



mikro e

linha de mini projetores circulares e orientáveis para tecnologia led em alumínio tratado e pintado por processo eletrostático nas cores padrão lumini, possibilidade de aberturas de fecho concentrado, médio e aberto.

informações técnicas

fonte de luz
LED integrado

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

vida útil
50.000h

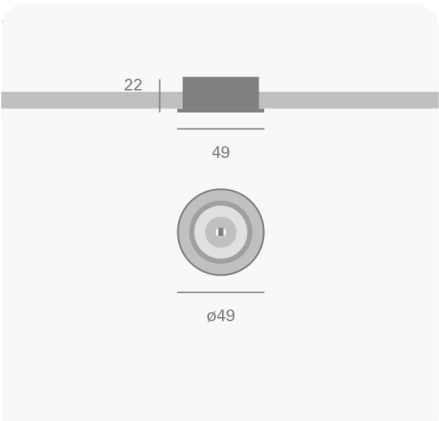
potência (W), fecho, temperatura de cor (K),
fluxo nominal (lm nominal), fluxo útil (lm útil)

W		K	lm nominal	lm útil
1	c	2700		
1	m	2700		
1	a	2700		
1	c	3000	135	93
1	m	3000	135	112
1	a	3000	135	89
1	c	4000		
1	m	4000		
1	a	4000		
2	c	2700		
2	m	2700		
2	a	2700		
2	c	3000	240	144
2	m	3000	240	182
2	a	3000	240	155
2	c	4000		
2	m	4000		
2	a	4000		

equipamentos
LED driver 350mA (incluso, ponto remoto)
LED driver 700mA (incluso, ponto remoto)

controle
on/off

instalação
forro de gesso
forro modular
marcenaria



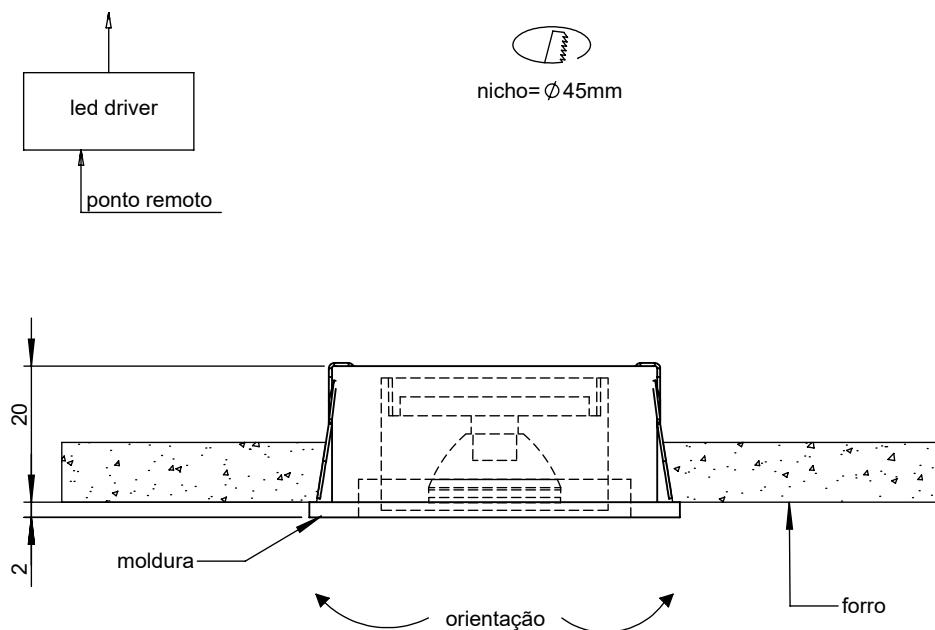
acabamentos e cores

cores



vista lateral

dimensões em milímetros



mikro e

folha
1/1

escala
1:1

data
01/06/2023

desenhista
orlando

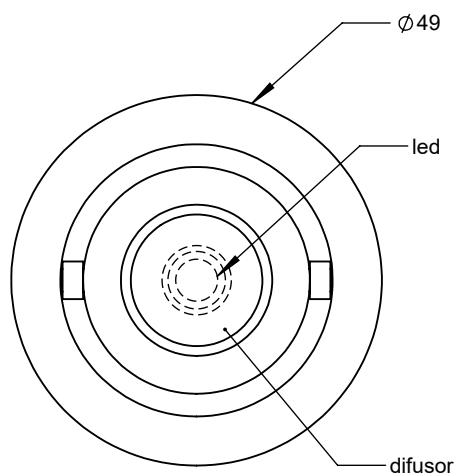
aprovação
edmilson

revisões

01/06/2023

vista inferior

dimensões em milímetros



para maiores informações,
consulte a área técnica
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LumCAT:

Luminaire: mikro e fa

LampCAT: modulo led 1W 30K irc 90

Ballast type: led driver 350mA

Report No:

Voltage(V): 127.1900

Test No:

Current(A): 0.0300

Number of Lamps: 1

Power (W): 1.4770

Lamp flux(lm): 135.0

PF: 0.3890

Length(mm): 20

Width(mm): 20

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 89.27, Efficiency(%): 66.13% , Luminous Efficacy(lm/W): 60.44

Central intensity(cd): 143.509, Maximum intensity(cd): 143.509

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

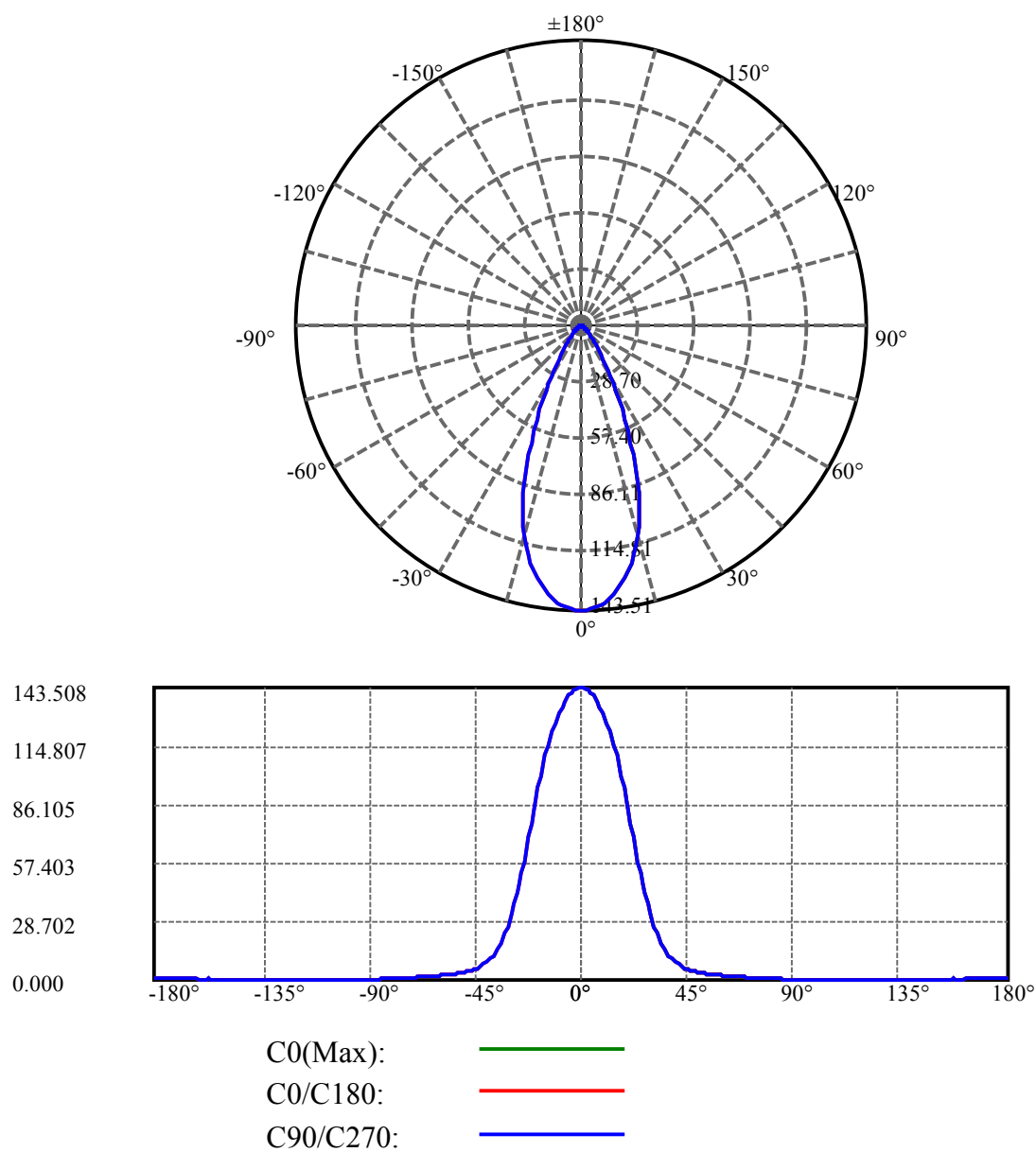
Beam angle of C0 plane : 43.44

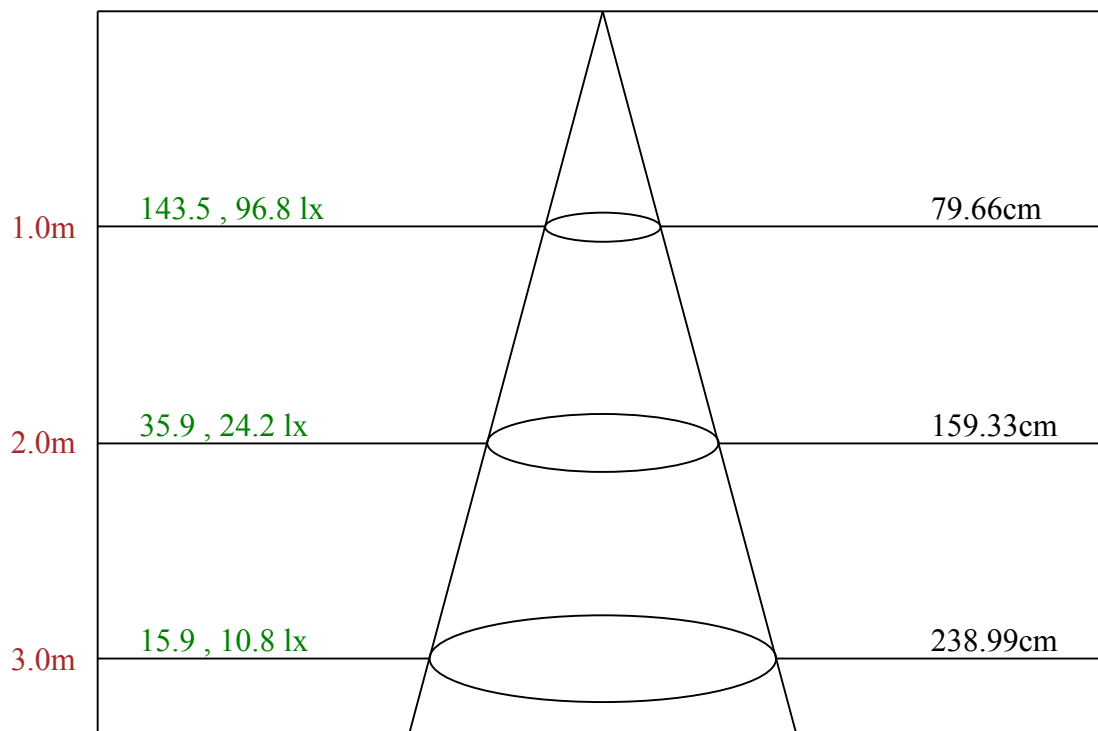
Average BeamAngle(IEC 61341): 43.44

Equipment: equipamento lumini
Temperature(°C): 26.4

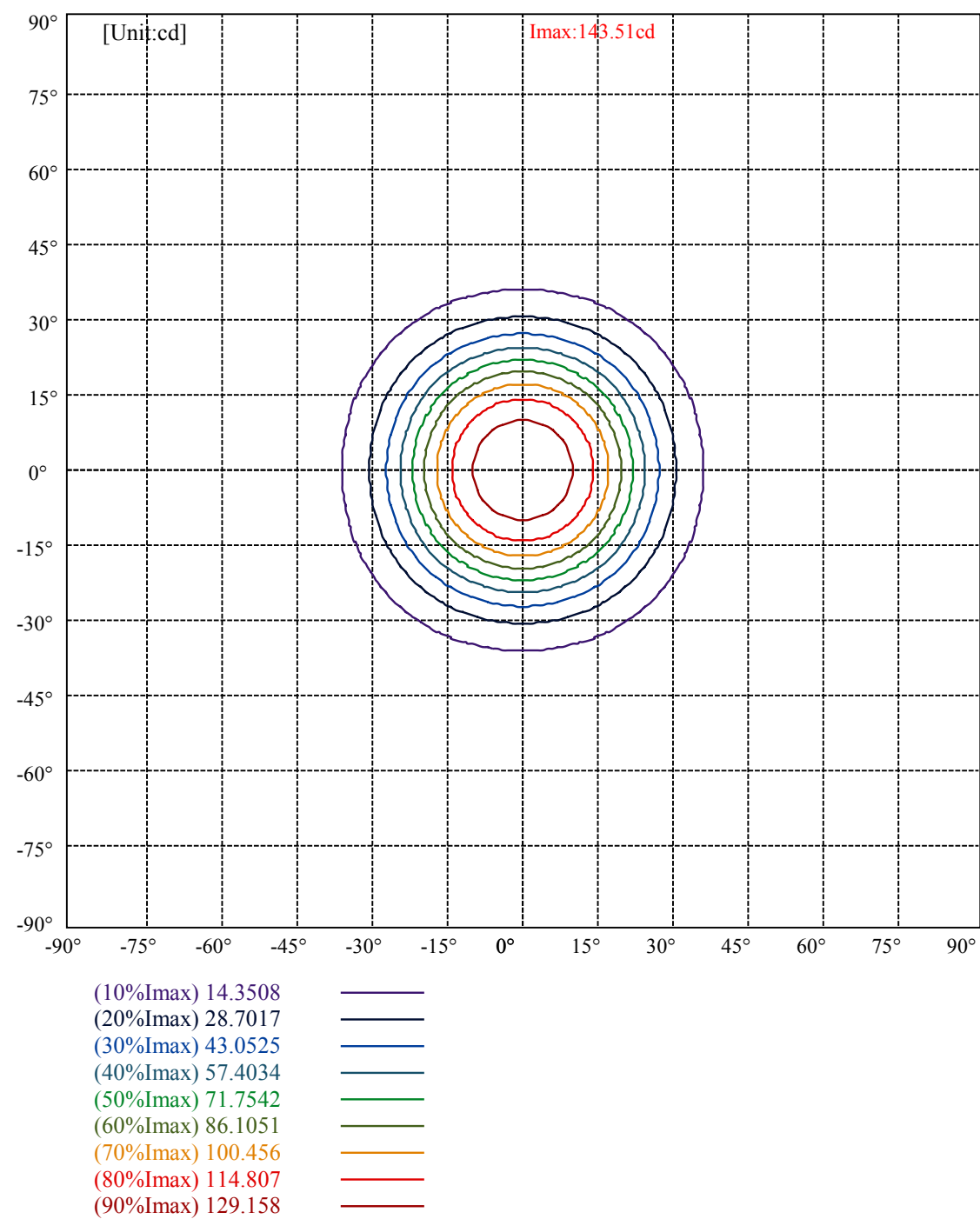
Date: 27/02/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 43.44



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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	18537	14050	12010	10980	10139	9396	8623	9682	11779
C45	18537	14050	12010	10980	10139	9396	8623	9682	11779
C90	18537	14050	12010	10980	10139	9396	8623	9682	11779

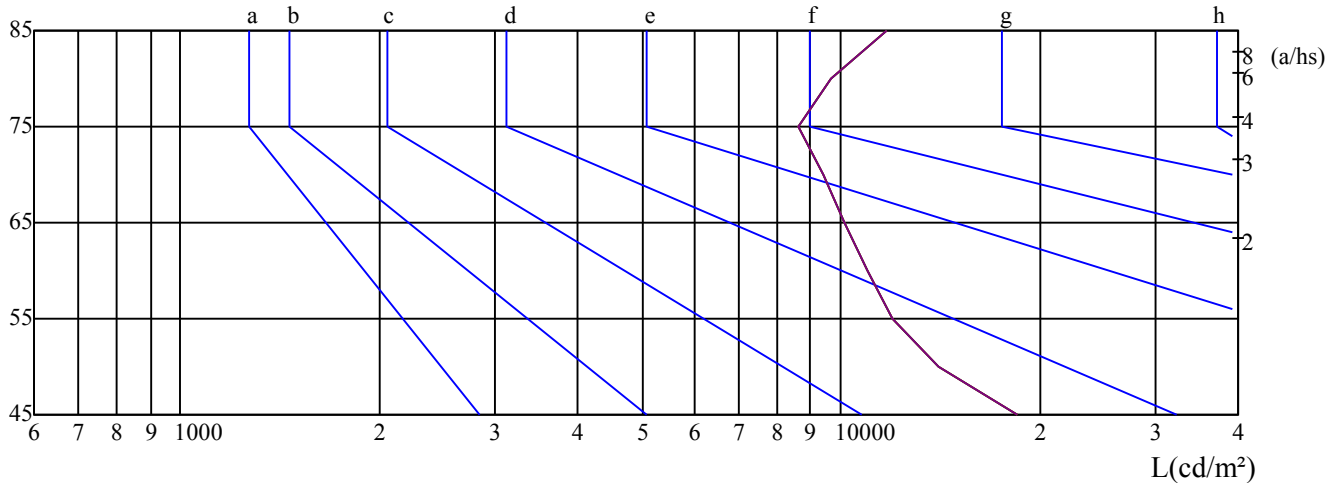
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10139	10139	10139	8623	8623	8623	11779	11779	11779

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): 26.4

Date: 27/02/2025
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	19.39	20.41	19.79	20.77	21.15	19.77	20.79	20.18	21.15	21.53
	3H	20.13	21.04	20.56	21.43	21.83	20.27	21.18	20.69	21.56	21.97
	4H	20.51	21.35	20.95	21.75	22.18	20.45	21.30	20.89	21.70	22.12
	6H	20.87	21.65	21.33	22.07	22.52	20.69	21.46	21.15	21.89	22.34
	8H	21.03	21.77	21.49	22.20	22.66	20.79	21.54	21.26	21.97	22.43
	12H	21.21	21.91	21.68	22.35	22.82	20.83	21.53	21.29	21.97	22.44
4H	2H	19.56	20.41	20.00	20.81	21.23	19.89	20.74	20.34	21.14	21.56
	3H	20.52	21.23	20.98	21.67	22.14	20.58	21.29	21.05	21.73	22.20
	4H	21.09	21.70	21.57	22.17	22.67	20.94	21.56	21.42	22.02	22.52
	6H	21.57	22.12	22.08	22.61	23.11	21.29	21.84	21.80	22.33	22.84
	8H	21.83	22.33	22.35	22.83	23.36	21.49	22.00	22.02	22.50	23.02
	12H	22.12	22.58	22.64	23.08	23.65	21.60	22.07	22.13	22.56	23.13
8H	4H	21.25	21.75	21.77	22.25	22.78	21.12	21.62	21.64	22.12	22.64
	6H	21.90	22.32	22.45	22.84	23.40	21.65	22.06	22.19	22.58	23.14
	8H	22.32	22.67	22.89	23.23	23.78	21.99	22.34	22.56	22.90	23.45
	12H	22.74	23.02	23.32	23.57	24.14	22.18	22.46	22.76	23.01	23.58
12H	4H	21.26	21.73	21.79	22.22	22.79	21.13	21.60	21.66	22.09	22.66
	6H	22.01	22.36	22.58	22.92	23.47	21.77	22.12	22.33	22.68	23.22
	8H	22.44	22.72	23.02	23.27	23.84	22.12	22.40	22.70	22.95	23.52
Variation with the observer position at spacings:											
S = 1.0H		2.0/-1.4					2.0/-1.4				
S = 1.5H		3.2/-1.5					3.2/-1.5				
S = 2.0H		4.5/-1.5					4.5/-1.5				
Standard tables:		BK3					BK3				
Uncorrected UGR		1.9					1.9				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: mikro e fa

LampCAT: modulo led 2W 30K irc 90

Ballast type: led driver 700mA

Report No:

Voltage(V): 128.0000

Test No:

Current(A): 0.0230

Number of Lamps: 1

Power (W): 2.8410

Lamp flux(lm): 240.0

PF: 0.9570

Length(mm): 20

Width(mm): 20

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 155.20, Efficiency(%): 64.67% , Luminous Efficacy(lm/W): 54.63

Central intensity(cd): 257.653, Maximum intensity(cd): 257.653

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

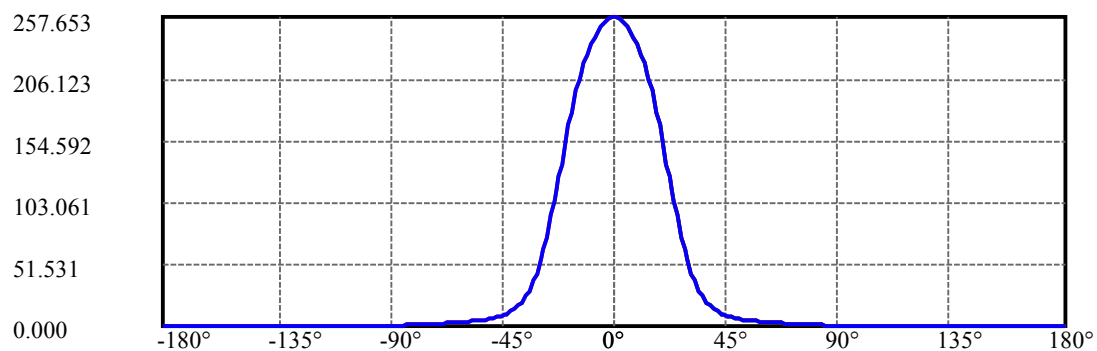
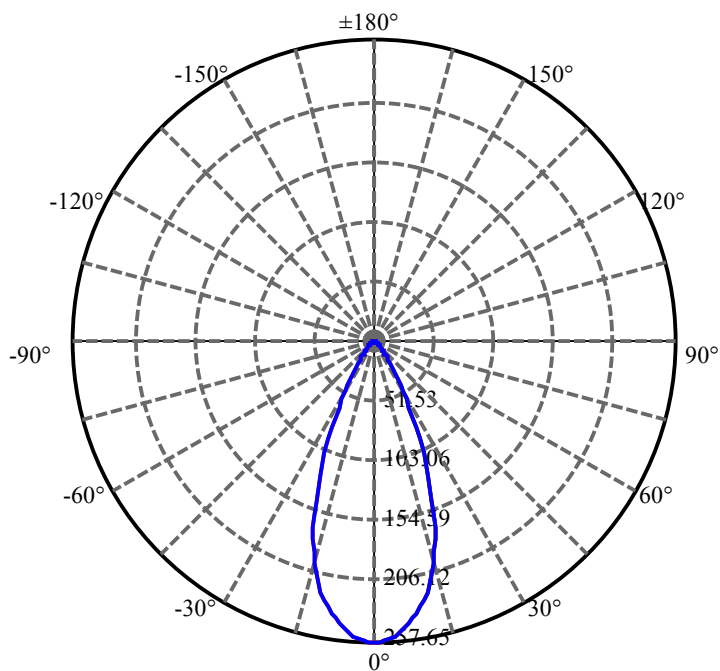
Beam angle of C0 plane : 43.14

Average BeamAngle(IEC 61341): 43.14

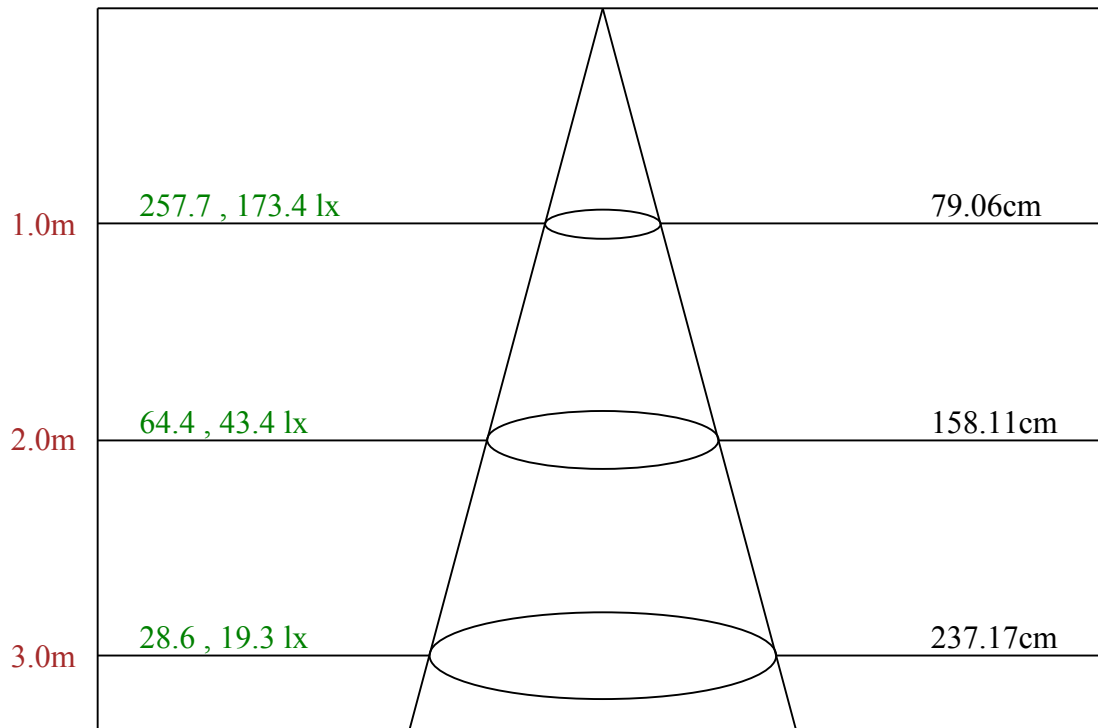
Equipment: equipamento lumini
Temperature(°C): 25.5

Date: 31/03/2025
Humidity(%): 60.0%

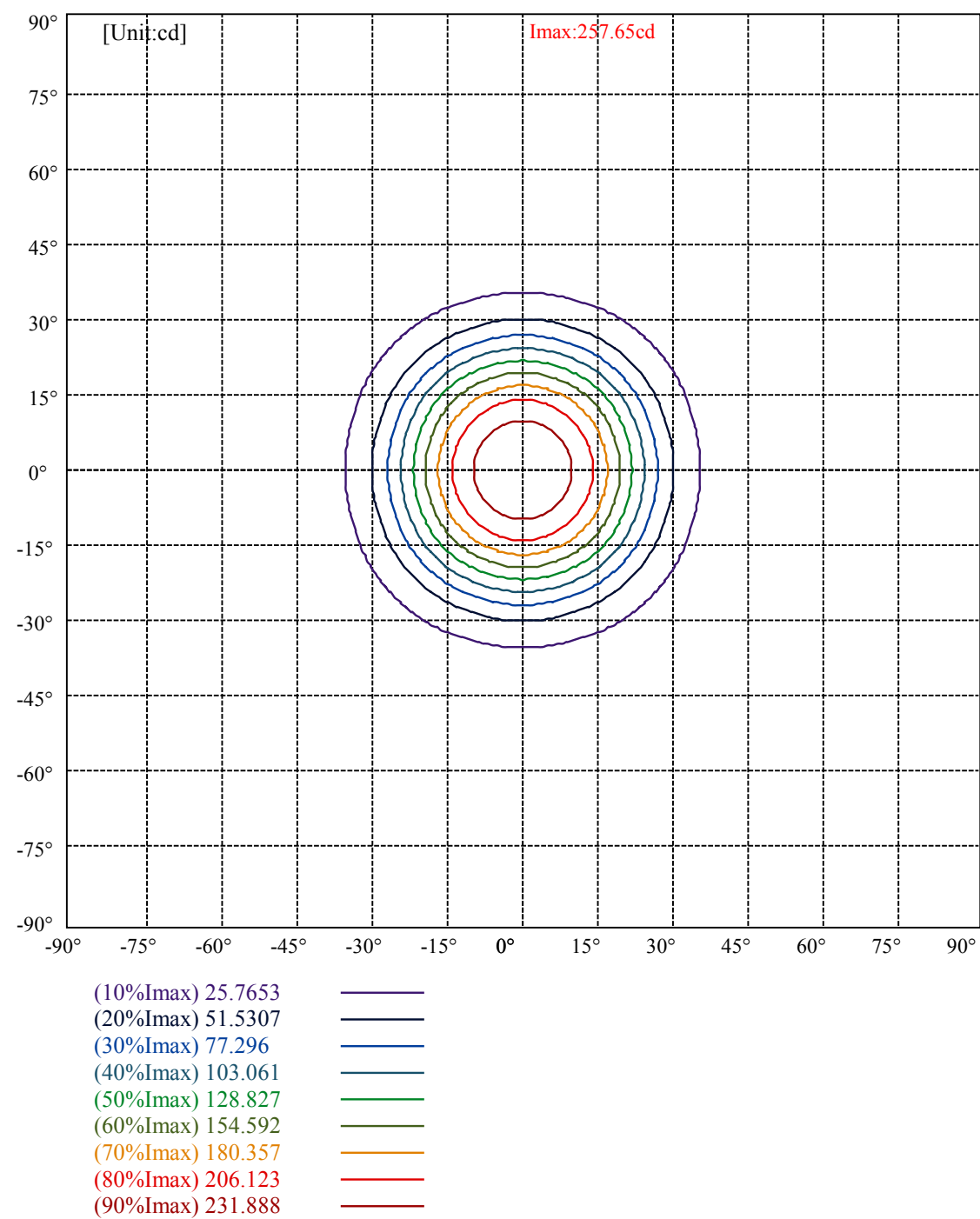
Operator: 01
Distance(m): 6.90



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



Max , Ave Beam angle of C0 plane 43.14



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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	30236	23239	19584	17586	16476	15617	15061	15594	19461
C45	30236	23239	19584	17586	16476	15617	15061	15594	19461
C90	30236	23239	19584	17586	16476	15617	15061	15594	19461

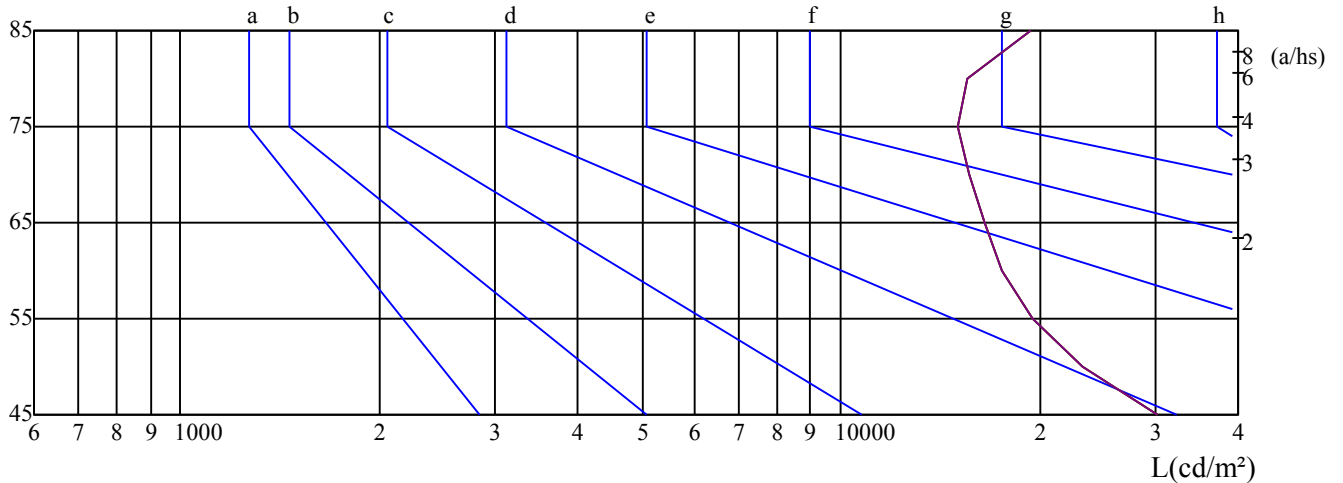
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
16476	16476	16476	15061	15061	15061	19461	19461	19461

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($^{\circ}\text{C}$): 25.5

Date: 31/03/2025
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	19.74	20.75	20.14	21.11	21.48	19.58	20.60	19.98	20.95	21.32
	3H	20.23	21.14	20.66	21.52	21.92	20.18	21.08	20.60	21.46	21.86
	4H	20.47	21.30	20.90	21.70	22.12	20.47	21.31	20.91	21.70	22.12
	6H	20.71	21.47	21.16	21.89	22.34	20.77	21.53	21.22	21.95	22.40
	8H	20.82	21.55	21.28	21.98	22.44	20.90	21.63	21.35	22.06	22.51
	12H	20.97	21.67	21.43	22.10	22.57	21.07	21.77	21.53	22.20	22.67
4H	2H	19.80	20.64	20.24	21.04	21.45	19.66	20.50	20.10	20.90	21.32
	3H	20.46	21.17	20.93	21.60	22.07	20.43	21.13	20.89	21.57	22.04
	4H	20.86	21.47	21.34	21.93	22.43	20.89	21.50	21.37	21.97	22.46
	6H	21.19	21.73	21.70	22.22	22.72	21.29	21.83	21.80	22.32	22.82
	8H	21.41	21.91	21.93	22.40	22.92	21.53	22.03	22.05	22.52	23.04
	12H	21.68	22.14	22.20	22.63	23.19	21.82	22.28	22.34	22.77	23.34
8H	4H	20.95	21.45	21.47	21.94	22.46	20.98	21.48	21.50	21.97	22.49
	6H	21.42	21.83	21.96	22.35	22.91	21.52	21.94	22.06	22.45	23.01
	8H	21.79	22.14	22.36	22.70	23.24	21.91	22.26	22.48	22.82	23.36
	12H	22.20	22.47	22.77	23.02	23.59	22.35	22.62	22.92	23.17	23.74
12H	4H	20.95	21.41	21.47	21.90	22.47	20.98	21.44	21.50	21.93	22.49
	6H	21.52	21.86	22.08	22.42	22.96	21.61	21.96	22.18	22.51	23.06
	8H	21.90	22.18	22.48	22.73	23.30	22.02	22.29	22.59	22.84	23.41
Variation with the observer position at spacings:											
S = 1.0H		2.0/-1.4					2.0/-1.4				
S = 1.5H		3.2/-1.5					3.2/-1.5				
S = 2.0H		4.5/-1.5					4.5/-1.5				
Standard tables:		BK3					BK3				
Uncorrected UGR		3.5					3.5				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: mikro e fc

LampCAT: modulo led 1W 30K irc 90

Ballast type: led driver 350mA

Report No:

Voltage(V): 127.1900

Test No:

Current(A): 0.0300

Number of Lamps: 1

Power (W): 1.4790

Lamp flux(lm): 135.0

PF: 0.3880

Length(mm): 20

Width(mm): 20

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 92.83, Efficiency(%): 68.76% , Luminous Efficacy(lm/W): 62.77

Central intensity(cd): 779.197, Maximum intensity(cd): 779.197

Angle of maximum intensity: C=0.0 γ =0.0

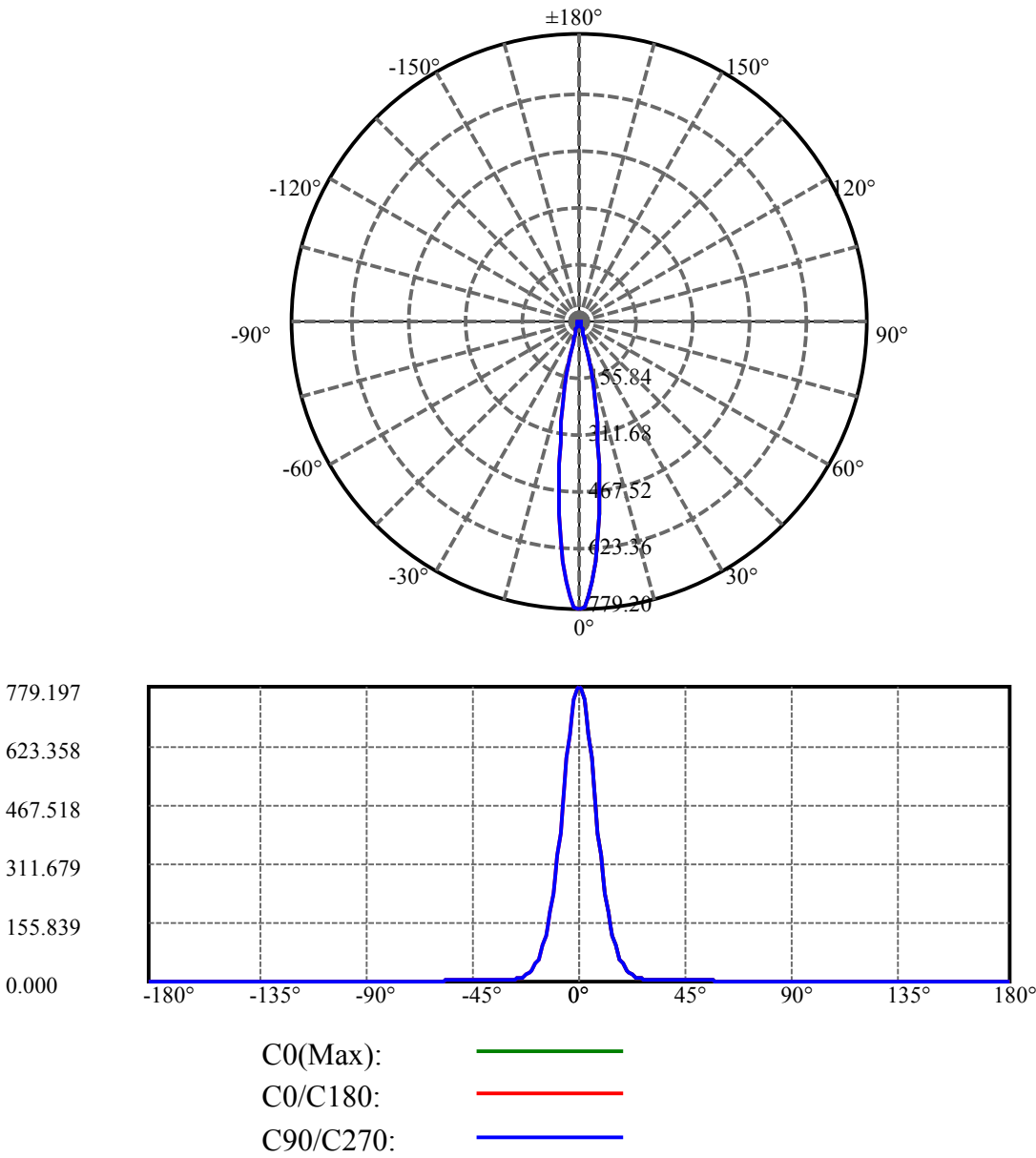
Beam angle of C0 plane : 16.10

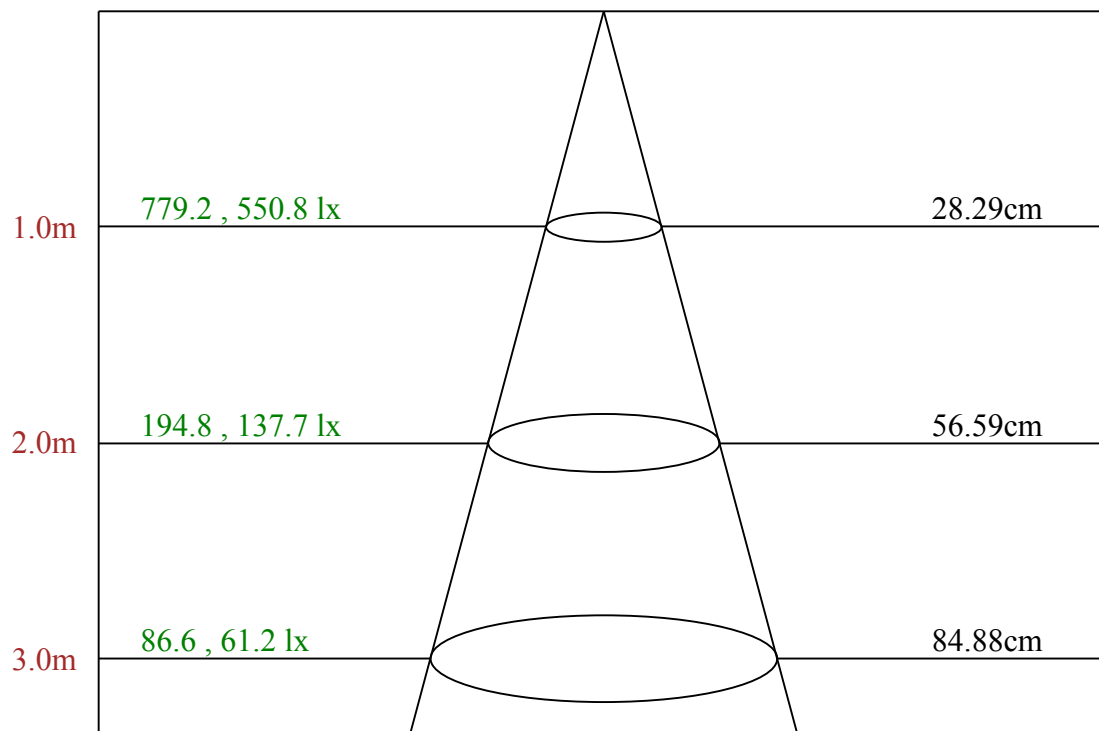
Average BeamAngle(IEC 61341): 16.10

Equipment: equipamento lumini
Temperature(°C): 26.4

Date: 27/02/2025
Humidity(%): 60.0%

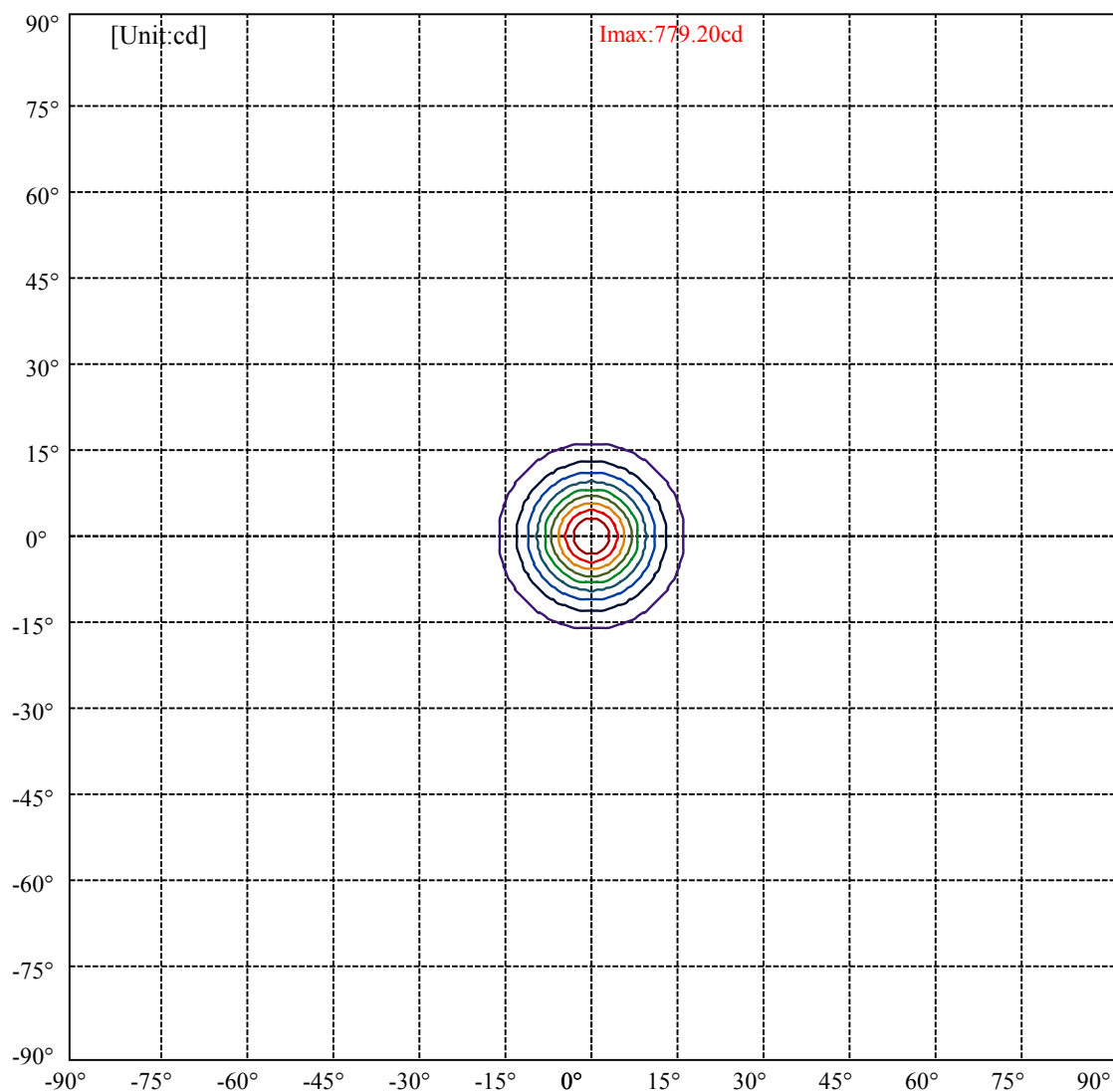
Operator: 01
Distance(m): 6.90





Max , Ave

Beam angle of C0 plane 16.10



(10%Imax)	77.9197	—
(20%Imax)	155.839	—
(30%Imax)	233.759	—
(40%Imax)	311.679	—
(50%Imax)	389.599	—
(60%Imax)	467.518	—
(70%Imax)	545.438	—
(80%Imax)	623.358	—
(90%Imax)	701.277	—

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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	12667	12198	11310	10236	9646	9048	8853	9767	12974
C45	12667	12198	11310	10236	9646	9048	8853	9767	12974
C90	12667	12198	11310	10236	9646	9048	8853	9767	12974

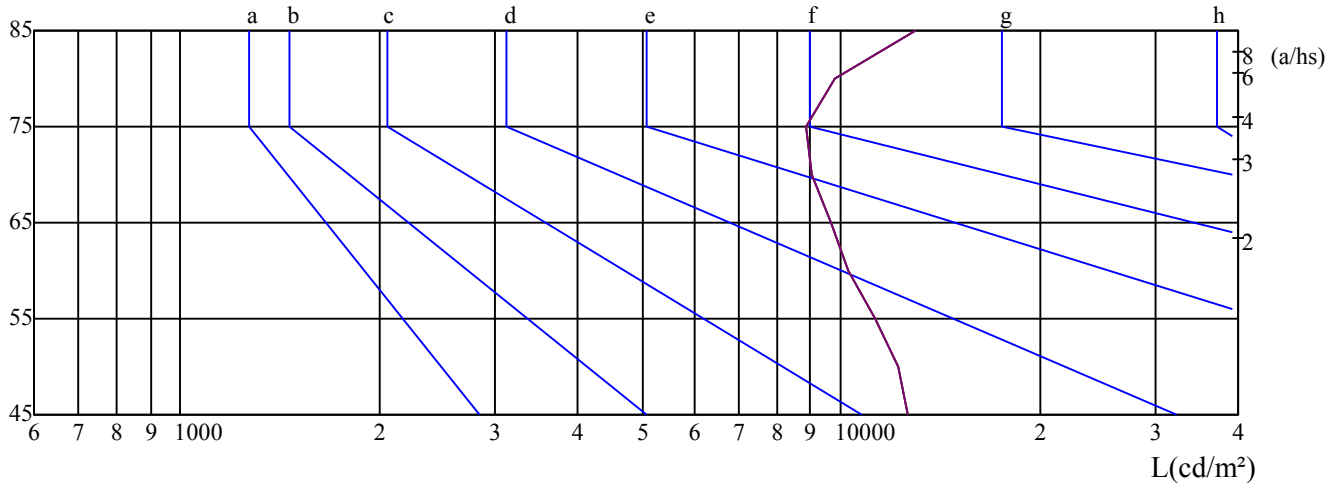
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
9646	9646	9646	8853	8853	8853	12974	12974	12974

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

$\gamma(^{\circ})$



Equipment: equipamento lumini
Temperature($^{\circ}\text{C}$): 26.4

Date: 27/02/2025
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	15.48	16.47	15.89	16.84	17.21	15.44	16.43	15.84	16.79	17.16
	3H	16.96	17.85	17.39	18.24	18.64	16.72	17.61	17.15	17.99	18.40
	4H	17.56	18.38	18.00	18.78	19.21	17.27	18.09	17.71	18.49	18.91
	6H	18.18	18.94	18.64	19.36	19.81	17.78	18.53	18.24	18.95	19.41
	8H	18.46	19.17	18.92	19.61	20.07	17.99	18.71	18.46	19.14	19.61
	12H	18.73	19.41	19.20	19.85	20.33	18.21	18.89	18.68	19.33	19.80
4H	2H	16.01	16.83	16.45	17.23	17.66	15.97	16.79	16.41	17.19	17.61
	3H	17.62	18.31	18.09	18.75	19.22	17.41	18.10	17.88	18.54	19.02
	4H	18.39	18.99	18.87	19.46	19.96	18.13	18.73	18.61	19.20	19.70
	6H	19.13	19.66	19.64	20.15	20.66	18.74	19.27	19.25	19.77	20.27
	8H	19.50	19.99	20.03	20.49	21.02	19.05	19.55	19.58	20.05	20.57
	12H	19.89	20.34	20.41	20.83	21.40	19.37	19.82	19.90	20.32	20.89
8H	4H	18.61	19.10	19.13	19.60	20.13	18.38	18.87	18.90	19.37	19.89
	6H	19.52	19.92	20.06	20.44	21.00	19.17	19.57	19.71	20.09	20.65
	8H	20.07	20.41	20.64	20.97	21.52	19.65	19.99	20.22	20.55	21.10
	12H	20.60	20.87	21.18	21.43	22.00	20.11	20.37	20.68	20.93	21.50
12H	4H	18.63	19.08	19.16	19.58	20.15	18.41	18.86	18.94	19.36	19.93
	6H	19.64	19.98	20.21	20.54	21.09	19.31	19.65	19.88	20.21	20.76
	8H	20.21	20.47	20.79	21.03	21.60	19.81	20.08	20.39	20.63	21.21
Variation with the observer position at spacings:											
S = 1.0H		0.3/-0.6					0.3/-0.6				
S = 1.5H		0.5/-0.8					0.5/-0.8				
S = 2.0H		0.5/-0.8					0.5/-0.8				
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: mikro e fc

LampCAT: modulo led 2W 30K irc 90

Ballast type: led driver 700mA

Report No:

Voltage(V): 128.0100

Test No:

Current(A): 0.0230

Number of Lamps: 1

Power (W): 2.8500

Lamp flux(lm): 240.0

PF: 0.9570

Length(mm): 20

Width(mm): 20

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 143.72, Efficiency(%): 59.88% , Luminous Efficacy(lm/W): 50.43

Central intensity(cd): 1221.875, Maximum intensity(cd): 1221.875

Angle of maximum intensity: C=0.0 γ =0.0

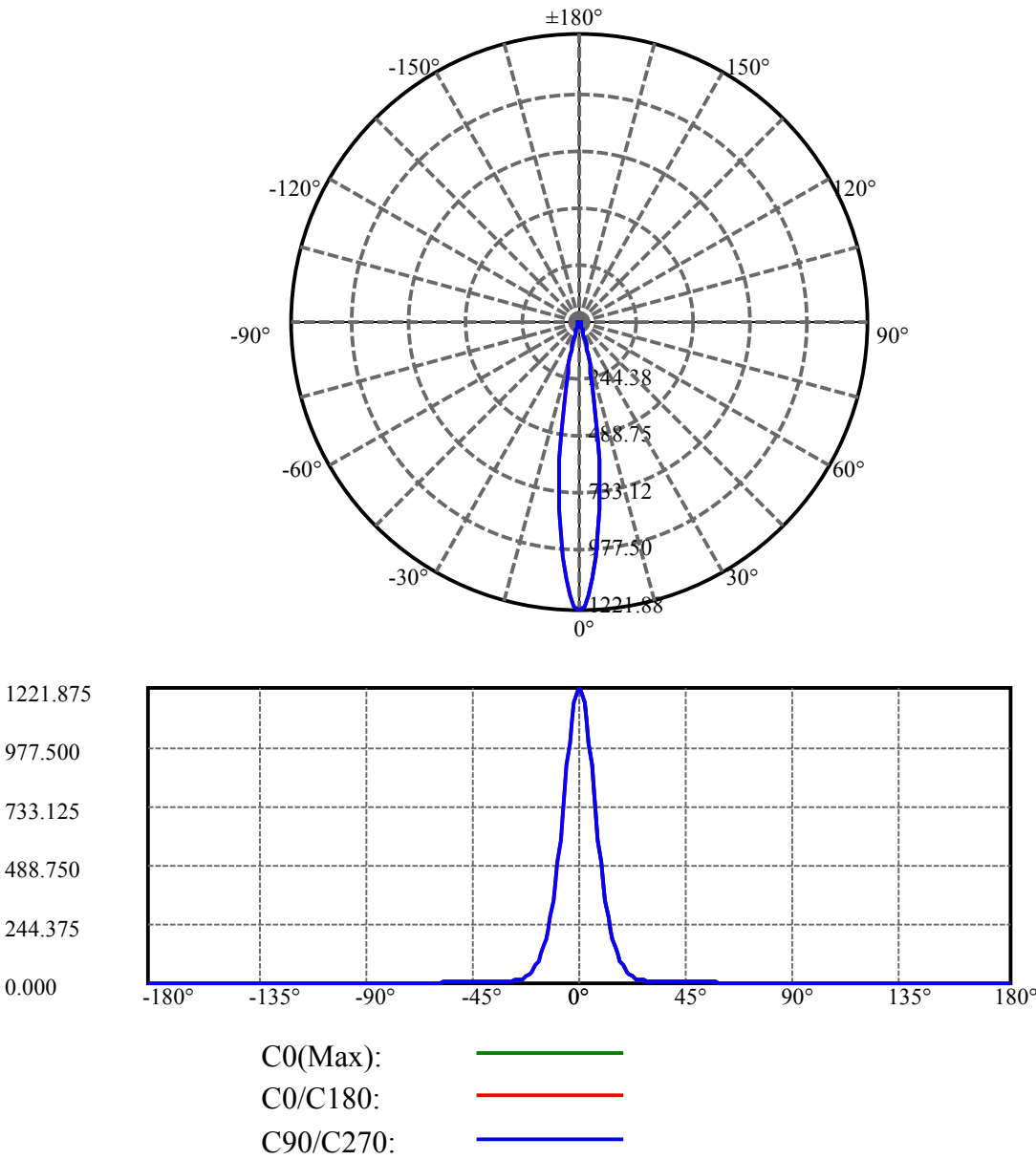
Beam angle of C0 plane : 15.64

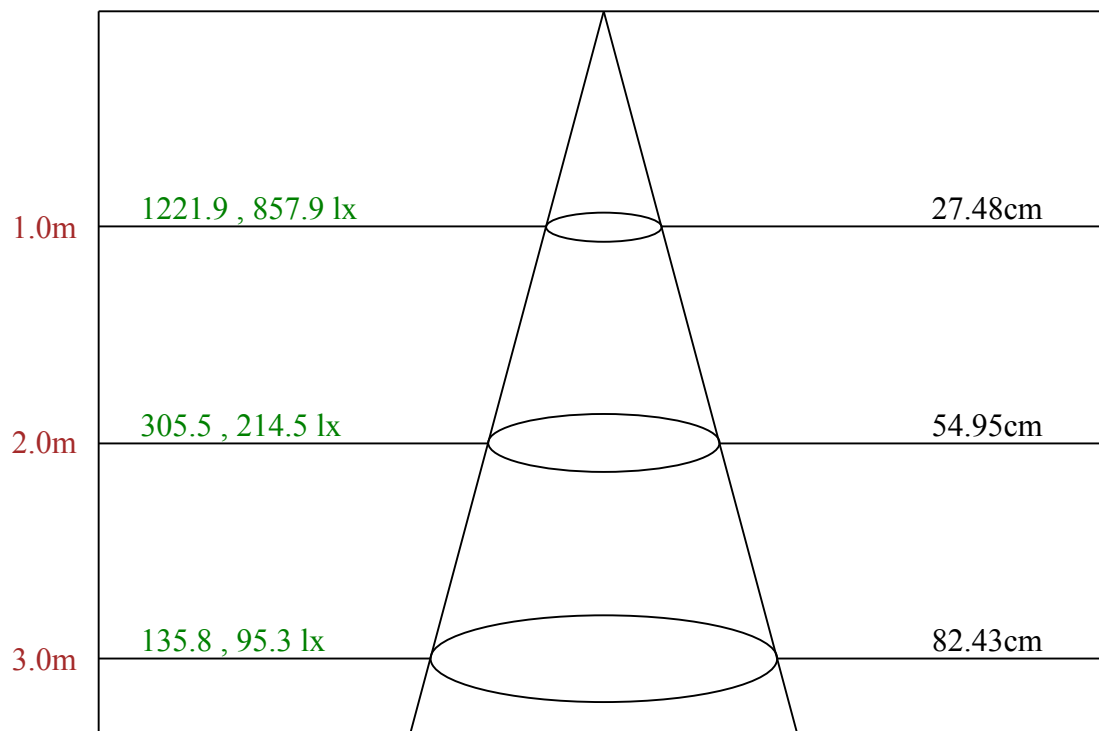
Aveage BeamAngle(IEC 61341):15.64

Equipment: equipamento lumini
Temperature(°C): 25.5

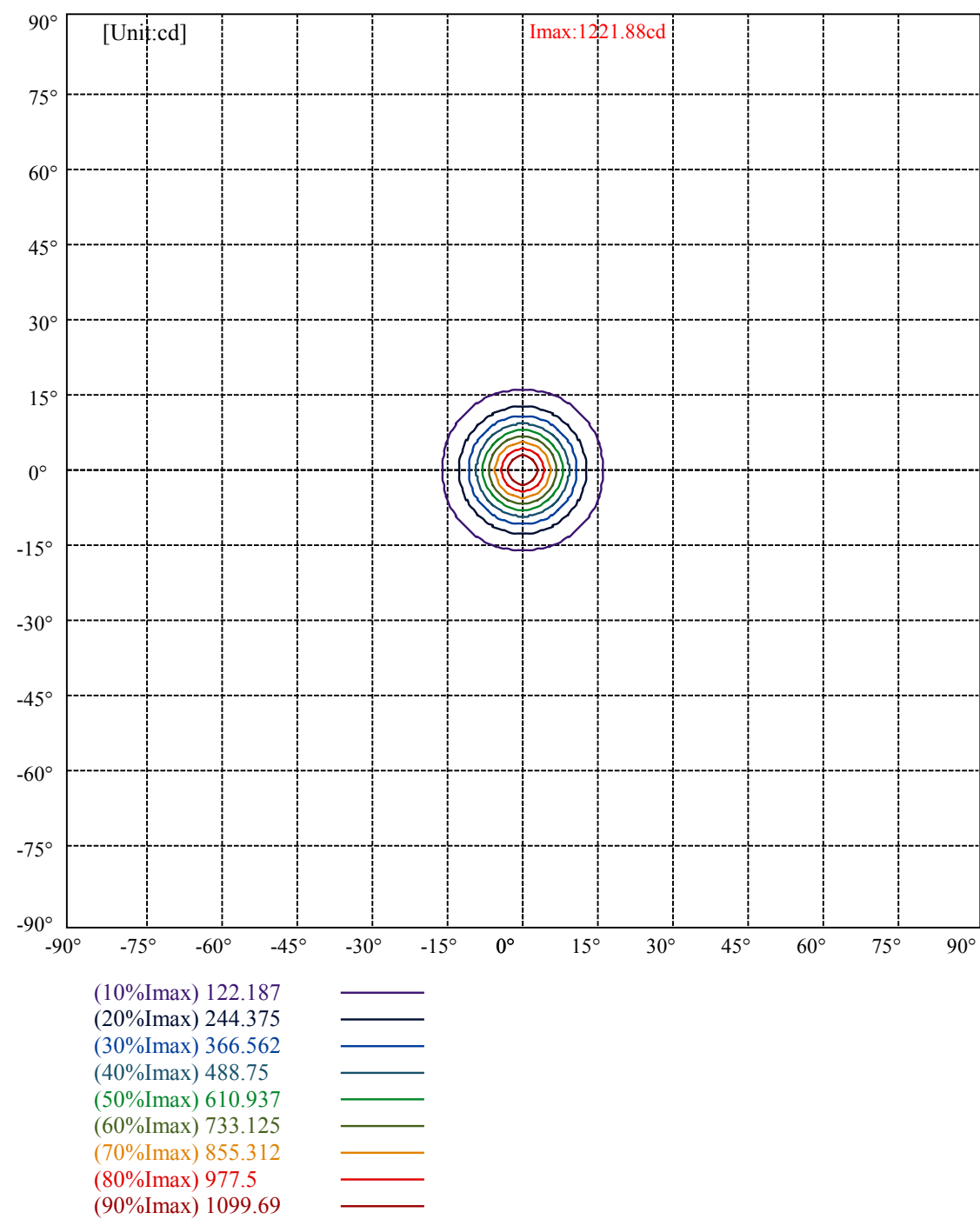
Date: 31/03/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 15.64



Luminance Table

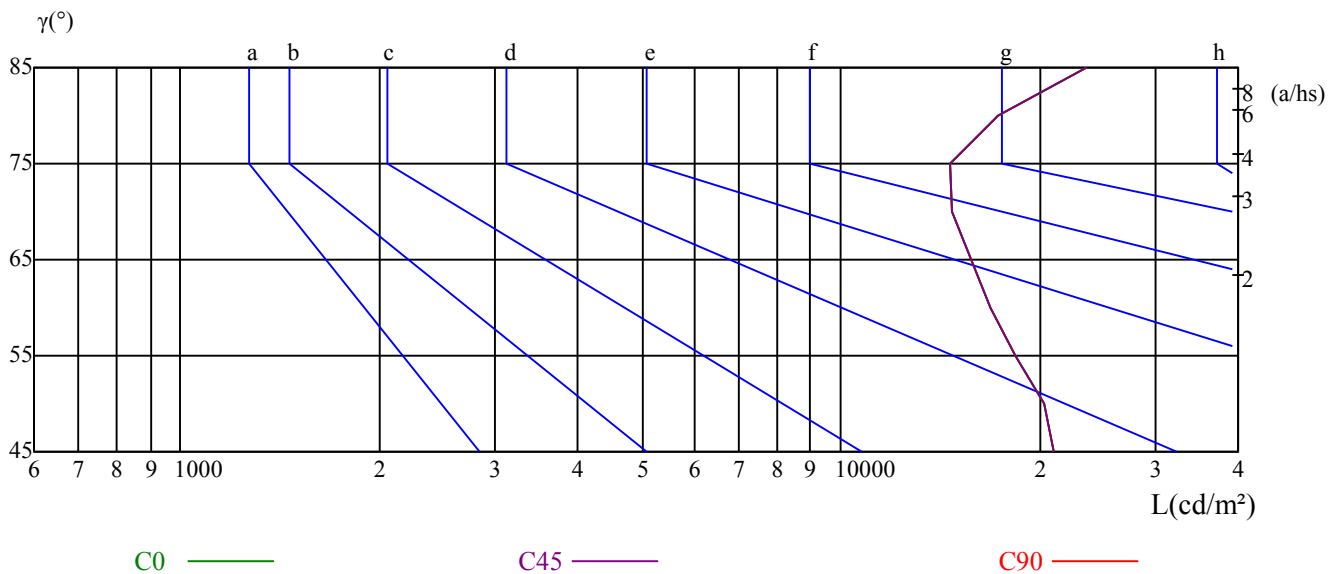
γ	45	50	55	60	65	70	75	80	85
C0	21083	20369	18443	16812	15772	14790	14659	17307	23558
C45	21083	20369	18443	16812	15772	14790	14659	17307	23558
C90	21083	20369	18443	16812	15772	14790	14659	17307	23558

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
15772	15772	15772	14659	14659	14659	23558	23558	23558

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	17.00	18.00	17.41	18.36	18.74	16.87	17.87	17.28	18.23	18.61
	3H	18.34	19.23	18.77	19.62	20.02	18.15	19.05	18.58	19.43	19.84
	4H	18.91	19.74	19.36	20.14	20.57	18.69	19.52	19.13	19.92	20.34
	6H	19.58	20.34	20.04	20.76	21.22	19.29	20.05	19.75	20.47	20.92
	8H	19.94	20.67	20.40	21.10	21.56	19.60	20.32	20.06	20.75	21.22
	12H	20.32	21.01	20.79	21.45	21.92	19.93	20.62	20.39	21.06	21.53
4H	2H	17.44	18.27	17.88	18.67	19.09	17.34	18.17	17.78	18.57	18.99
	3H	18.94	19.64	19.40	20.08	20.55	18.79	19.48	19.25	19.92	20.39
	4H	19.71	20.31	20.18	20.78	21.28	19.51	20.12	19.99	20.58	21.08
	6H	20.51	21.05	21.02	21.54	22.05	20.24	20.78	20.75	21.27	21.78
	8H	21.00	21.50	21.52	21.99	22.52	20.67	21.17	21.19	21.66	22.19
	12H	21.51	21.97	22.04	22.46	23.03	21.13	21.59	21.66	22.08	22.65
8H	4H	19.93	20.43	20.46	20.93	21.46	19.76	20.26	20.28	20.76	21.28
	6H	20.96	21.37	21.50	21.88	22.45	20.71	21.12	21.25	21.64	22.20
	8H	21.65	21.99	22.22	22.55	23.10	21.34	21.68	21.91	22.24	22.79
	12H	22.34	22.61	22.92	23.17	23.74	21.98	22.25	22.56	22.80	23.38
12H	4H	19.97	20.43	20.50	20.92	21.49	19.81	20.27	20.34	20.76	21.33
	6H	21.12	21.46	21.68	22.02	22.57	20.88	21.23	21.45	21.79	22.34
	8H	21.85	22.12	22.43	22.68	23.25	21.56	21.83	22.14	22.38	22.96
Variation with the observer position at spacings:											
S = 1.0H		0.3/-0.6					0.3/-0.6				
S = 1.5H		0.5/-0.8					0.5/-0.8				
S = 2.0H		0.5/-0.8					0.5/-0.8				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		5.9					5.9				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: mikro e fm

LampCAT: modulo led 1W 30K irc 90

Ballast type: led driver 350mA

Report No:

Voltage(V): 127.2000

Test No:

Current(A): 0.0300

Number of Lamps: 1

Power (W): 1.4780

Lamp flux(lm): 135.0

PF: 0.3880

Length(mm): 20

Width(mm): 20

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 112.19, Efficiency(%): 83.10% , Luminous Efficacy(lm/W): 75.90

Central intensity(cd): 420.682, Maximum intensity(cd): 420.682

Angle of maximum intensity: C=0.0 γ =0.0

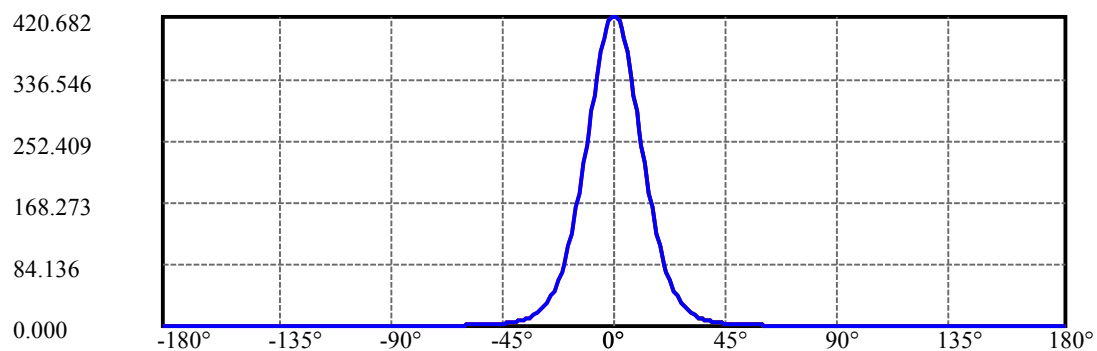
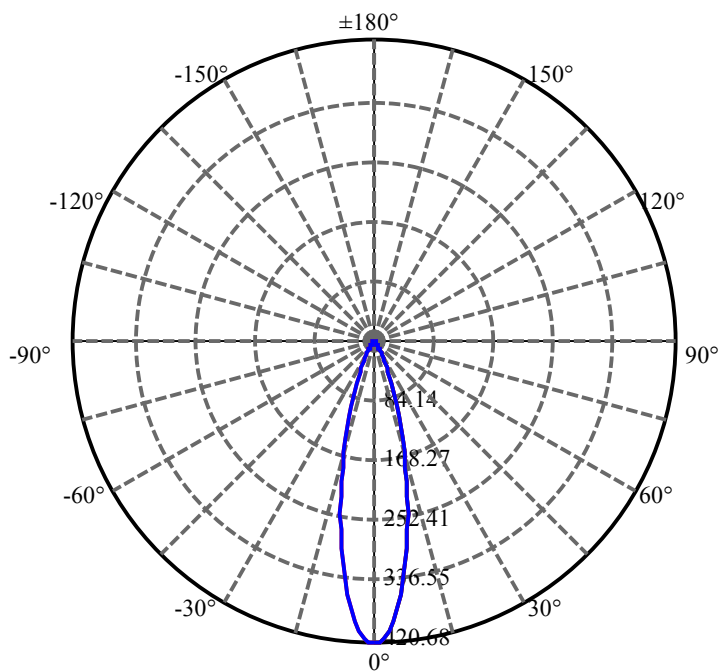
Beam angle of C0 plane : 25.15

Aveage BeamAngle(IEC 61341):25.15

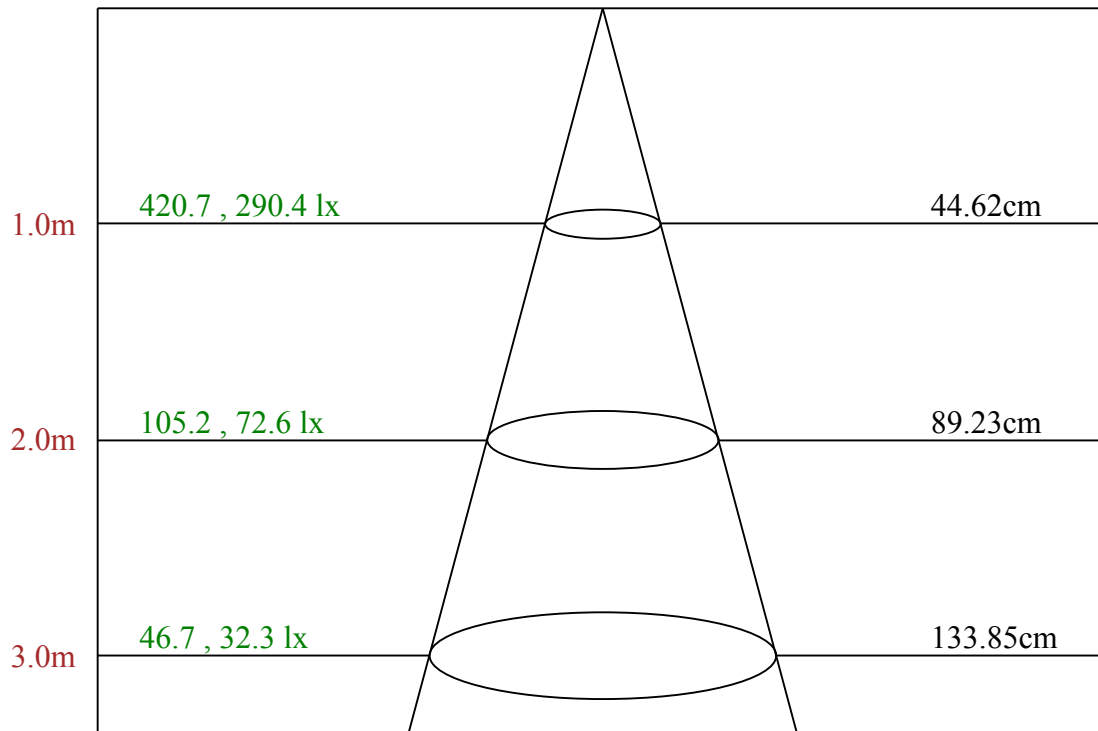
Equipment: equipamento lumini
Temperature(°C): 26.4

Date: 27/02/2025
Humidity(%): 60.0%

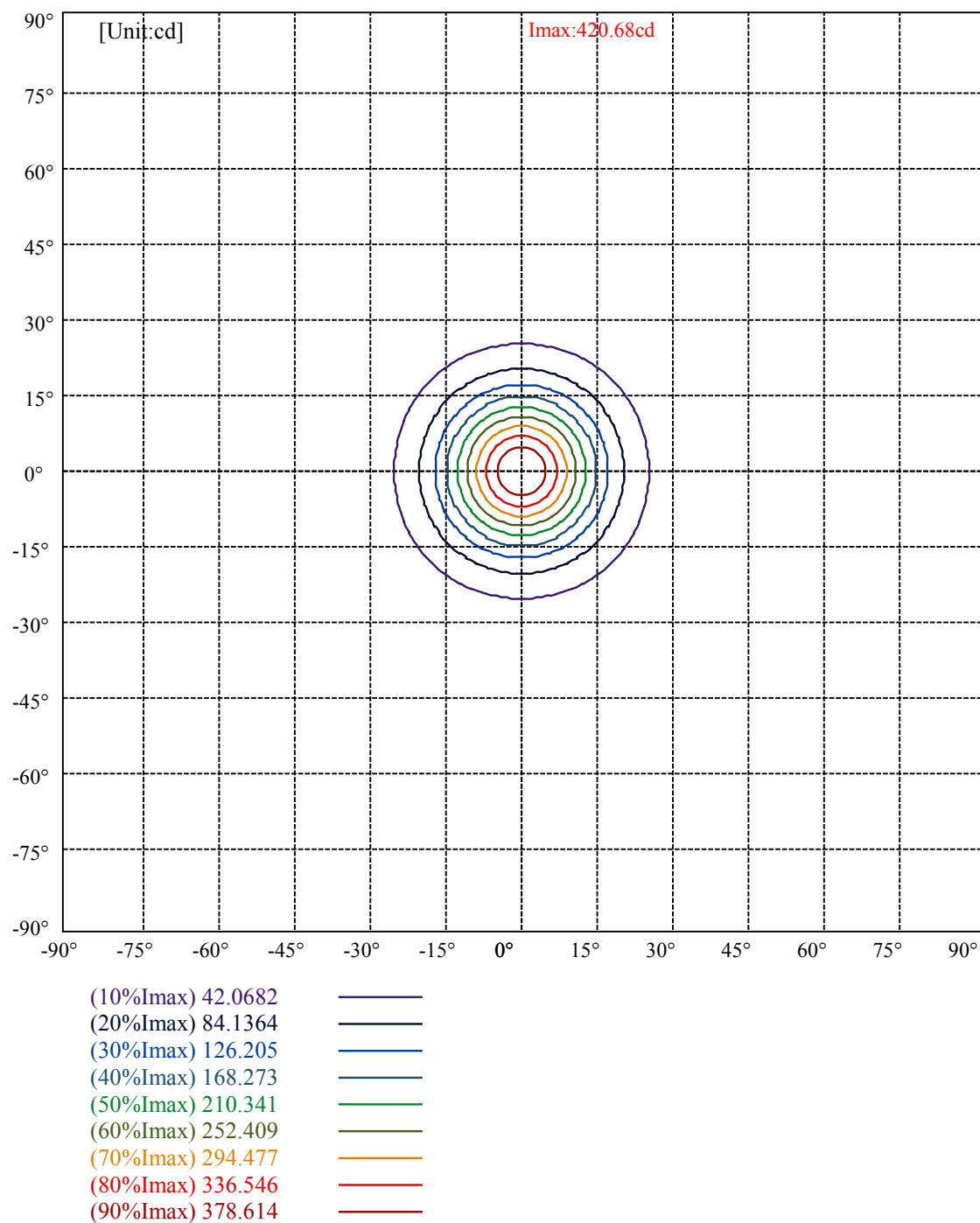
Operator: 01
Distance(m): 6.90



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



Max , Ave Beam angle of C0 plane 25.15



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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	11783	8842	7289	6457	6231	6264	6323	7111	12291
C45	11783	8842	7289	6457	6231	6264	6323	7111	12291
C90	11783	8842	7289	6457	6231	6264	6323	7111	12291

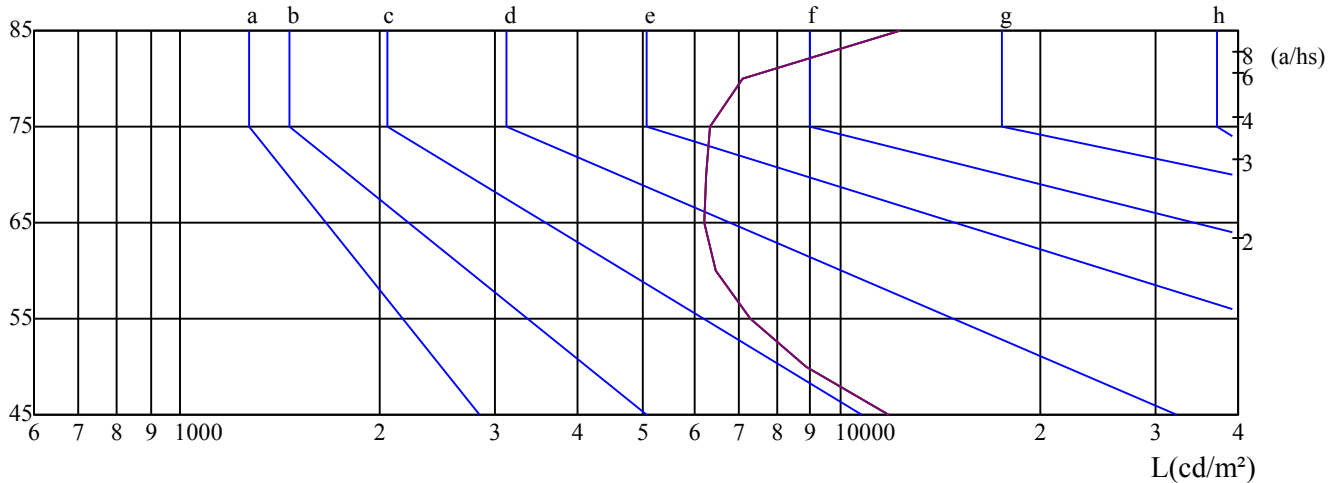
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6231	6231	6231	6323	6323	6323	12291	12291	12291

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($^{\circ}\text{C}$): 26.4

Date: 27/02/2025
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	15.47	16.42	15.88	16.78	17.15	14.82	15.76	15.22	16.12	16.50
	3H	15.96	16.80	16.39	17.19	17.59	15.36	16.20	15.79	16.58	16.99
	4H	16.23	17.01	16.68	17.41	17.84	15.61	16.38	16.05	16.79	17.21
	6H	16.57	17.28	17.03	17.71	18.16	15.91	16.62	16.37	17.05	17.50
	8H	16.76	17.44	17.22	17.87	18.33	16.11	16.79	16.58	17.22	17.69
	12H	17.05	17.70	17.52	18.14	18.61	16.39	17.03	16.86	17.47	17.95
4H	2H	15.48	16.25	15.92	16.66	17.08	14.88	15.66	15.33	16.06	16.49
	3H	16.15	16.80	16.62	17.25	17.72	15.62	16.27	16.09	16.72	17.19
	4H	16.62	17.19	17.10	17.65	18.16	16.07	16.63	16.55	17.10	17.61
	6H	17.09	17.58	17.60	18.08	18.59	16.50	17.00	17.01	17.49	18.00
	8H	17.40	17.86	17.93	18.36	18.89	16.83	17.29	17.36	17.79	18.32
	12H	17.86	18.29	18.39	18.79	19.36	17.27	17.69	17.80	18.19	18.76
8H	4H	16.73	17.20	17.26	17.70	18.23	16.23	16.70	16.76	17.20	17.72
	6H	17.37	17.75	17.91	18.27	18.83	16.85	17.23	17.39	17.75	18.31
	8H	17.87	18.19	18.44	18.75	19.30	17.37	17.68	17.94	18.24	18.80
	12H	18.55	18.79	19.13	19.35	19.93	18.02	18.27	18.60	18.83	19.40
12H	4H	16.74	17.17	17.27	17.66	18.23	16.25	16.68	16.78	17.17	17.75
	6H	17.48	17.80	18.05	18.36	18.91	16.98	17.30	17.56	17.86	18.41
	8H	18.03	18.27	18.61	18.83	19.40	17.55	17.79	18.13	18.35	18.92
Variation with the observer position at spacings:											
S = 1.0H		2.0/-1.4					2.0/-1.4				
S = 1.5H		3.1/-1.5					3.1/-1.5				
S = 2.0H		4.1/-1.3					4.1/-1.3				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		1.6					1.6				

依据CIE Publ. 117 计算 UGR, S/H = 0.25



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LumCAT:

Luminaire: mikro e fm

LampCAT: modulo led 2W 30K irc 90

Ballast type: led driver 700mA

Report No:

Voltage(V): 128.0200

Test No:

Current(A): 0.0230

Number of Lamps: 1

Power (W): 2.8500

Lamp flux(lm): 240.0

PF: 0.9570

Length(mm): 20

Width(mm): 20

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 181.79, Efficiency(%): 75.75% , Luminous Efficacy(lm/W): 63.79

Central intensity(cd): 699.570, Maximum intensity(cd): 699.570

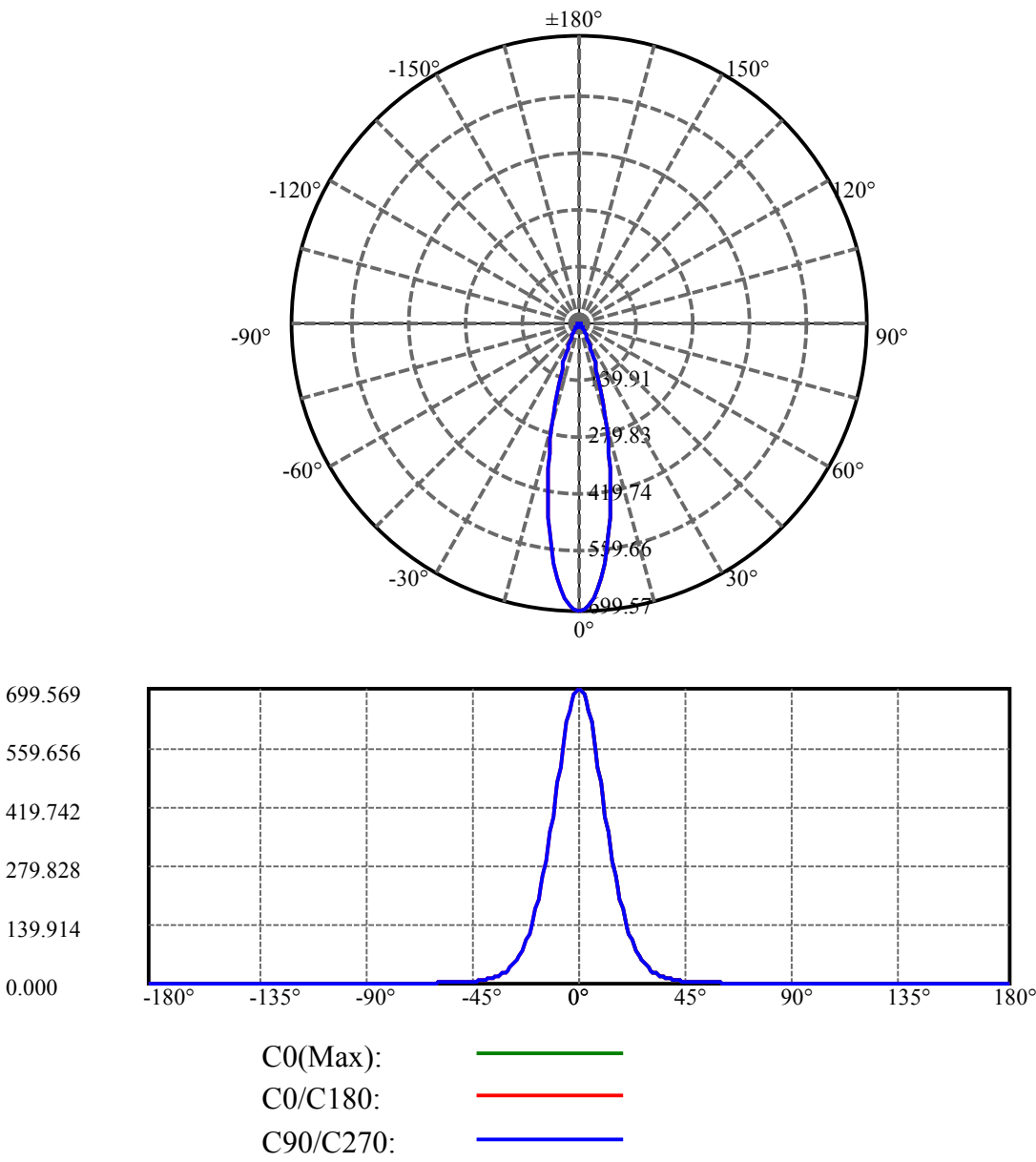
Angle of maximum intensity: $C=0.0$ $\gamma=0.0$

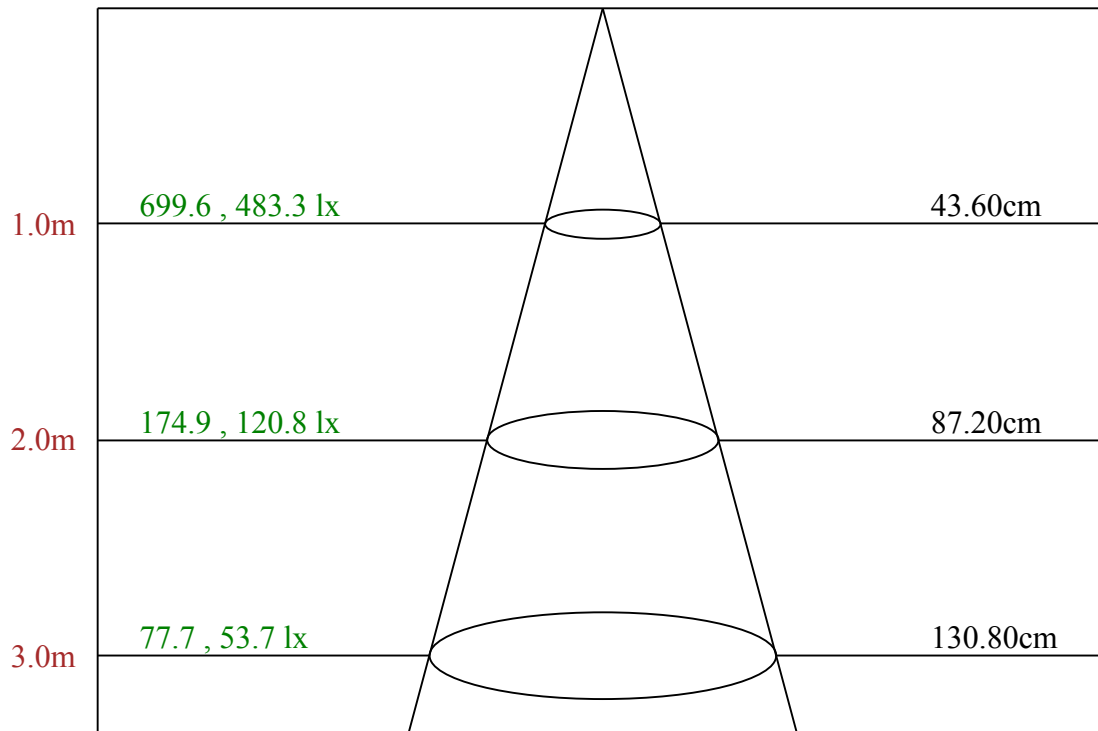
Beam angle of C0 plane : 24.60

Equipment: equipamento lumini
Temperature(°C): 25.5

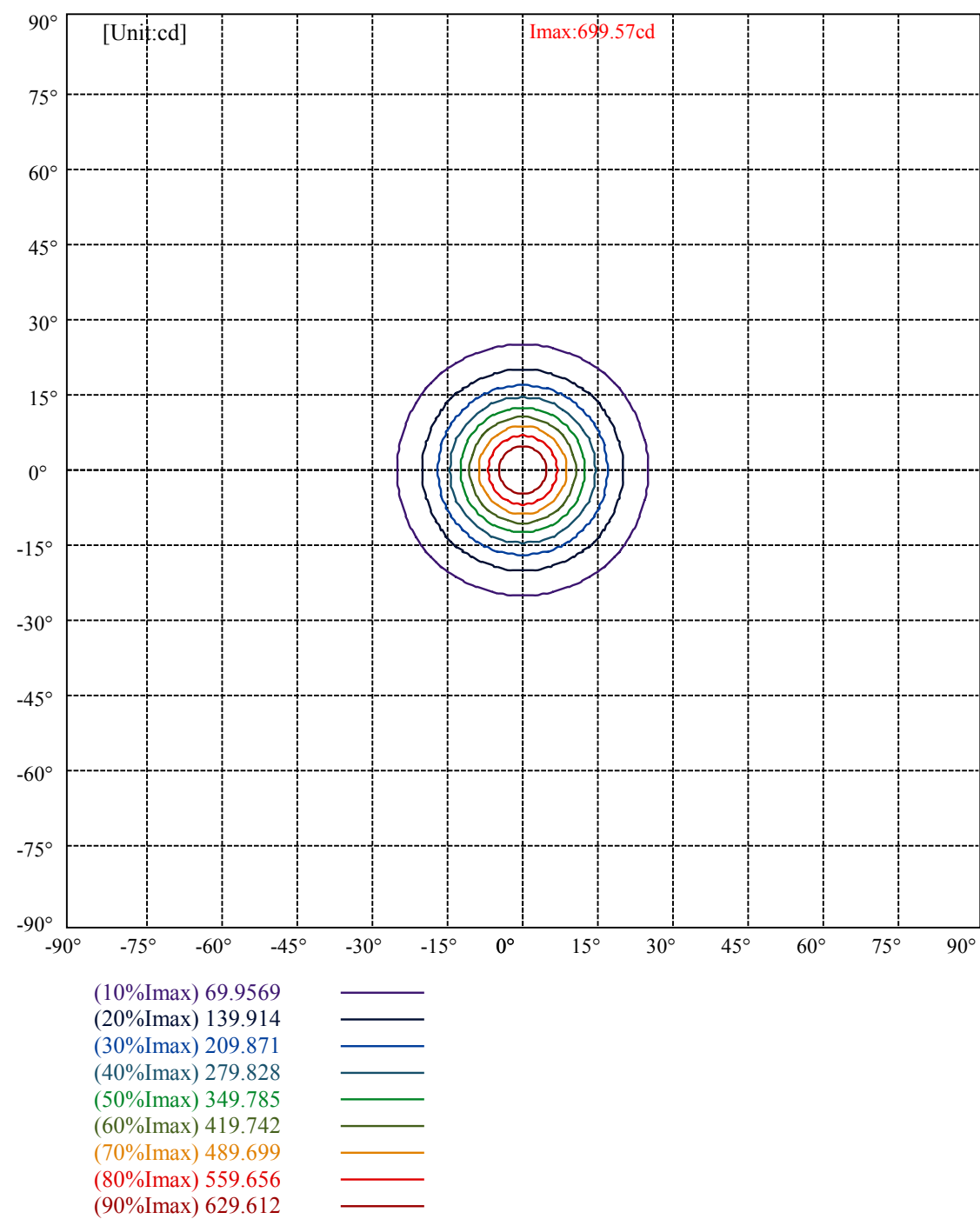
Date: 31/03/2025
Humidity(%): 60.0%

Operator: 01
Distance(m): 6.90





Max , Ave Beam angle of C0 plane 24.60



Luminance Table

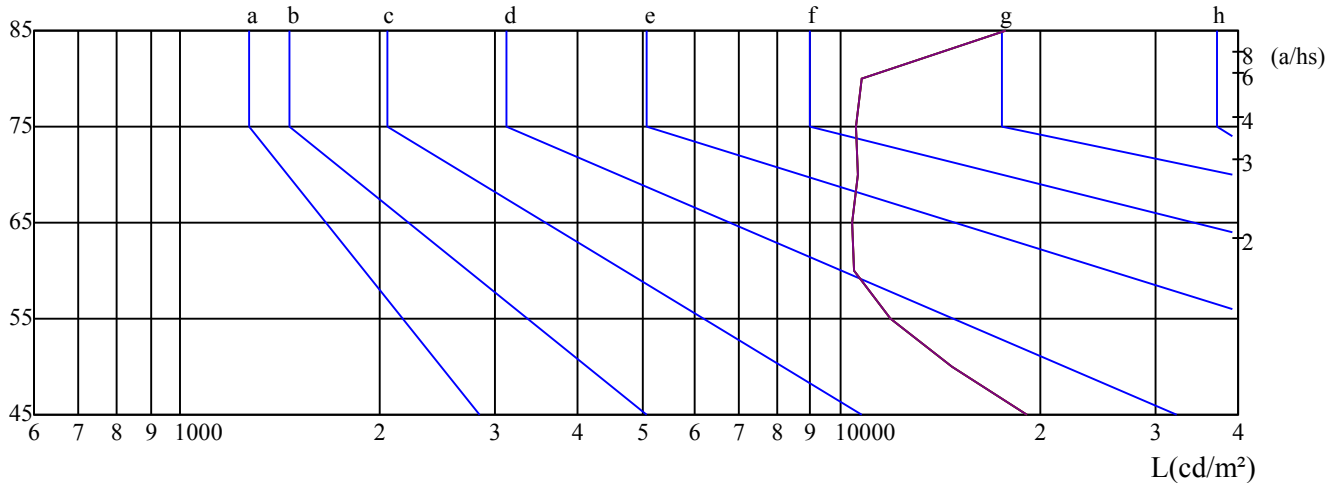
γ	45	50	55	60	65	70	75	80	85
C0	19147	14698	11906	10504	10385	10614	10520	10796	17754
C45	19147	14698	11906	10504	10385	10614	10520	10796	17754
C90	19147	14698	11906	10504	10385	10614	10520	10796	17754

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10385	10385	10385	10520	10520	10520	17754	17754	17754

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	15.41	16.35	15.81	16.71	17.08	15.63	16.58	16.04	16.93	17.30
	3H	16.15	16.99	16.57	17.37	17.77	16.33	17.17	16.76	17.56	17.95
	4H	16.51	17.29	16.95	17.69	18.11	16.75	17.53	17.19	17.93	18.35
	6H	16.86	17.57	17.32	17.99	18.44	17.11	17.83	17.57	18.25	18.70
	8H	17.05	17.73	17.51	18.16	18.62	17.31	17.99	17.77	18.42	18.87
	12H	17.34	17.98	17.80	18.42	18.89	17.57	18.21	18.03	18.65	19.12
4H	2H	15.51	16.29	15.95	16.68	17.10	15.71	16.49	16.15	16.89	17.31
	3H	16.47	17.13	16.94	17.56	18.03	16.64	17.29	17.10	17.73	18.20
	4H	17.03	17.59	17.50	18.06	18.56	17.25	17.82	17.73	18.28	18.78
	6H	17.49	17.99	18.00	18.48	18.98	17.73	18.23	18.24	18.72	19.22
	8H	17.81	18.27	18.33	18.77	19.29	18.04	18.50	18.56	19.00	19.52
	12H	18.24	18.67	18.77	19.16	19.73	18.45	18.88	18.97	19.37	19.93
8H	4H	17.18	17.64	17.70	18.14	18.66	17.39	17.85	17.91	18.35	18.87
	6H	17.81	18.19	18.35	18.71	19.27	18.02	18.40	18.56	18.92	19.48
	8H	18.31	18.63	18.88	19.19	19.73	18.52	18.83	19.08	19.39	19.93
	12H	18.96	19.20	19.53	19.75	20.32	19.12	19.37	19.70	19.92	20.49
12H	4H	17.19	17.62	17.72	18.11	18.68	17.39	17.82	17.92	18.31	18.88
	6H	17.93	18.25	18.50	18.81	19.35	18.13	18.45	18.70	19.01	19.55
	8H	18.47	18.72	19.05	19.27	19.84	18.66	18.91	19.24	19.46	20.03
Variation with the observer position at spacings:											
S = 1.0H		2.0/-1.4					2.0/-1.4				
S = 1.5H		3.1/-1.5					3.1/-1.5				
S = 2.0H		4.3/-1.4					4.3/-1.4				
Standard tables:		BK4					BK4				
Uncorrected UGR		0.5					0.5				

依据CIE Publ. 117 计算 UGR, S/H = 0.25

especificações técnicas

fonte de luz

módulo led integrado (incluso)

índice de proteção

IP20 - luminária para uso interno

peso

mikro e - 0,2kg

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

fita isolante

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.

atenção

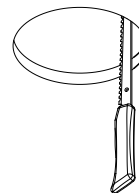
leia atentamente todas as instruções relacionadas ao seu produto antes de utilizá-lo.

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

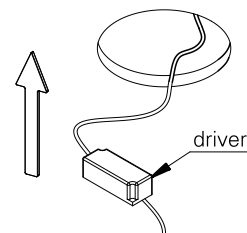
não são permitidas modificações no produto, esse deve atender à finalidade para a qual foi projetado e ser utilizado de acordo com as especificações técnicas.

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

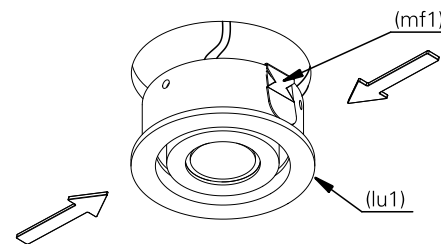
1. faça um nicho no forro conforme o modelo do produto na tabela.
mikro e = Ø45mm



2. aloje o driver sobre o forro.
faça a ligação elétrica. isole os fios separadamente com fita isolante. repita a operação envolvendo o conjunto dos fios, vedando completamente a emenda.



3. segurando as molas de fixação (mf1), encaixe a luminária (lu1) no nicho.



4. para orientar a luminária, pressione o anel interno (an1) deixando-o perpendicular ao forro. gire para a posição desejada e ajuste a inclinação.

