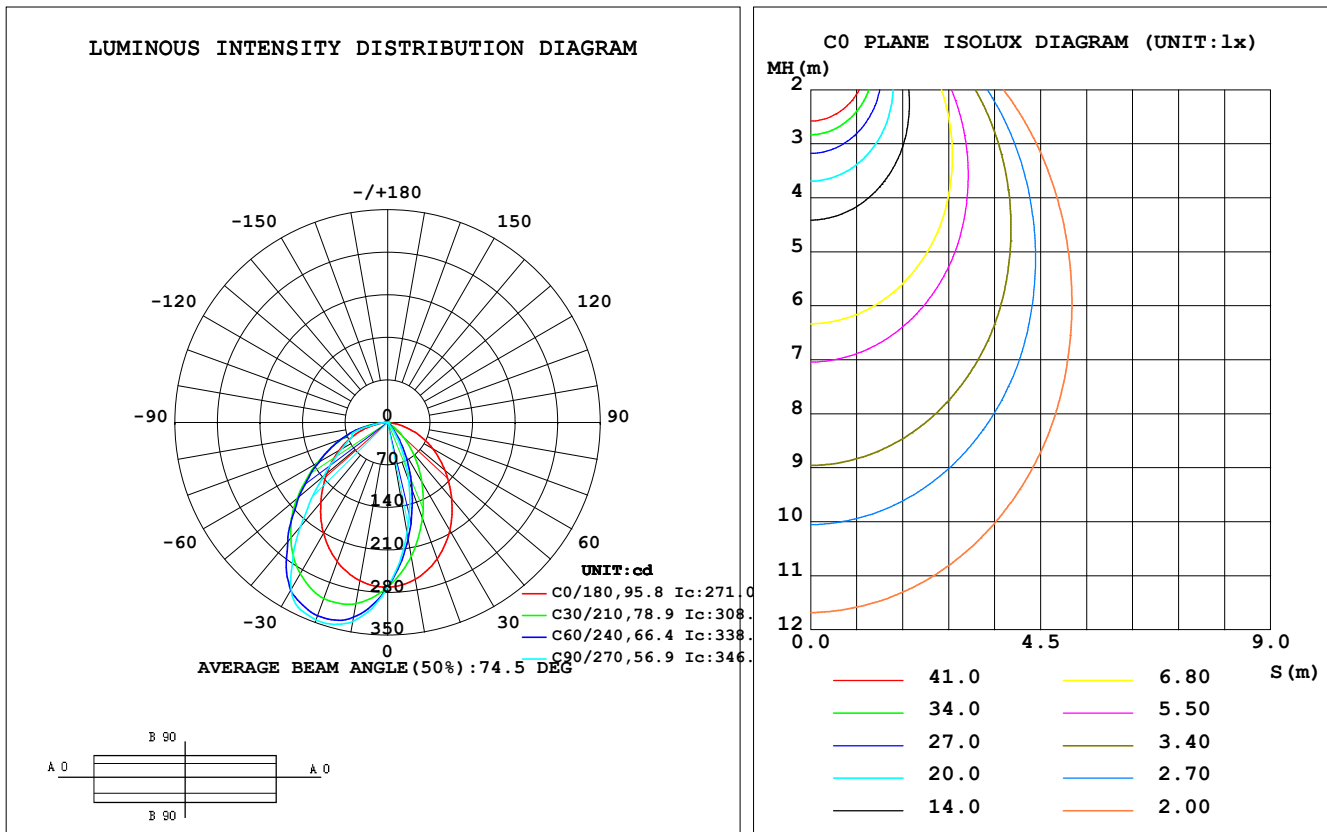


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:48.00V I:0.2505A P:12.02W PF:1.000 Freq:50.00Hz Lamp Flux:555.596x1 lm		
NAME: M20-T41102-12G40	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 46.21 lm/W			
MODEL	4000K CRI90	I _{max} (cd)	346.3	S/MH(C0/180)	1.17
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	1.38
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	555.60	η UP,DN(C0-180)	0.0,21.1
NOMINAL FLUX(lm)	555.596	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,78.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	225.1	η down(%)	100.0	CIBSE SHR MAX	1.15



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
Humidity:65.0%
Test Distance:8.402m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	262.0	207.4	184.7	208.8	264.4	316.1	332.5	313.1	0- 10	25.42	25.42	4.58,4.58
20	238.8	139.3	101.7	140.9	243.5	326.9	345.8	322.2	10- 20	69.88	95.30	17.2,17.2
30	204.9	79.22	38.03	80.70	211.4	306.4	317.7	300.2	20- 30	98.22	193.5	34.8,34.8
40	163.8	31.00	1.311	32.57	171.3	261.8	222.8	252.2	30- 40	105.1	298.6	53.7,53.7
50	123.3	2.267	0.4680	0.9325	131.1	194.1	137.4	184.7	40- 50	93.85	392.4	70.6,70.6
60	85.04	1.253	0.4672	0.2224	92.80	131.0	87.35	124.7	50- 60	74.89	467.3	84.1,84.1
70	47.61	1.047	0.5886	0.4235	55.15	80.91	62.46	75.36	60- 70	52.90	520.2	93.6,93.6
80	13.24	1.080	0.8148	0.7252	19.22	34.51	24.85	28.22	70- 80	29.19	549.4	98.9,98.9
90	0.9367	1.264	1.246	1.101	1.837	2.007	1.951	1.936	80- 90	6.168	555.6	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 347.5 lm

%lum = 62.5%

%lamp = 62.5%

Conical surface Flux(120deg): 467.34 lm

%lum = 84.1%

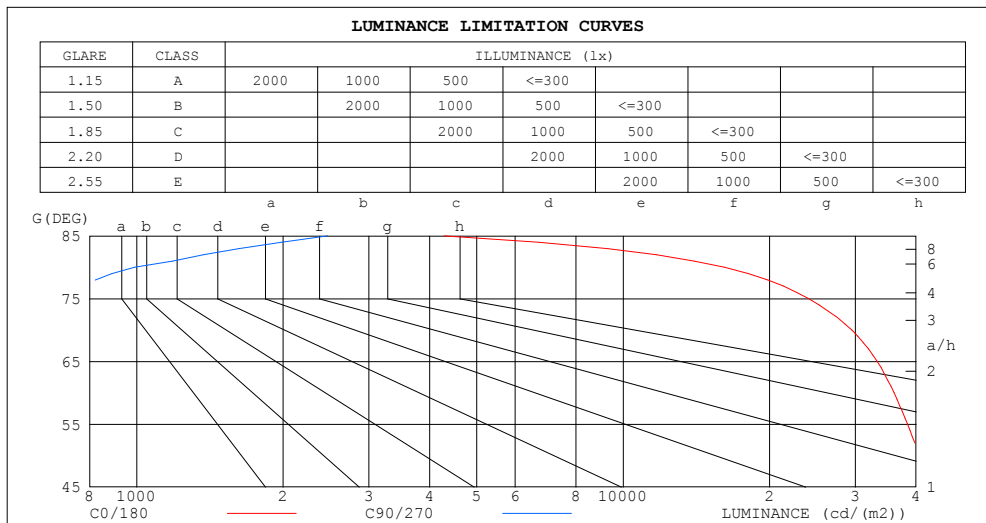
%lamp = 84.1%

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:ZR
 Test Date:2021-08-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
 Humidity:65.0%
 Test Distance:8.402m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:48.00V I:0.2505A P:12.02W PF:1.000 Freq:50.00Hz Lamp Flux:555.596x1 lm		
NAME: M20-T41102-12G40	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	4283	2467
80	16153	990
75	24060	591
70	29502	363
65	33288	249
60	36046	197
55	38416	171
50	40643	154
45	42927	159

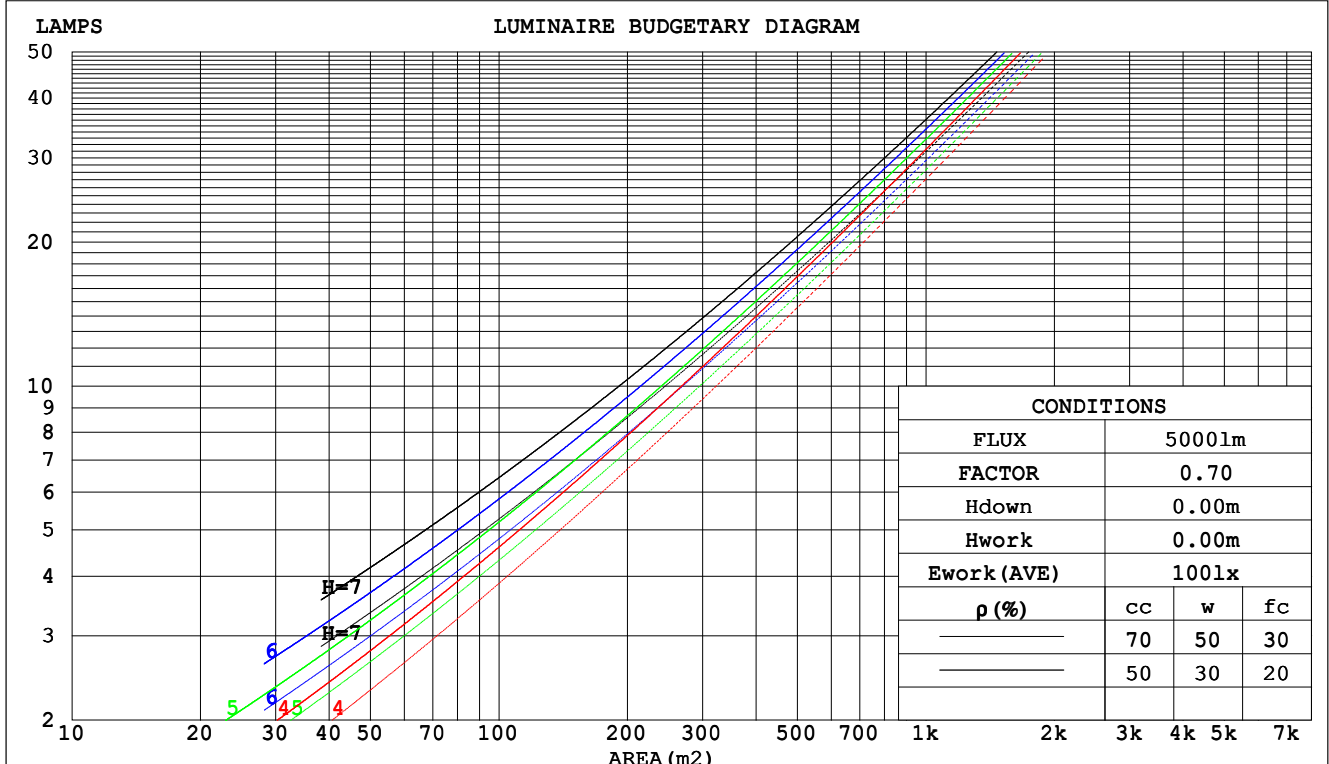
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
Humidity:65.0%
Test Distance:8.402m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:48.00V I:0.2505A P:12.02W PF:1.000 Freq:50.00Hz Lamp Flux:555.596x1 lm		
NAME: M20-T41102-12G40	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Coefficients of Utilization(CU)												
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.06	1.02	.98	1.03	.90	.97	.99	.96	.94	.95	.93	.91	.92	.90	.88	.86
2.0	.93	.87	.82	.91	.86	.81	.88	.83	.79	.85	.81	.77	.82	.78	.75	.73
3.0	.83	.75	.69	.81	.74	.69	.78	.72	.68	.76	.71	.66	.73	.69	.65	.63
4.0	.74	.66	.60	.73	.65	.59	.71	.64	.59	.68	.63	.58	.66	.61	.57	.55
5.0	.67	.59	.52	.66	.58	.52	.64	.57	.52	.62	.56	.51	.60	.55	.51	.49
6.0	.61	.52	.46	.60	.52	.46	.58	.51	.46	.57	.50	.45	.55	.49	.45	.43
7.0	.56	.47	.42	.55	.47	.41	.53	.46	.41	.52	.46	.41	.51	.45	.41	.39
8.0	.51	.43	.37	.50	.43	.37	.49	.42	.37	.48	.42	.37	.47	.41	.37	.35
9.0	.47	.39	.34	.47	.39	.34	.45	.39	.34	.44	.38	.34	.43	.38	.33	.32
10.0	.44	.36	.31	.43	.36	.31	.42	.36	.31	.41	.35	.31	.40	.35	.31	.29



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:ZR
 Test Date:2021-08-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
 Humidity:65.0%
 Test Distance:8.402m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:48.00V I:0.2505A P:12.02W PF:1.000 Freq:50.00Hz Lamp Flux:555.596x1 lm					
NAME: M20-T41102-12G40			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:220*21.6		Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.278	.158	.050	.271	.155	.049	.258	.148	.047	.246	.142	.046	.235	.136	.044	
2.0	.265	.145	.045	.259	.142	.044	.247	.137	.043	.237	.133	.042	.227	.128	.040	
3.0	.247	.132	.039	.242	.130	.039	.232	.126	.038	.222	.122	.037	.214	.118	.037	
4.0	.230	.119	.035	.225	.118	.035	.216	.115	.034	.208	.112	.034	.200	.109	.033	
5.0	.214	.109	.032	.210	.108	.031	.202	.105	.031	.194	.103	.031	.188	.100	.030	
6.0	.199	.100	.029	.196	.099	.028	.189	.097	.028	.182	.095	.028	.176	.093	.028	
7.0	.187	.092	.026	.183	.091	.026	.177	.090	.026	.171	.088	.026	.166	.086	.025	
8.0	.175	.086	.024	.172	.085	.024	.167	.083	.024	.161	.082	.024	.156	.080	.023	
9.0	.165	.080	.022	.162	.079	.022	.157	.078	.022	.152	.076	.022	.148	.075	.022	
10.0	.155	.075	.021	.153	.074	.021	.149	.073	.020	.144	.072	.020	.140	.071	.020	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.178	.156	.137	.152	.134	.118	.104	.092	.081	.060	.053	.047	.019	.017	.015	
2.0	.169	.132	.101	.144	.114	.088	.099	.079	.061	.057	.046	.036	.018	.015	.012	
3.0	.160	.114	.078	.137	.098	.067	.094	.068	.047	.054	.040	.028	.017	.013	.009	
4.0	.152	.101	.061	.131	.087	.053	.090	.061	.037	.052	.035	.022	.017	.012	.007	
5.0	.145	.090	.050	.124	.078	.043	.086	.054	.030	.050	.032	.018	.016	.010	.006	
6.0	.137	.081	.041	.118	.070	.036	.082	.049	.025	.047	.029	.015	.015	.009	.005	
7.0	.131	.074	.035	.113	.064	.030	.078	.045	.022	.045	.027	.013	.015	.009	.004	
8.0	.125	.069	.030	.107	.059	.026	.074	.042	.019	.043	.025	.011	.014	.008	.004	
9.0	.119	.064	.026	.102	.055	.023	.071	.039	.016	.041	.023	.010	.013	.008	.003	
10.0	.113	.059	.023	.098	.051	.020	.068	.036	.014	.040	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
Humidity:65.0%
Test Distance:8.402m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:48.00V I:0.2505A P:12.02W PF:1.000 Freq:50.00Hz Lamp Flux:555.596x1 lm											
NAME: M20-T41102-12G40						TYPE:		WEIGHT:			
SPEC.:						DIM.:		SERIAL No.:			
MFR.:						SUR.:220*21.6		Shielding Angle:			
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3	
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3	
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Room dimensions		Viewed crosswise				Viewed endwise					
x = 2H y = 2H		23.4	24.8	23.6	25.0	25.2	6.1	7.5	6.3	7.7	7.9
	3H	24.6	25.9	24.9	26.1	26.3	6.0	7.3	6.3	7.5	7.7
	4H	25.0	26.3	25.4	26.5	26.8	6.0	7.3	6.4	7.5	7.8
	6H	25.4	26.5	25.7	26.8	27.1	6.4	7.5	6.7	7.8	8.1
	8H	25.4	26.5	25.7	26.8	27.1	6.8	7.9	7.1	8.2	8.5
	12H	25.4	26.5	25.7	26.7	27.0	7.5	8.5	7.8	8.8	9.1
4H	2H	23.0	24.3	23.3	24.5	24.8	7.1	8.3	7.4	8.6	8.8
	3H	24.3	25.4	24.6	25.6	25.9	7.0	8.1	7.4	8.4	8.7
	4H	24.7	25.7	25.1	26.0	26.4	7.2	8.1	7.5	8.5	8.8
	6H	25.1	25.9	25.5	26.3	26.6	7.6	8.5	8.0	8.8	9.2
	8H	25.1	25.9	25.5	26.3	26.7	8.1	8.9	8.5	9.3	9.7
	12H	25.1	25.9	25.6	26.3	26.7	9.0	9.7	9.4	10.1	10.5
8H	4H	24.6	25.4	25.0	25.8	26.2	7.4	8.2	7.8	8.6	9.0
	6H	24.9	25.6	25.4	26.0	26.4	8.1	8.8	8.6	9.2	9.6
	8H	25.0	25.6	25.5	26.0	26.5	8.9	9.4	9.3	9.9	10.3
	12H	25.0	25.5	25.5	26.0	26.5	10.0	10.6	10.5	11.0	11.5
12H	4H	24.6	25.3	25.0	25.7	26.1	7.5	8.3	7.9	8.6	9.0
	6H	24.9	25.5	25.4	25.9	26.4	8.4	9.0	8.8	9.4	9.8
	8H	25.0	25.5	25.5	25.9	26.4	9.2	9.7	9.7	10.2	10.6
Variations with the observer position at spacings:											
S = 1.0H		+ 2.0 / - 2.2				+ 1.4 / - 1.3					
1.5H		+ 3.2 / - 6.9				+ 1.7 / - 1.3					
2.0H		+ 4.4 / -10.1				+ 0.6 / - 0.3					

CIE Pub.117, 555.6 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -2.0)

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
Humidity:65.0%
Test Distance:8.402m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:48.00V I:0.2505A P:12.02W PF:1.000 Freq:50.00Hz Lamp Flux:555.596x1 lm		
NAME: M20-T41102-12G40	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:

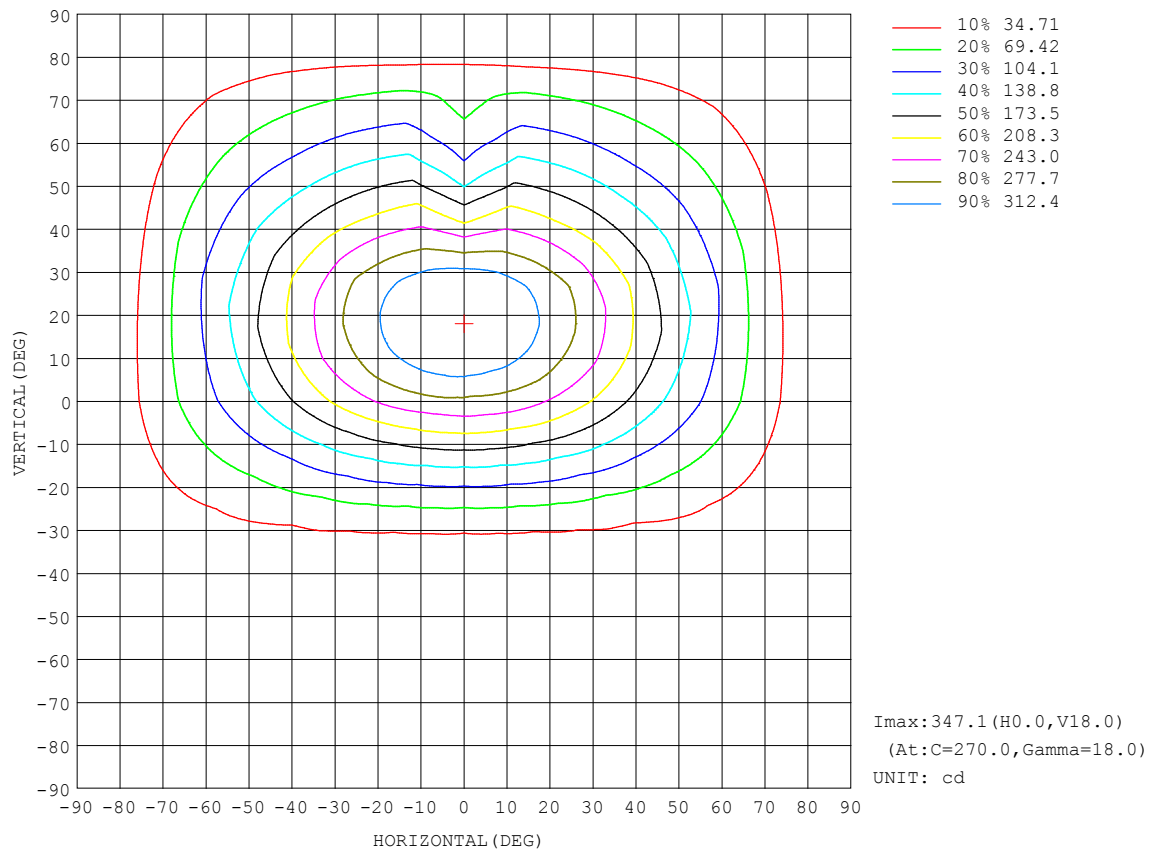
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	63	52	46	62	52	46	61	52	46	40
0.80	73	62	55	72	62	55	70	61	55	49
1.00	81	71	64	79	70	64	77	71	63	57
1.25	87	78	71	86	77	71	83	76	70	64
1.50	92	83	77	90	82	76	87	80	75	68
2.00	98	90	85	96	89	84	93	87	82	75
2.50	101	94	89	99	93	88	96	91	86	79
3.00	104	98	93	102	97	92	98	94	90	82
4.00	108	103	99	106	101	97	102	98	95	86
5.00	110	106	102	108	104	101	103	100	98	89
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
Humidity:65.0%
Test Distance:8.402m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:48.00V I:0.2505A P:12.02W PF:1.000 Freq:50.00Hz Lamp Flux:555.596x1 lm		
NAME: M20-T41102-12G40	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:

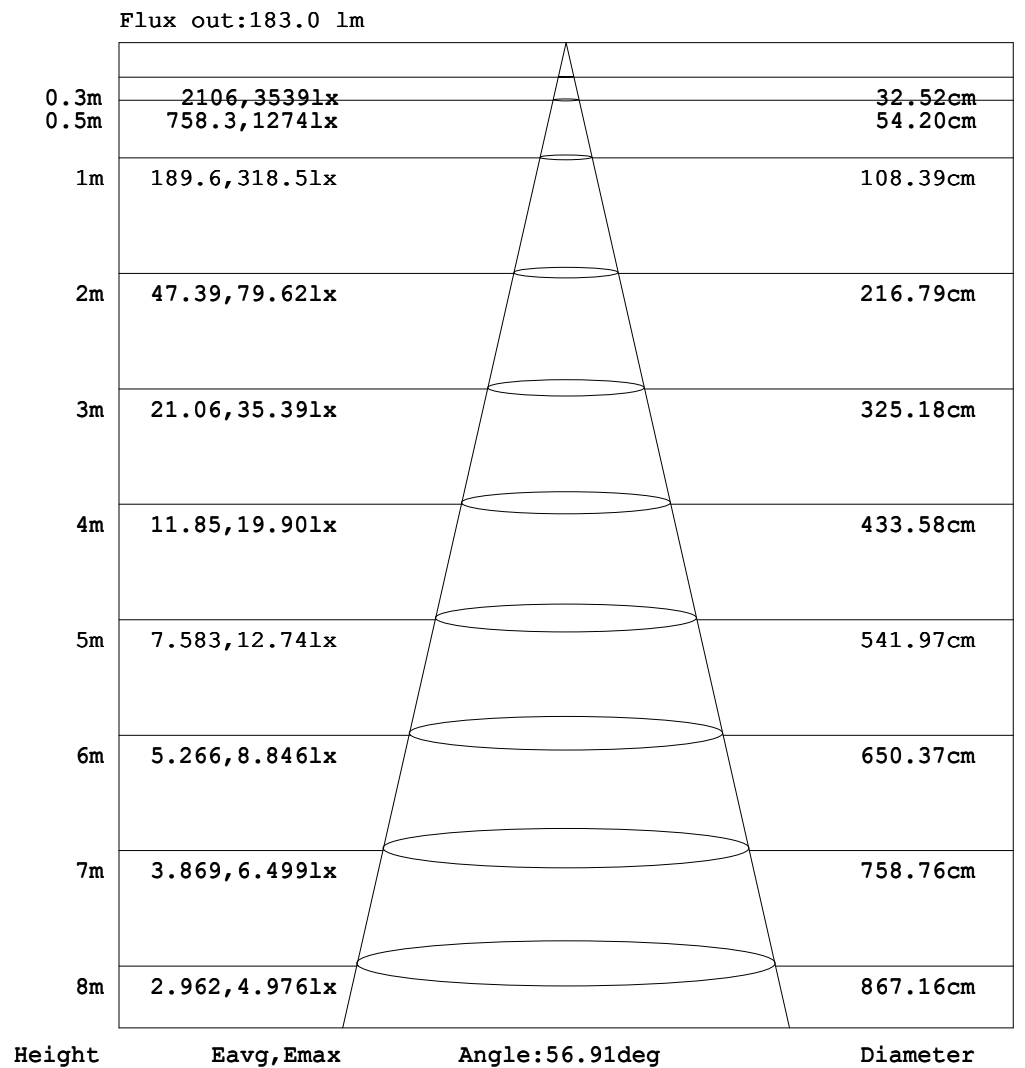


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
Humidity:65.0%
Test Distance:8.402m [K=1.0000]
Remarks:

AAI Figure

Test:U:48.00V I:0.2505A P:12.02W PF:1.000 Freq:50.00Hz Lamp Flux:555.596x1 lm		
NAME: M20-T41102-12G40	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:



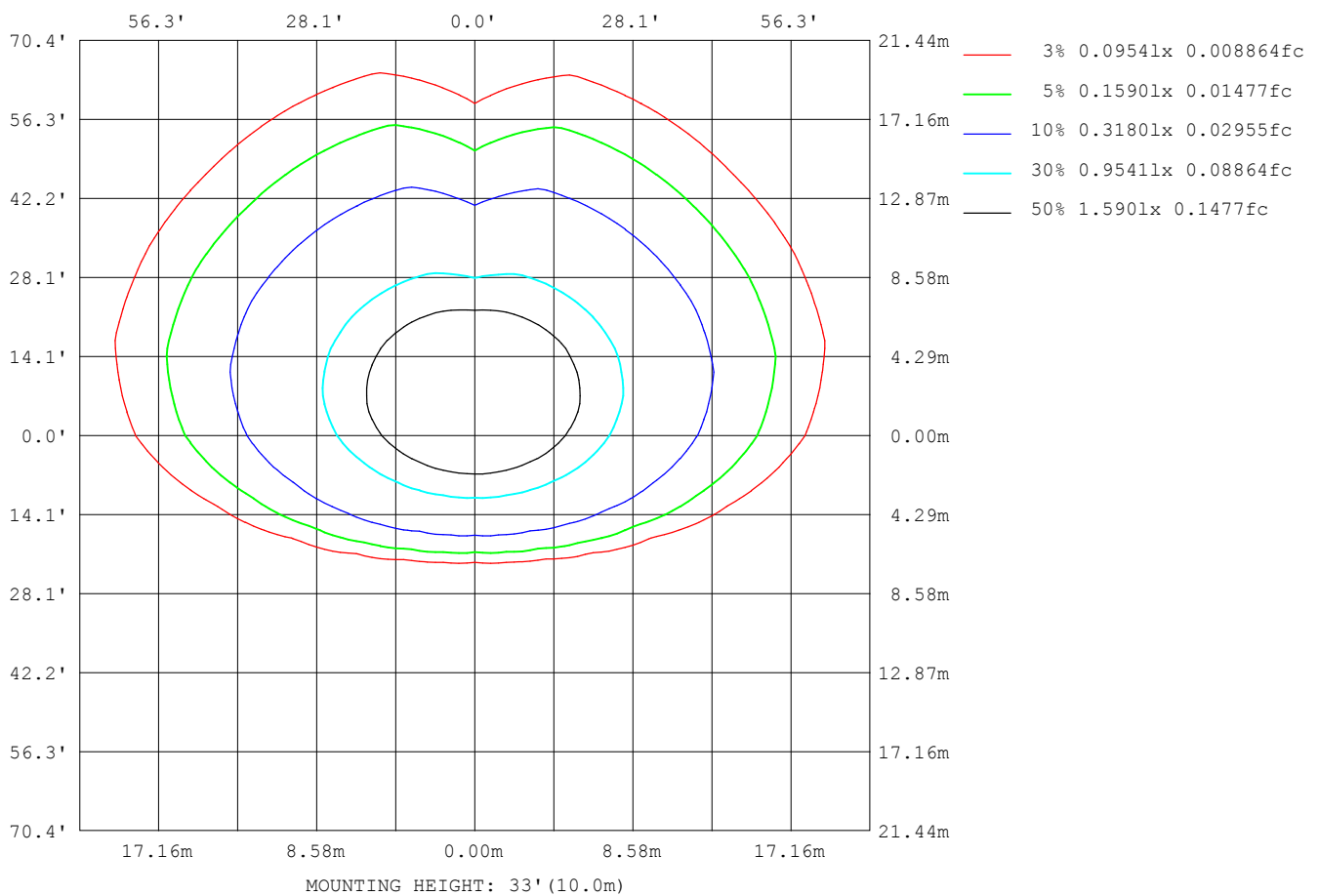
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
Humidity:65.0%
Test Distance:8.402m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:48.00V I:0.2505A P:12.02W PF:1.000 Freq:50.00Hz Lamp Flux:555.596x1 lm		
NAME: M20-T41102-12G40	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:ZR
 Test Date:2021-08-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
 Humidity:65.0%
 Test Distance:8.402m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:48.00V I:0.2505A P:12.02W PF:1.000 Freq:50.00Hz Lamp Flux:555.596x1 lm		
NAME: M20-T41102-12G40	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:

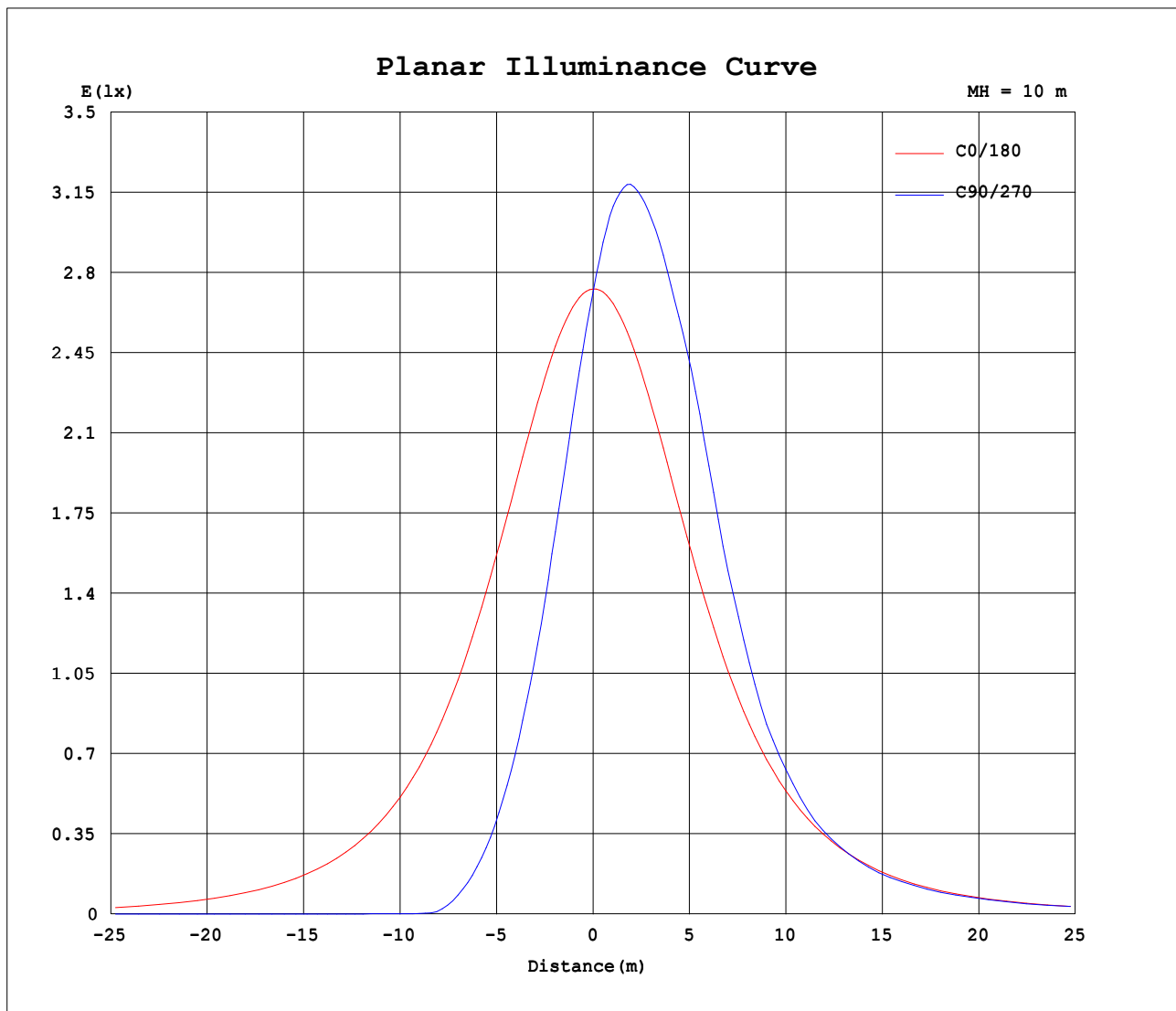
AvgL	cd/m2
L_0~180 (65) av	34961
L_0~180 (75) av	26743
L_0~180 (85) av	8587
L_90~270 (65) av	17792
L_90~270 (75) av	21968
L_90~270 (85) av	5302
L_45 (65) av	25460
L_45 (75) av	22953
L_45 (85) av	10511

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:ZR
 Test Date:2021-08-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
 Humidity:65.0%
 Test Distance:8.402m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: ZR
Test Date: 2021-08-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.354
Humidity: 65.0%
Test Distance: 8.402m [K=1.0000]
Remarks:

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γ Interval: 1.0DEG
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