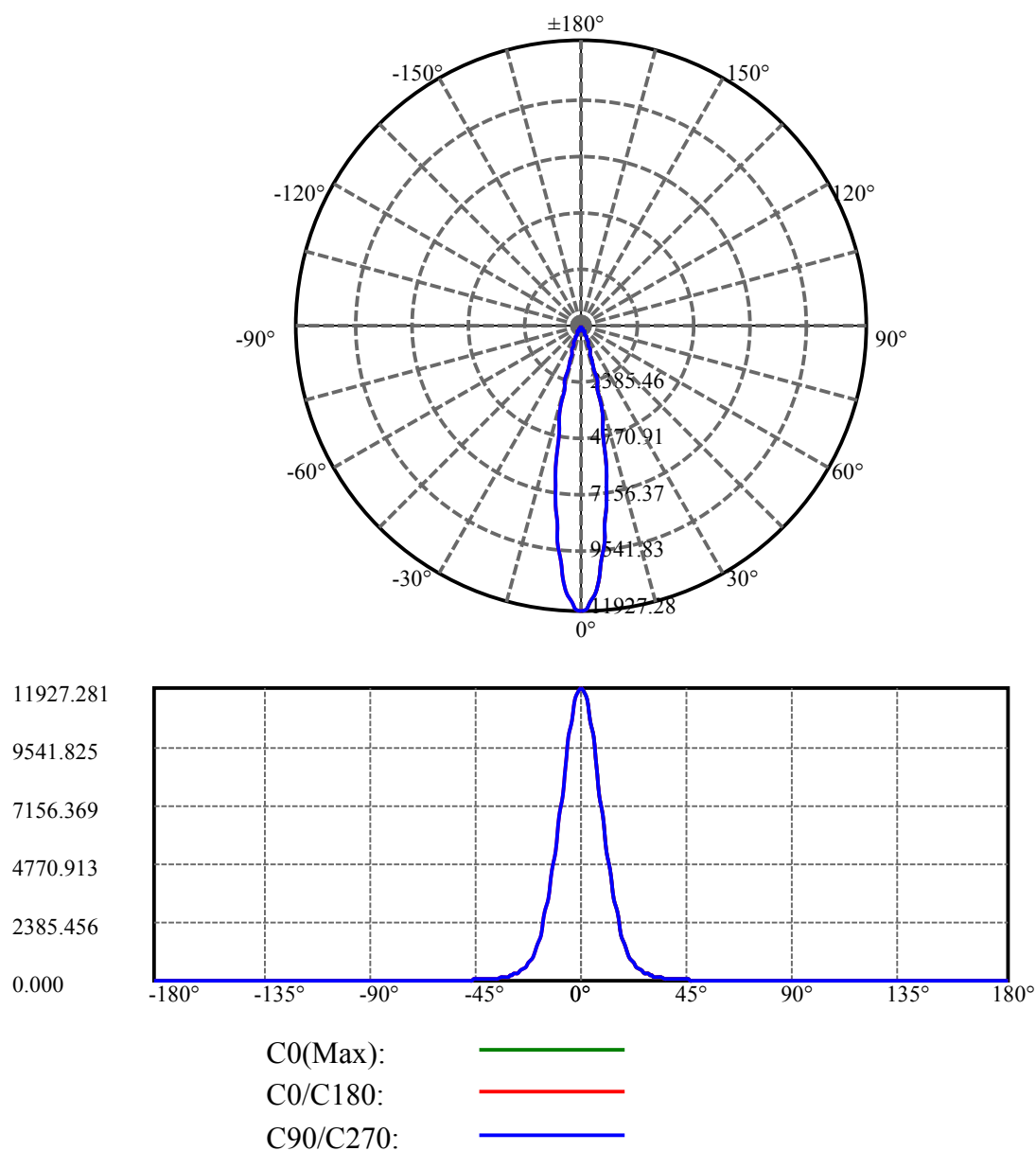
Beam angle of C0 plane : 20.13

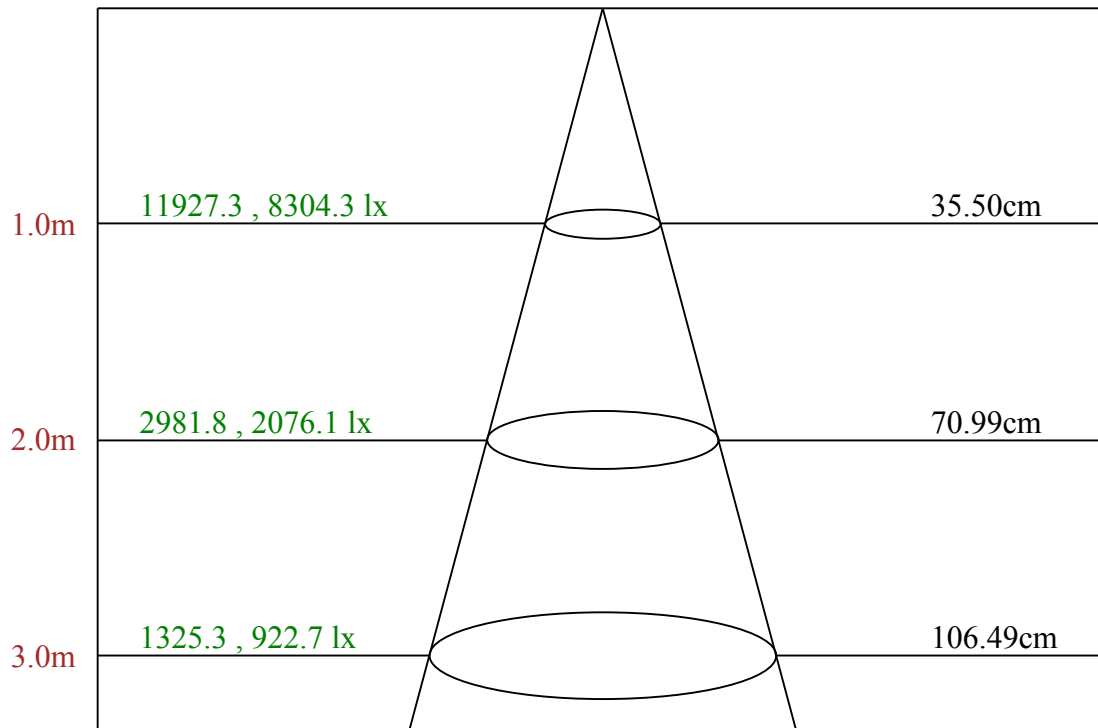
Aveage BeamAngle(IEC 61341):20.13

Equipment: equipamento lumini
Temperature(°C): 23.5

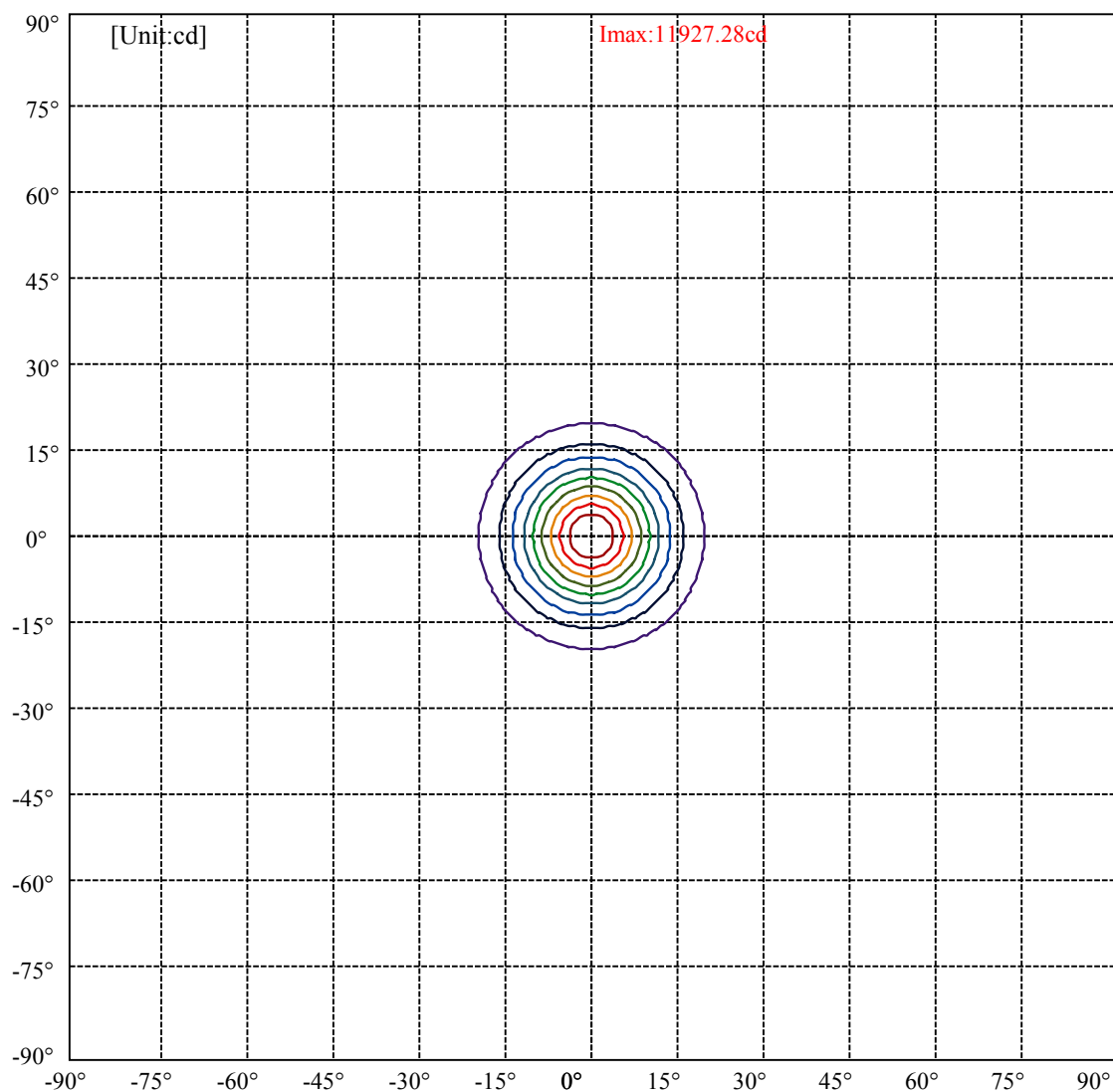
Date: 22/11/2024
Humidity(%): 79.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 20.13



(10%Imax) 1192.73	—
(20%Imax) 2385.46	—
(30%Imax) 3578.18	—
(40%Imax) 4770.91	—
(50%Imax) 5963.64	—
(60%Imax) 7156.37	—
(70%Imax) 8349.1	—
(80%Imax) 9541.83	—
(90%Imax) 10734.6	—

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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	6503	2767	1791	1738	1788	2127	2743	4030	7944
C45	6503	2767	1791	1738	1788	2127	2743	4030	7944
C90	6503	2767	1791	1738	1788	2127	2743	4030	7944

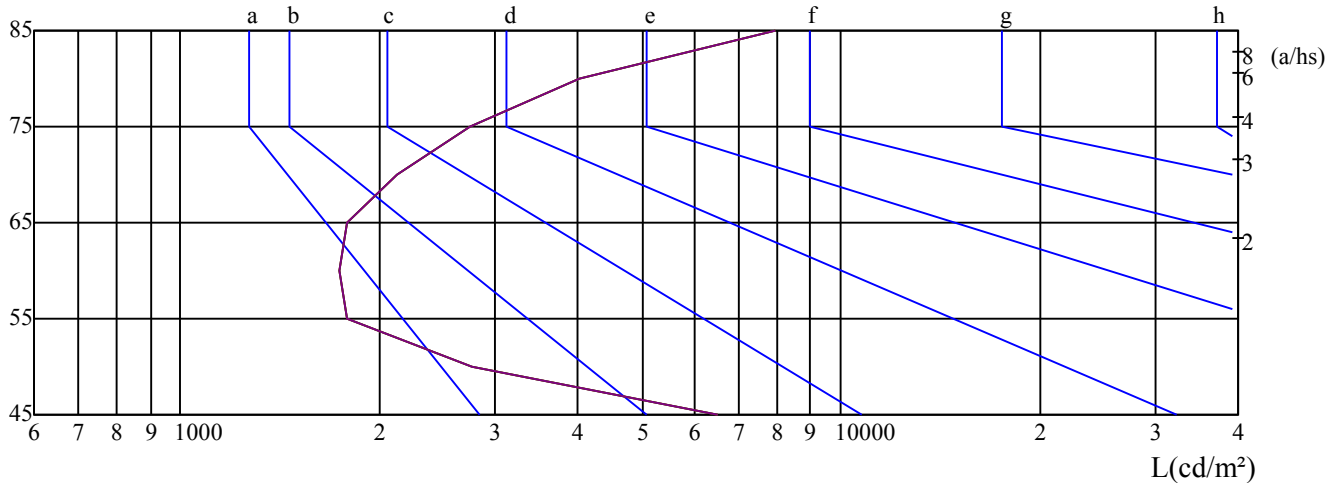
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1788	1788	1788	2743	2743	2743	7944	7944	7944

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): 23.5

Date: 22/11/2024
Humidity(%): 79.0%

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	9.47	10.37	9.87	10.73	11.10	9.09	9.99	9.49	10.35	10.72
	3H	9.73	10.54	10.16	10.92	11.32	9.39	10.19	9.81	10.57	10.97
	4H	10.08	10.83	10.52	11.22	11.64	9.76	10.51	10.20	10.90	11.32
	6H	10.76	11.43	11.21	11.85	12.30	10.47	11.15	10.93	11.57	12.02
	8H	11.25	11.89	11.71	12.32	12.78	10.97	11.62	11.43	12.05	12.51
	12H	11.94	12.55	12.40	12.99	13.46	11.68	12.29	12.14	12.73	13.20
4H	2H	9.31	10.05	9.75	10.45	10.87	8.95	9.69	9.39	10.09	10.51
	3H	9.75	10.38	10.22	10.81	11.28	9.44	10.07	9.91	10.50	10.97
	4H	10.36	10.90	10.84	11.36	11.86	10.09	10.62	10.56	11.09	11.59
	6H	11.32	11.79	11.83	12.29	12.79	11.08	11.55	11.59	12.05	12.55
	8H	12.04	12.48	12.56	12.98	13.50	11.81	12.25	12.33	12.75	13.27
	12H	13.00	13.40	13.52	13.89	14.46	12.78	13.18	13.31	13.68	14.24
8H	4H	10.55	10.99	11.08	11.49	12.01	10.31	10.75	10.83	11.24	11.77
	6H	11.82	12.17	12.36	12.69	13.25	11.61	11.97	12.16	12.49	13.05
	8H	12.81	13.11	13.38	13.67	14.21	12.62	12.92	13.19	13.48	14.02
	12H	14.05	14.28	14.63	14.83	15.40	13.87	14.10	14.45	14.65	15.22
12H	4H	10.62	11.03	11.15	11.52	12.09	10.39	10.80	10.92	11.29	11.86
	6H	12.04	12.34	12.61	12.90	13.45	11.86	12.16	12.43	12.72	13.26
	8H	13.12	13.35	13.70	13.90	14.47	12.95	13.17	13.53	13.73	14.30
Variation with the observer position at spacings:											
S = 1.0H		2.5/-2.6					2.5/-2.6				
S = 1.5H		3.3/-2.1					3.3/-2.1				
S = 2.0H		3.9/-1.7					3.9/-1.7				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-3.4					-3.4				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: focal e fm

LampCAT: modulo led 30W 30K irc90

Ballast type: LED driver 700mA

Report No:

Voltage(V): 125.8000

Test No:

Current(A): 0.2180

Number of Lamps: 1

Power (W): 27.4240

Lamp flux(lm): 2860.0

PF: 0.9950

Length(mm): 94

Width(mm): 94

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2144.97, Efficiency(%): 75.00% , Luminous Efficacy(lm/W): 78.22

Central intensity(cd): 6309.682, Maximum intensity(cd): 6309.682

Angle of maximum intensity: C=0.0 γ =0.0

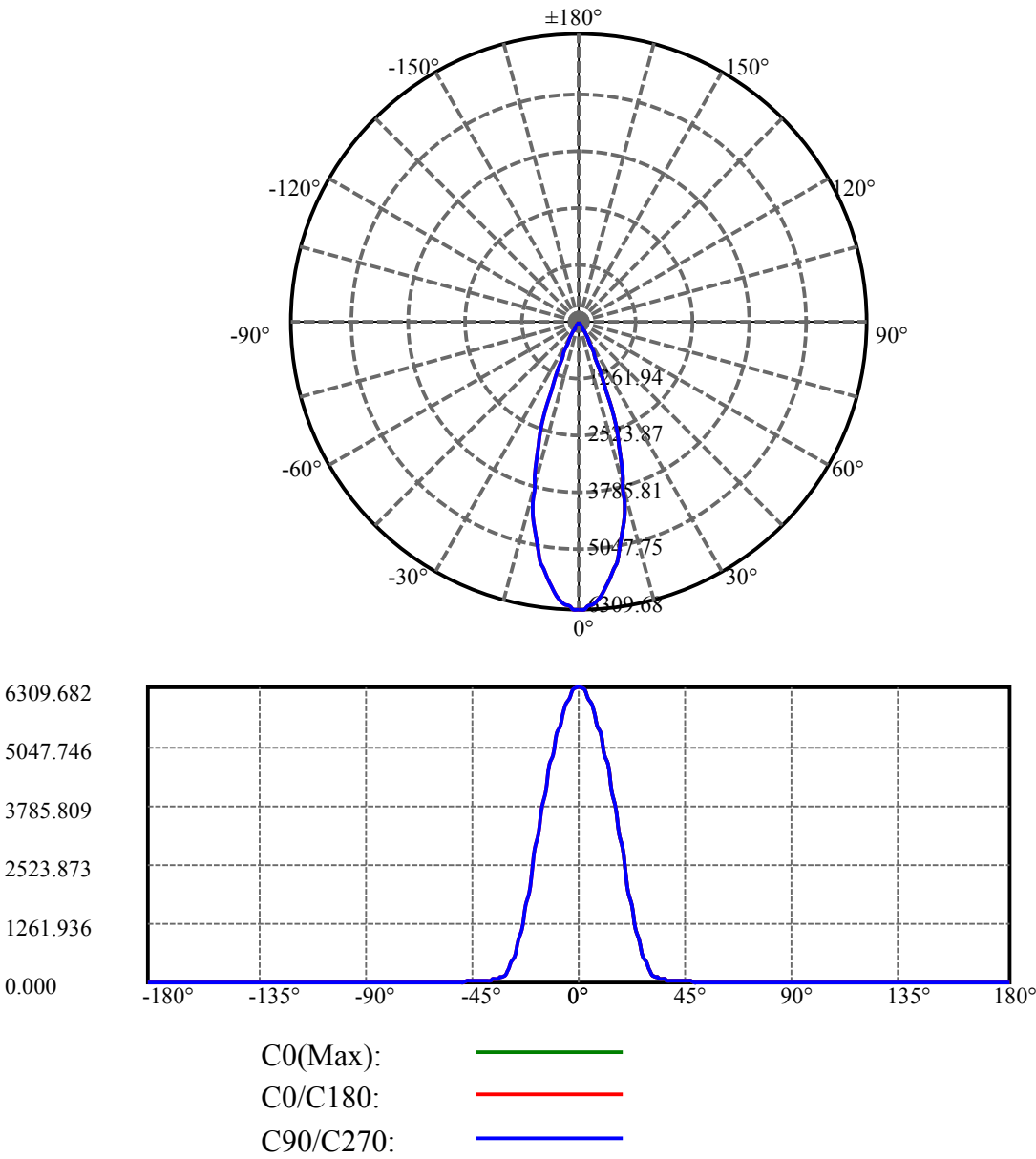
Beam angle of C0 plane : 34.02

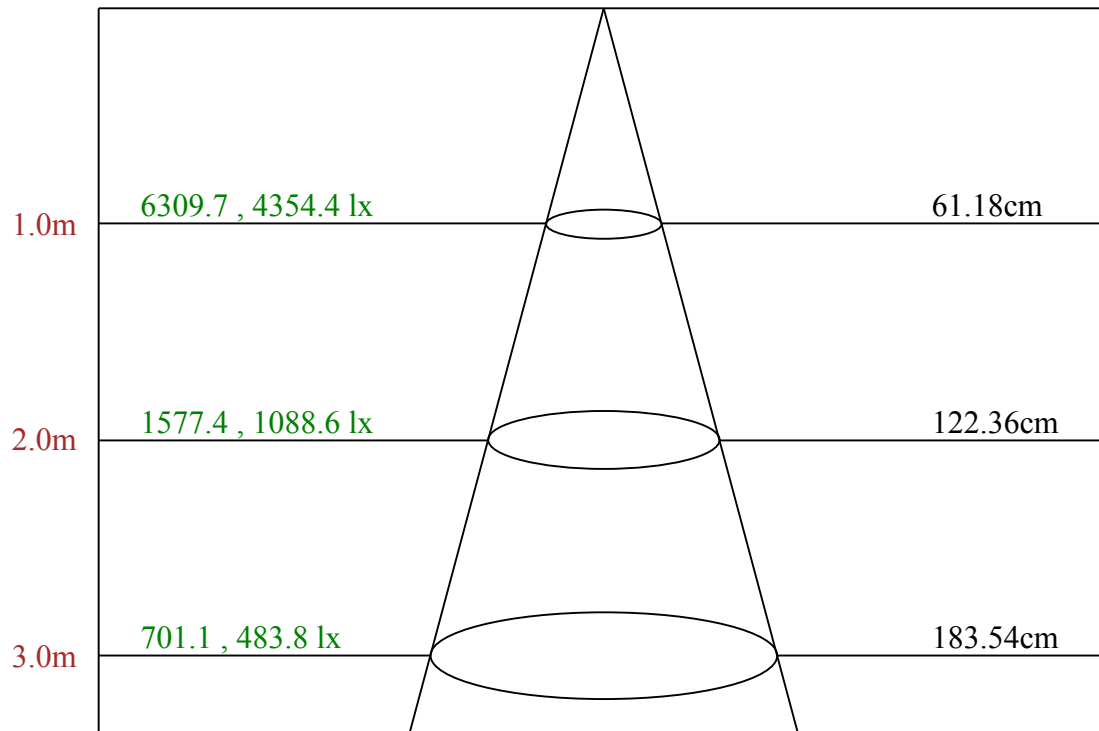
Aveage BeamAngle(IEC 61341):34.02

Equipment: equipamento lumini
Temperature(°C): 23.5

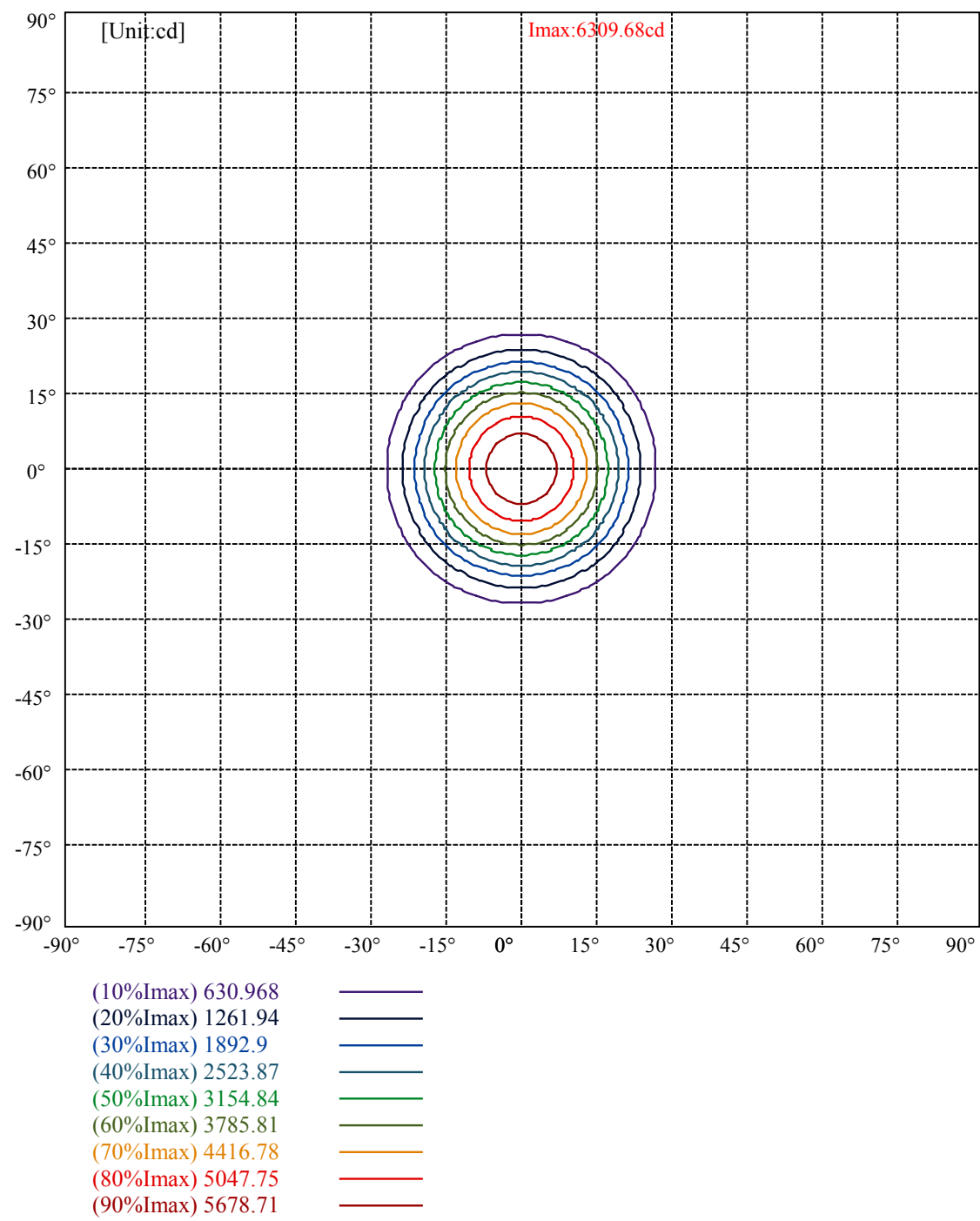
Date: 22/11/2024
Humidity(%): 79.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 34.02



Luminance Table

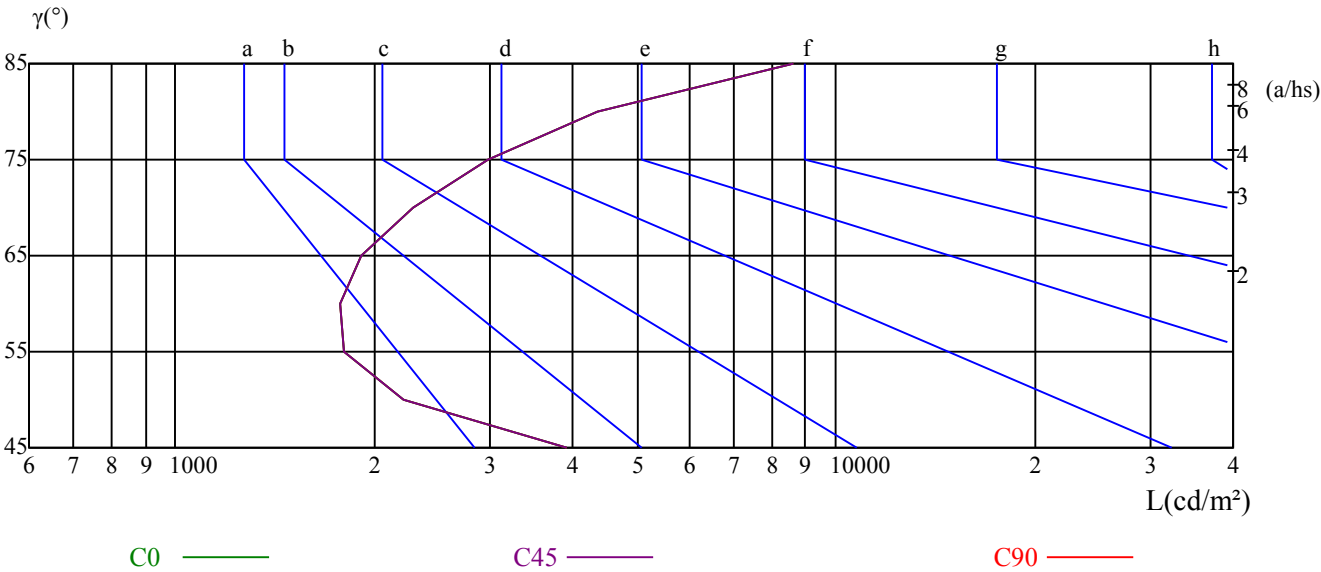
γ	45	50	55	60	65	70	75	80	85
C0	3922	2221	1805	1775	1916	2298	2972	4371	8640
C45	3922	2221	1805	1775	1916	2298	2972	4371	8640
C90	3922	2221	1805	1775	1916	2298	2972	4371	8640

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1916	1916	1916	2972	2972	2972	8640	8640	8640

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	7.44	8.34	7.85	8.69	9.06	7.03	7.92	7.44	8.28	8.65
	3H	8.07	8.87	8.50	9.25	9.65	7.75	8.54	8.17	8.92	9.32
	4H	8.71	9.45	9.15	9.85	10.27	8.44	9.17	8.88	9.57	9.99
	6H	9.77	10.44	10.22	10.86	11.31	9.54	10.21	10.00	10.63	11.08
	8H	10.47	11.11	10.93	11.54	12.00	10.27	10.92	10.74	11.34	11.80
	12H	11.38	11.98	11.84	12.42	12.89	11.21	11.82	11.68	12.25	12.72
4H	2H	7.41	8.14	7.85	8.54	8.96	7.03	7.77	7.47	8.17	8.59
	3H	8.33	8.95	8.80	9.39	9.86	8.06	8.68	8.53	9.11	9.58
	4H	9.30	9.83	9.78	10.30	10.80	9.08	9.62	9.56	10.08	10.58
	6H	10.66	11.13	11.17	11.62	12.12	10.49	10.96	11.00	11.45	11.95
	8H	11.58	12.01	12.10	12.51	13.04	11.43	11.87	11.96	12.37	12.89
	12H	12.72	13.12	13.25	13.61	14.18	12.59	12.99	13.12	13.49	14.05
8H	4H	9.66	10.10	10.19	10.60	11.12	9.48	9.92	10.00	10.41	10.94
	6H	11.35	11.71	11.89	12.22	12.78	11.21	11.57	11.76	12.09	12.65
	8H	12.54	12.84	13.11	13.40	13.94	12.43	12.72	13.00	13.28	13.83
	12H	13.94	14.17	14.52	14.72	15.29	13.85	14.07	14.43	14.63	15.20
12H	4H	9.79	10.19	10.31	10.68	11.25	9.62	10.02	10.14	10.51	11.08
	6H	11.64	11.94	12.21	12.50	13.04	11.52	11.81	12.09	12.37	12.92
	8H	12.91	13.14	13.49	13.69	14.26	12.81	13.04	13.39	13.59	14.16
Variation with the observer position at spacings:											
S = 1.0H		2.5/-1.5					2.5/-1.5				
S = 1.5H		2.9/-1.5					2.9/-1.5				
S = 2.0H		3.2/-1.3					3.2/-1.3				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-4.3					-4.3				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: focal diffusa e

LampCAT: modulo led 15.5W 30K irc 90

Ballast type: led driver 350mA

Report No:

Voltage(V): 128.3000

Test No:

Current(A): 0.1220

Number of Lamps: 1

Power (W): 15.6530

Lamp flux(lm): 1265.0

PF: 0.9950

Length(mm): 94

Width(mm): 94

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 277.37, Efficiency(%): 21.93% , Luminous Efficacy(lm/W): 17.72

Central intensity(cd): 211.888, Maximum intensity(cd): 211.888

Angle of maximum intensity: C=0.0 γ =0.0

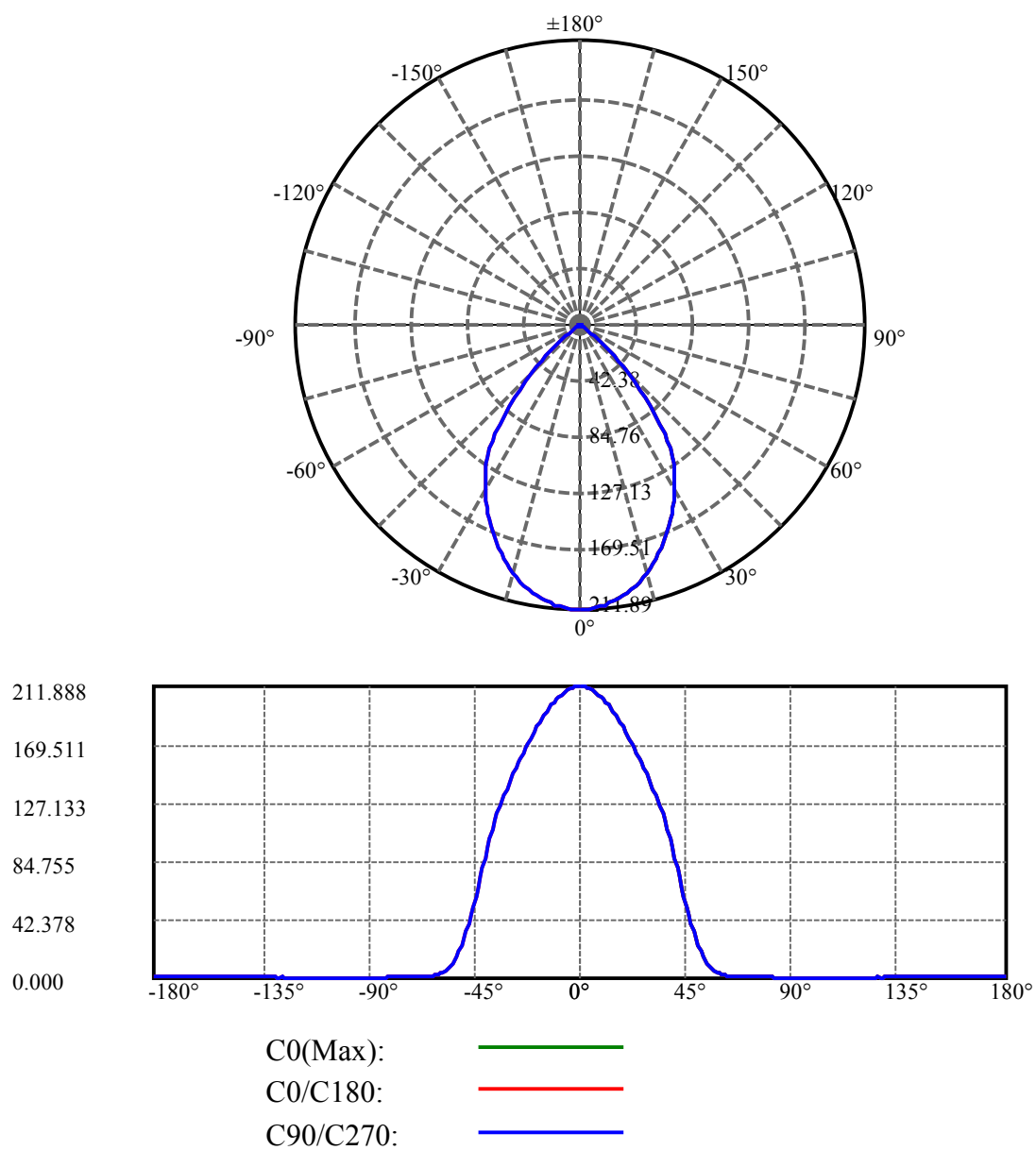
Beam angle of C0 plane : 74.74

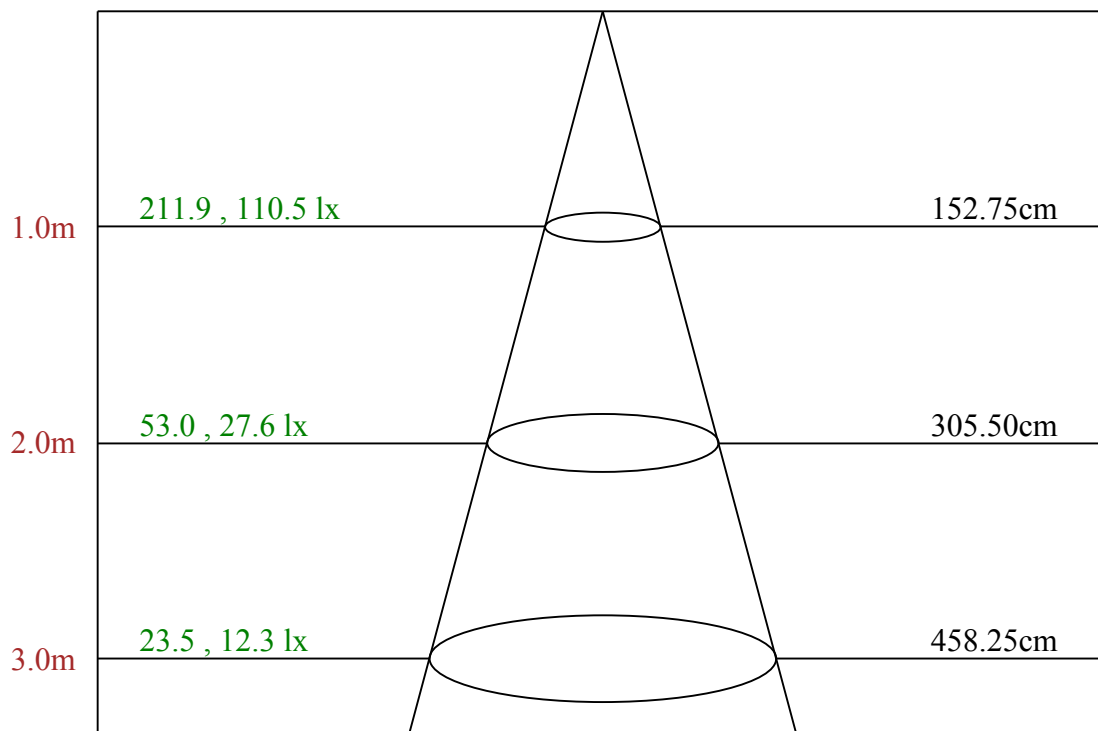
Aveage BeamAngle(IEC 61341):74.74

Equipment: equipamento lumini
Temperature(°C): 25.0

Date: 22/11/2024
Humidity(%): 76.0%

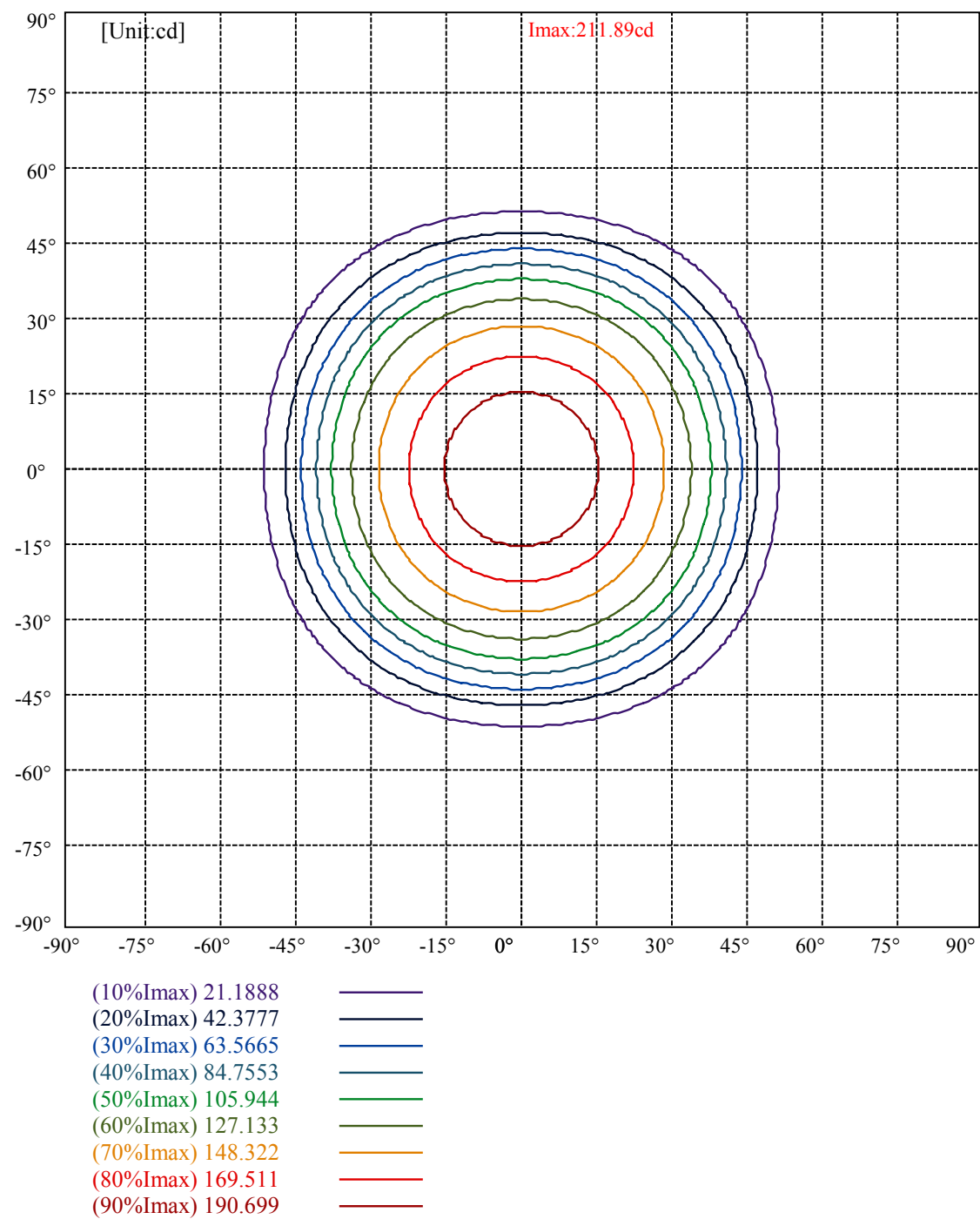
Operator: 01
Distance(m): 6.90





Max , Ave

Beam angle of C0 plane 74.74



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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	8298	4186	1684	638	370	343	364	450	835
C45	8298	4186	1684	638	370	343	364	450	835
C90	8298	4186	1684	638	370	343	364	450	835

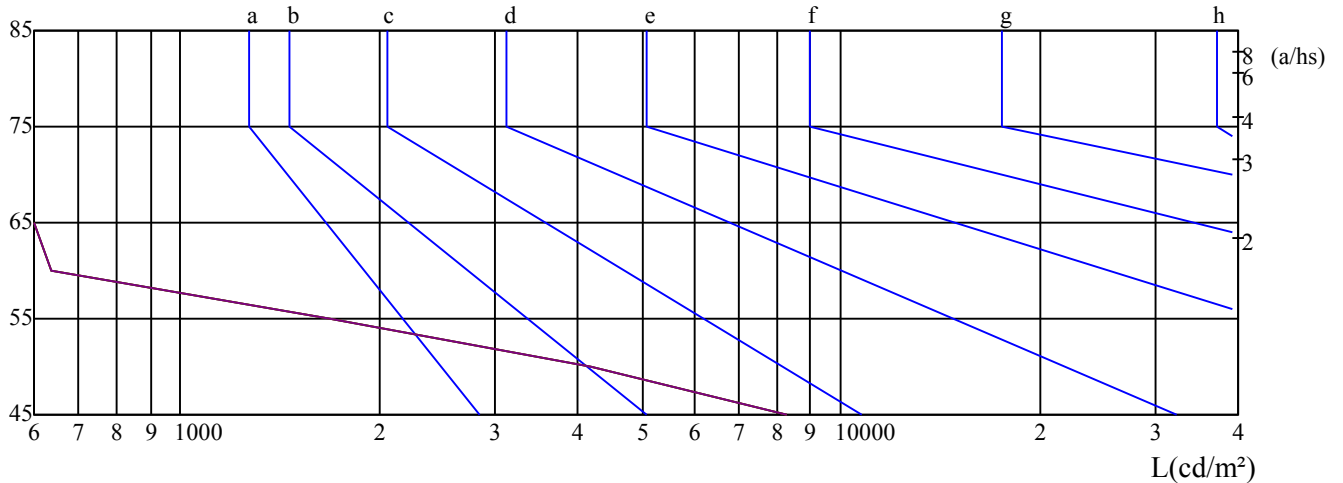
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
370	370	370	364	364	364	835	835	835

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($^{\circ}\text{C}$): 25.0

Date: 22/11/2024
Humidity(%): 76.0%

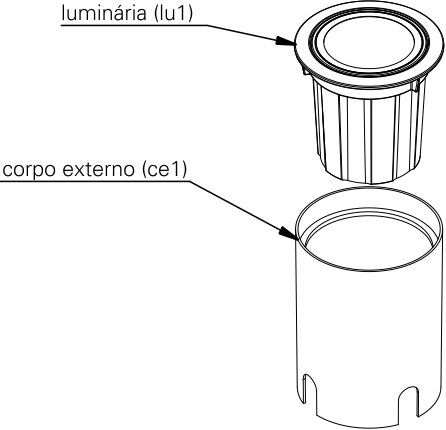
Operator: 01
Distance(m): 6.90

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	16.91	18.02	17.31	18.38	18.74	17.01	18.12	17.41	18.48	18.84
	3H	16.75	17.73	17.16	18.10	18.49	16.85	17.83	17.26	18.21	18.60
	4H	16.66	17.57	17.09	17.96	18.37	16.76	17.67	17.19	18.06	18.47
	6H	16.60	17.43	17.04	17.84	18.28	16.70	17.53	17.14	17.94	18.38
	8H	16.53	17.33	16.98	17.75	18.20	16.63	17.43	17.08	17.85	18.30
	12H	16.48	17.24	16.93	17.66	18.12	16.58	17.34	17.03	17.76	18.22
4H	2H	16.68	17.59	17.11	17.98	18.39	16.77	17.68	17.20	18.07	18.49
	3H	16.48	17.23	16.94	17.66	18.12	16.58	17.33	17.04	17.76	18.22
	4H	16.43	17.08	16.90	17.54	18.03	16.53	17.18	17.00	17.64	18.13
	6H	16.32	16.90	16.82	17.38	17.87	16.42	16.99	16.92	17.48	17.97
	8H	16.28	16.82	16.80	17.30	17.82	16.38	16.91	16.89	17.40	17.92
	12H	16.26	16.75	16.78	17.23	17.79	16.36	16.85	16.87	17.33	17.89
8H	4H	16.25	16.79	16.77	17.28	17.79	16.35	16.88	16.86	17.37	17.89
	6H	16.13	16.58	16.67	17.08	17.64	16.23	16.67	16.76	17.18	17.73
	8H	16.14	16.52	16.70	17.07	17.61	16.24	16.62	16.80	17.17	17.71
	12H	16.13	16.44	16.70	16.98	17.54	16.23	16.53	16.79	17.08	17.64
12H	4H	16.21	16.70	16.72	17.18	17.74	16.30	16.80	16.82	17.28	17.84
	6H	16.12	16.50	16.68	17.05	17.59	16.22	16.60	16.78	17.15	17.69
	8H	16.10	16.40	16.66	16.95	17.51	16.19	16.50	16.76	17.05	17.61
Variation with the observer position at spacings:											
S = 1.0H		2.4/-8.0					2.4/-8.0				
S = 1.5H		4.6/-12.2					4.6/-12.2				
S = 2.0H		6.7/-11.6					6.7/-11.6				
Standard tables:		BK0					BK0				
Uncorrected UGR		-2.7					-2.7				

依据CIE Publ. 117 计算 UGR, S/H = 0.25

focal

focal e
focal e difusa



atenção!

na instalação o profissional deve ser qualificado pela norma nacional nbr-5410 e de prevenção de acidentes nr-10, vigentes para segurança da instalação e garantia do produto.
não abra e nem faça modificações elétricas ou mecânicas no produto, não utilize de materiais selantes como silicone para vedação, tais procedimentos acarretará na perda da garantia e pode trazer riscos aos usuários.
nunca instale a luminária com cabo danificado, e somente a instale para a finalidade que foi projetada.
nunca transporte a luminária tracionando-a pelo cabo de alimentação elétrica.
prever na instalação elétrica disjuntor diferencial residual (dr) de sensibilidade 30ma.
por questões de segurança, as instalações em locais próximos a piscina e em áreas molhadas, é preciso respeitar uma distância mínima de 3,5m entre a luminária de tensão elétrica alternada e a área molhada.
certifique-se de conectar a luminária de tensão alternada (110Vac ou 220Vac) ao sistema de aterramento elétrico. em caso de luminária com driver em ponto remoto, tensão elétrica contínua, o sistema de aterramento não deve ser conectado na luminária.
manter sempre a luminária limpa para obter melhores resultados luminosos e garantir vida útil do produto, limpe com um pano macio e produtos com pH neutro, sem álcool, sem solventes e sem agentes abrasivos para evitar riscos e deformações à luminária.
as luminárias tem pintura protetora para ambientes de pH entre 5 a 8 como padrão, para acidez ou alcalinidade diversos, deverão ser adotadas medidas de proteção diferenciadas, para esses casos entrar em contato com a lumini.

especificações técnicas

fonte de luz
módulo led integrado (incluso)

índice de proteção
IP65 - luminária para uso externo / interno

peso
focal e - 2,27 kg
focal e difusa - 2,27 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
1 corpo externo

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

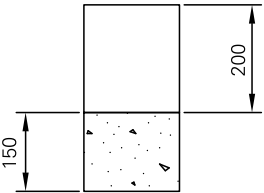
antes de iniciar a instalação, certifique-se que a energia elétrica esteja desligada.

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

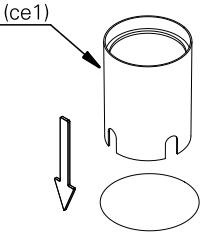
instalação passo a passo



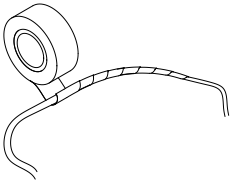
1. crie um nicho com as dimensões abaixo.
para instalação em terra preencha o fundo do nicho com 150mm de brita mais areia.
para instalação em alvenaria, desconsidere a brita e crie um sistema de drenagem.



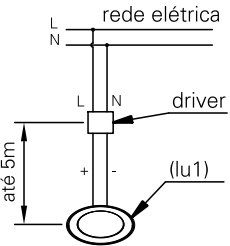
2. insira o corpo externo (ce1) no nicho e fixe-o de modo que seu topo fique faceando a superfície do piso acabado.



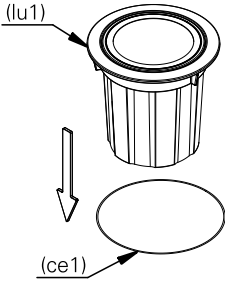
3. faça a ligação elétrica com aterramento. isole os fios separadamente com fita isolante e autofusão. os fios devem ser sempre isolados com no mínimo duas camadas de fita sem corte. é importante que a fita fique bem esticada e com a mesma espessura do isolamento do condutor.



4. em caso de driver em ponto remoto, faça a ligação respeitando a distância até 5m entre a luminária (lu1) e o driver, para não acarretar no mal funcionamento.



5. encaixe a luminária no corpo externo.



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

