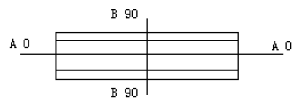
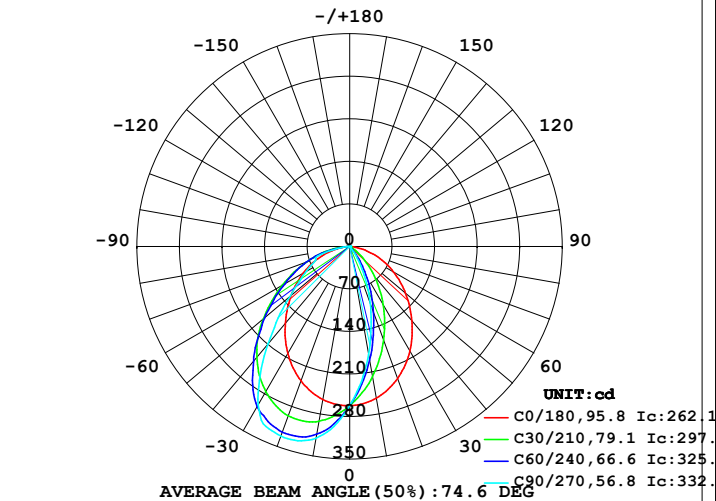


LUMINAIRE PHOTOMETRIC TEST REPORT

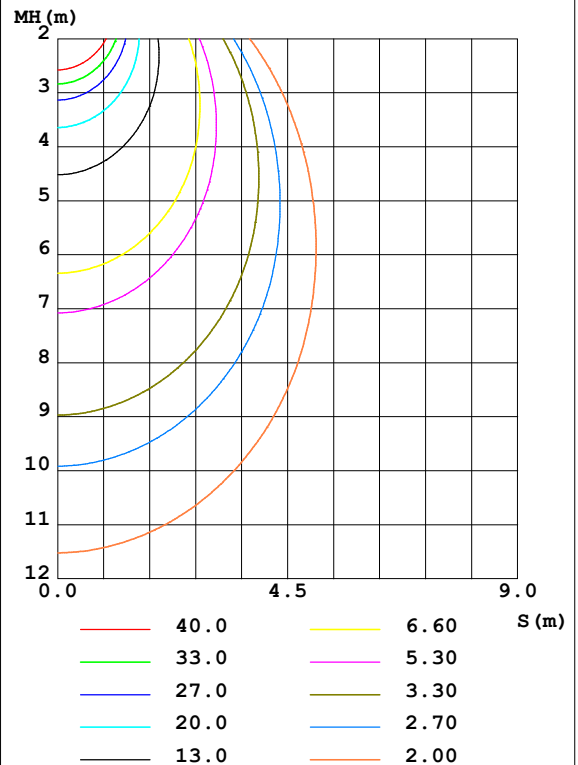
Test:U:48.00V I:0.2373A P:11.39W PF:1.000 Freq:50.00Hz Lamp Flux:532.818x1 lm		
NAME: M20-T41102-12G30	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 46.78 lm/W			
MODEL	3000K CRI90	I _{max} (cd)	332.4	S/MH(C0/180)	1.17
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	1.37
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	532.82	η UP,DN(C0-180)	0.0,21.5
NOMINAL FLUX(lm)	532.818	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,78.5
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

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



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	253.4	202.1	180.5	203.0	255.7	304.4	320.5	302.7	0- 10	24.61	24.61	4.62,4.62
20	231.1	136.7	99.44	137.5	235.2	313.9	331.7	308.7	10- 20	67.58	92.20	17.3,17.3
30	198.7	78.01	37.23	78.39	204.0	293.3	301.3	287.5	20- 30	94.75	186.9	35.1,35.1
40	159.4	30.94	1.466	31.30	165.1	249.8	209.1	241.6	30- 40	101.2	288.1	54.1,54.1
50	120.2	2.406	0.4685	0.9833	125.8	185.2	128.3	177.6	40- 50	90.34	378.5	71,71
60	83.22	1.223	0.4770	0.2231	88.75	124.1	82.70	120.0	50- 60	71.82	450.3	84.5,84.5
70	47.11	1.005	0.5944	0.4195	52.36	74.98	60.08	70.76	60- 70	50.33	500.6	94,94
80	13.54	1.028	0.8382	0.7063	17.71	29.85	19.83	25.20	70- 80	26.96	527.6	99,99
90	0.8532	1.181	1.152	1.014	1.717	1.869	1.826	1.810	80- 90	5.235	532.8	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): 335.22 lm

%lum = 62.9%

%lamp = 62.9%

Conical surface Flux(120deg): 450.29 lm

%lum = 84.5%

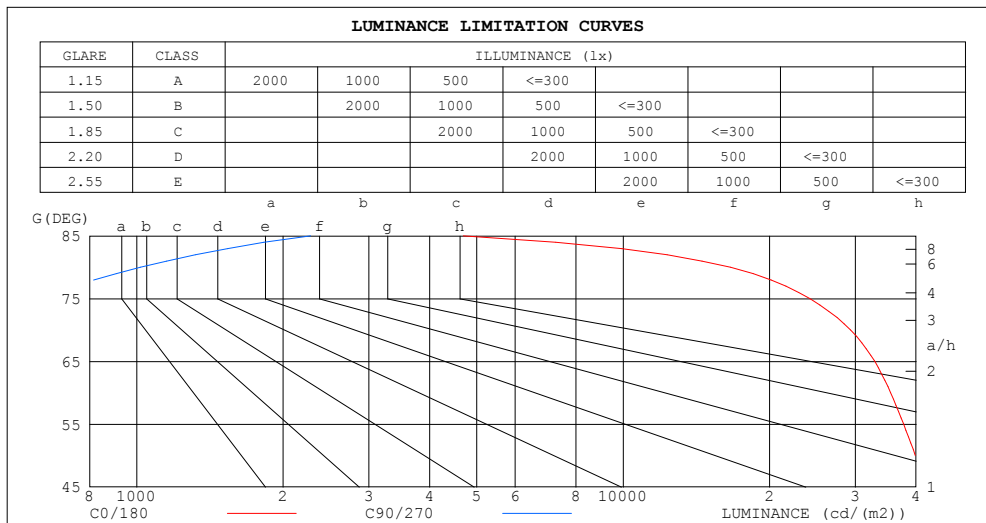
%lamp = 84.5%

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:0.2373A P:11.39W PF:1.000 Freq:50.00Hz Lamp Flux:532.818x1 lm		
NAME: M20-T41102-12G30	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	4693	2277
80	16619	1017
75	24205	599
70	29362	366
65	32915	257
60	35480	201
55	37723	172
50	39859	154
45	42045	157

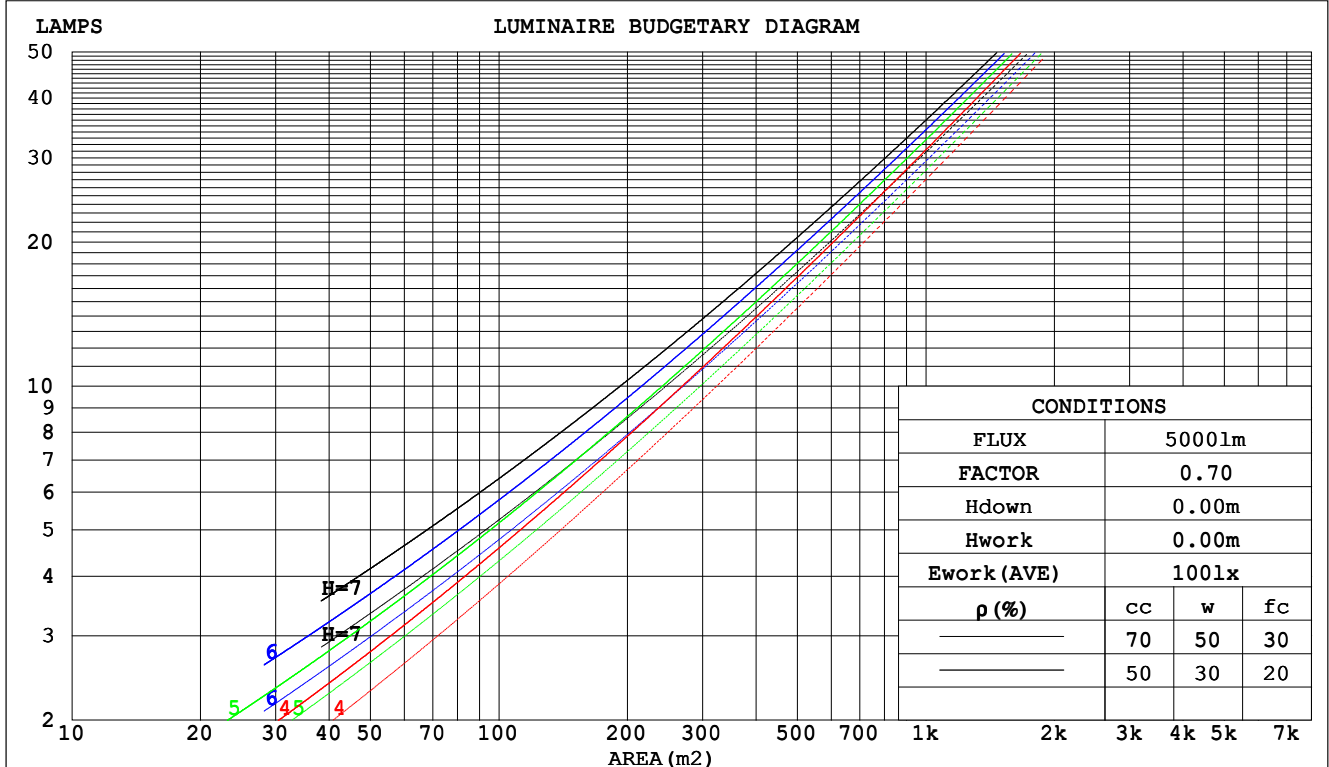
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

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:0.2373A P:11.39W PF:1.000 Freq:50.00Hz Lamp Flux:532.818x1 lm		
NAME: M20-T41102-12G30	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	.92	.86	.81	.88	.83	.79	.85	.81	.77	.82	.79	.76	.74
3.0	.83	.76	.70	.82	.75	.69	.79	.73	.68	.76	.71	.67	.73	.69	.66	.64
4.0	.74	.66	.60	.73	.66	.60	.71	.64	.59	.68	.63	.58	.66	.61	.57	.55
5.0	.67	.59	.53	.66	.58	.52	.64	.57	.52	.62	.56	.51	.60	.55	.51	.49
6.0	.61	.53	.47	.60	.52	.46	.58	.51	.46	.57	.50	.46	.55	.50	.45	.43
7.0	.56	.48	.42	.55	.47	.42	.54	.46	.41	.52	.46	.41	.51	.45	.41	.39
8.0	.51	.43	.38	.51	.43	.38	.49	.42	.37	.48	.42	.37	.47	.41	.37	.35
9.0	.47	.40	.34	.47	.39	.34	.46	.39	.34	.45	.38	.34	.44	.38	.34	.32
10.0	.44	.36	.31	.43	.36	.31	.42	.36	.31	.42	.35	.31	.41	.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:0.2373A P:11.39W PF:1.000 Freq:50.00Hz Lamp Flux:532.818x1 lm					
NAME: M20-T41102-12G30			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	.276	.157	.050	.269	.153	.049	.255	.147	.047	.243	.140	.045	.232	.135	.043	
2.0	.263	.144	.044	.257	.141	.044	.245	.136	.042	.235	.132	.041	.225	.127	.040	
3.0	.246	.131	.039	.241	.129	.039	.230	.125	.038	.221	.121	.037	.213	.118	.036	
4.0	.229	.119	.035	.224	.117	.035	.215	.114	.034	.207	.111	.034	.199	.108	.033	
5.0	.213	.109	.031	.209	.107	.031	.201	.105	.031	.194	.102	.030	.187	.100	.030	
6.0	.199	.100	.029	.195	.099	.028	.188	.096	.028	.182	.094	.028	.175	.092	.027	
7.0	.186	.092	.026	.183	.091	.026	.177	.089	.026	.171	.088	.025	.165	.086	.025	
8.0	.175	.085	.024	.172	.085	.024	.166	.083	.024	.161	.081	.024	.156	.080	.023	
9.0	.164	.079	.022	.162	.079	.022	.157	.077	.022	.152	.076	.022	.147	.075	.022	
10.0	.155	.074	.021	.153	.074	.021	.148	.073	.020	.144	.071	.020	.140	.070	.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	.082	.060	.053	.047	.019	.017	.015	
2.0	.168	.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	.130	.087	.053	.090	.061	.038	.052	.035	.022	.017	.012	.007	
5.0	.144	.090	.050	.124	.078	.043	.085	.054	.031	.049	.032	.018	.016	.010	.006	
6.0	.137	.081	.041	.118	.070	.036	.081	.049	.025	.047	.029	.015	.015	.009	.005	
7.0	.131	.074	.035	.112	.064	.030	.078	.045	.022	.045	.027	.013	.015	.009	.004	
8.0	.124	.068	.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	.039	.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:0.2373A P:11.39W PF:1.000 Freq:50.00Hz Lamp Flux:532.818x1 lm											
NAME: M20-T41102-12G30						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		23.6	25.0	23.8	25.2	25.4	6.3	7.7	6.6	7.9	8.1
	3H	24.8	26.1	25.1	26.4	26.6	6.2	7.5	6.5	7.8	8.0
	4H	25.3	26.5	25.6	26.8	27.0	6.3	7.5	6.6	7.8	8.0
	6H	25.6	26.8	26.0	27.1	27.3	6.6	7.8	7.0	8.1	8.3
	8H	25.7	26.8	26.0	27.1	27.4	7.0	8.1	7.3	8.4	8.7
	12H	25.7	26.7	26.0	27.0	27.3	7.6	8.7	7.9	8.9	9.2
4H	2H	23.3	24.5	23.6	24.7	25.0	7.4	8.6	7.7	8.9	9.1
	3H	24.5	25.6	24.9	25.9	26.2	7.3	8.4	7.7	8.7	9.0
	4H	25.0	26.0	25.4	26.3	26.6	7.5	8.4	7.8	8.7	9.1
	6H	25.3	26.2	25.7	26.6	26.9	7.9	8.7	8.3	9.1	9.4
	8H	25.4	26.2	25.8	26.6	27.0	8.3	9.1	8.7	9.5	9.9
	12H	25.4	26.2	25.8	26.5	26.9	9.1	9.8	9.5	10.2	10.6
8H	4H	24.9	25.7	25.3	26.0	26.4	7.7	8.5	8.1	8.9	9.3
	6H	25.2	25.9	25.7	26.3	26.7	8.4	9.0	8.8	9.4	9.9
	8H	25.3	25.9	25.8	26.3	26.8	9.0	9.6	9.5	10.0	10.5
	12H	25.3	25.8	25.8	26.3	26.7	10.1	10.6	10.5	11.0	11.5
12H	4H	24.8	25.6	25.2	25.9	26.3	7.8	8.5	8.2	8.9	9.3
	6H	25.2	25.8	25.6	26.2	26.6	8.6	9.2	9.0	9.6	10.1
	8H	25.3	25.8	25.7	26.2	26.7	9.3	9.8	9.8	10.3	10.8
Variations with the observer position at spacings:											
S = 1.0H	+ 1.9 / - 2.1					+ 1.4 / - 1.4					
1.5H	+ 3.2 / - 6.7					+ 1.9 / - 1.5					
2.0H	+ 4.3 / -10.0					+ 0.7 / - 0.3					

CIE Pub.117, 532.8 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -2.2)

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:0.2373A P:11.39W PF:1.000 Freq:50.00Hz Lamp Flux:532.818x1 lm		
NAME: M20-T41102-12G30	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:

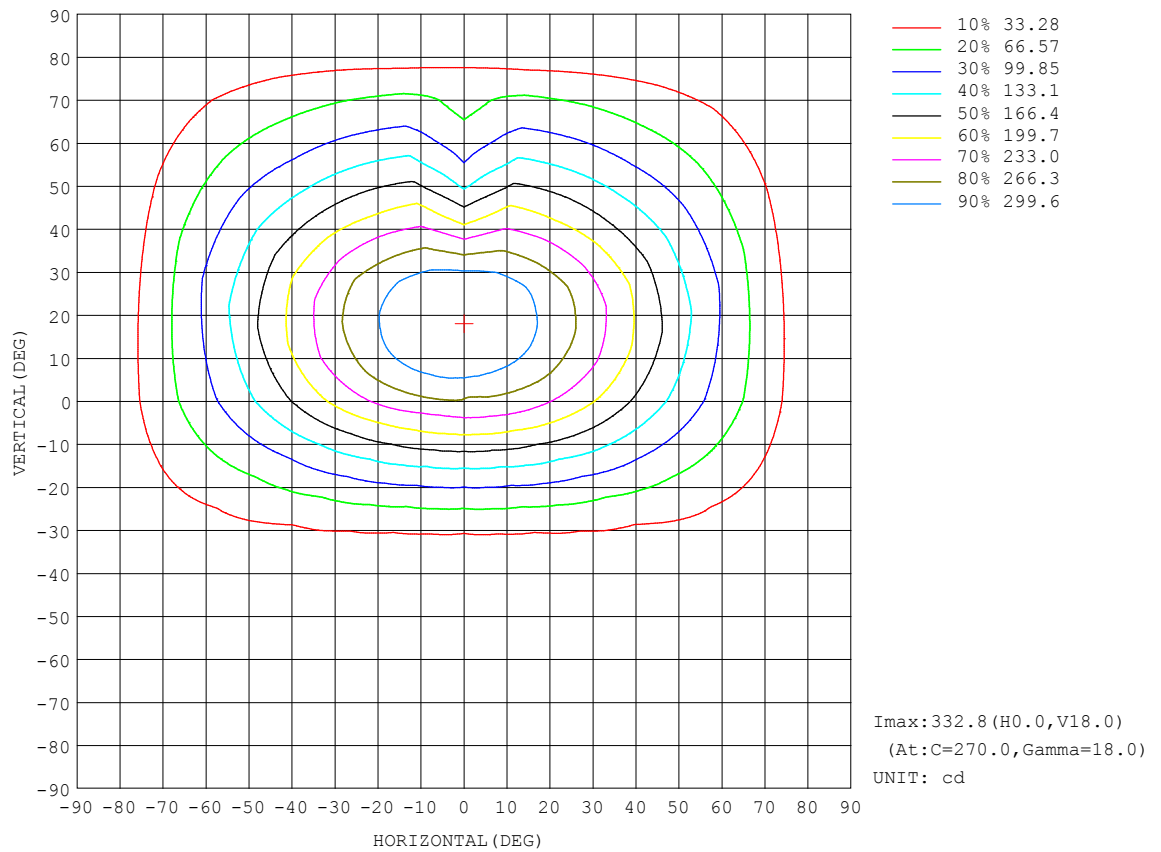
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	63	52	46	62	52	46	61	52	46	40
0.80	73	62	56	72	62	56	70	61	55	49
1.00	81	71	64	80	70	64	78	71	63	57
1.25	87	78	72	86	77	71	84	76	71	64
1.50	92	83	77	90	82	77	88	81	75	69
2.00	98	91	85	96	89	84	93	87	83	75
2.50	102	95	89	100	93	88	96	91	87	79
3.00	104	98	94	102	97	93	99	94	90	82
4.00	108	103	99	106	101	98	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:0.2373A P:11.39W PF:1.000 Freq:50.00Hz Lamp Flux:532.818x1 lm		
NAME: M20-T41102-12G30	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:

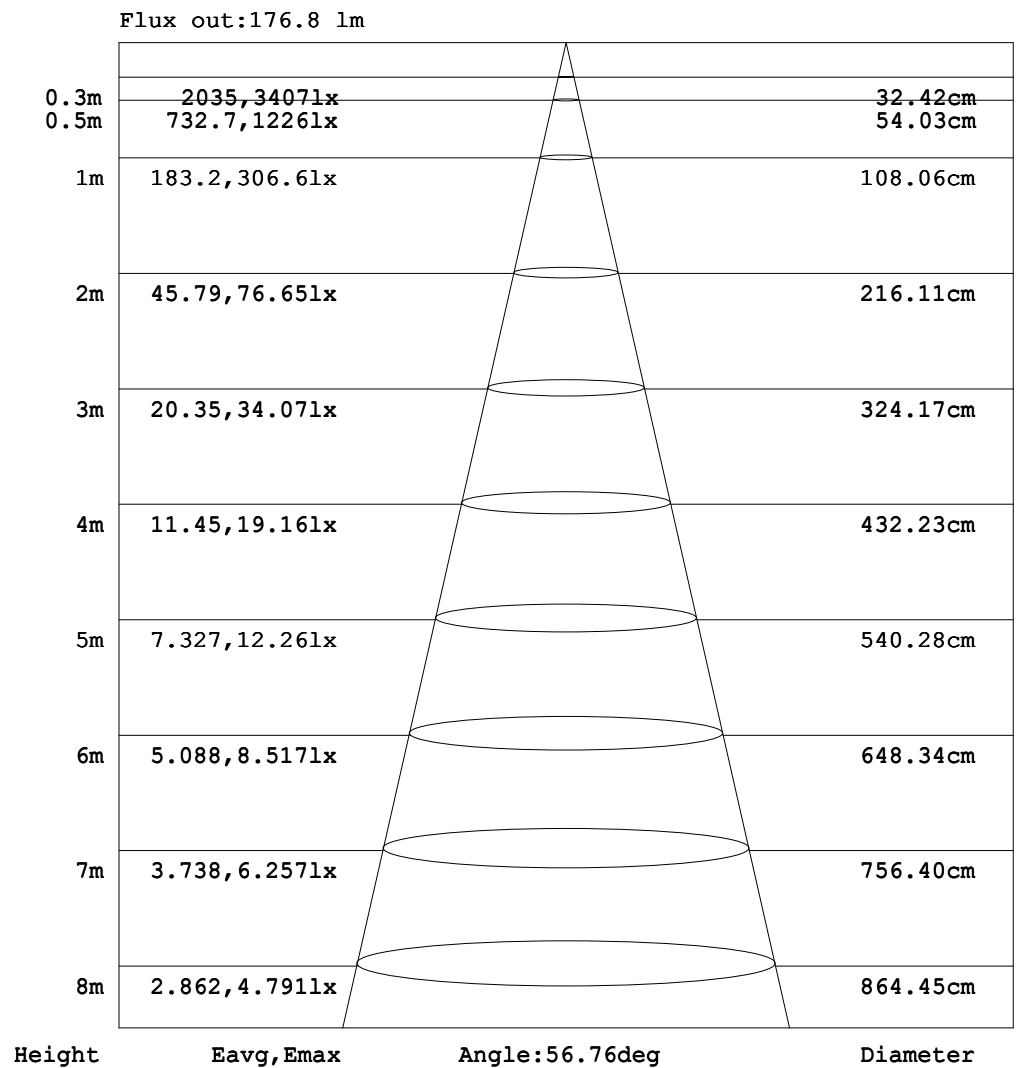


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

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:0.2373A P:11.39W PF:1.000 Freq:50.00Hz Lamp Flux:532.818x1 lm		
NAME: M20-T41102-12G30	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:



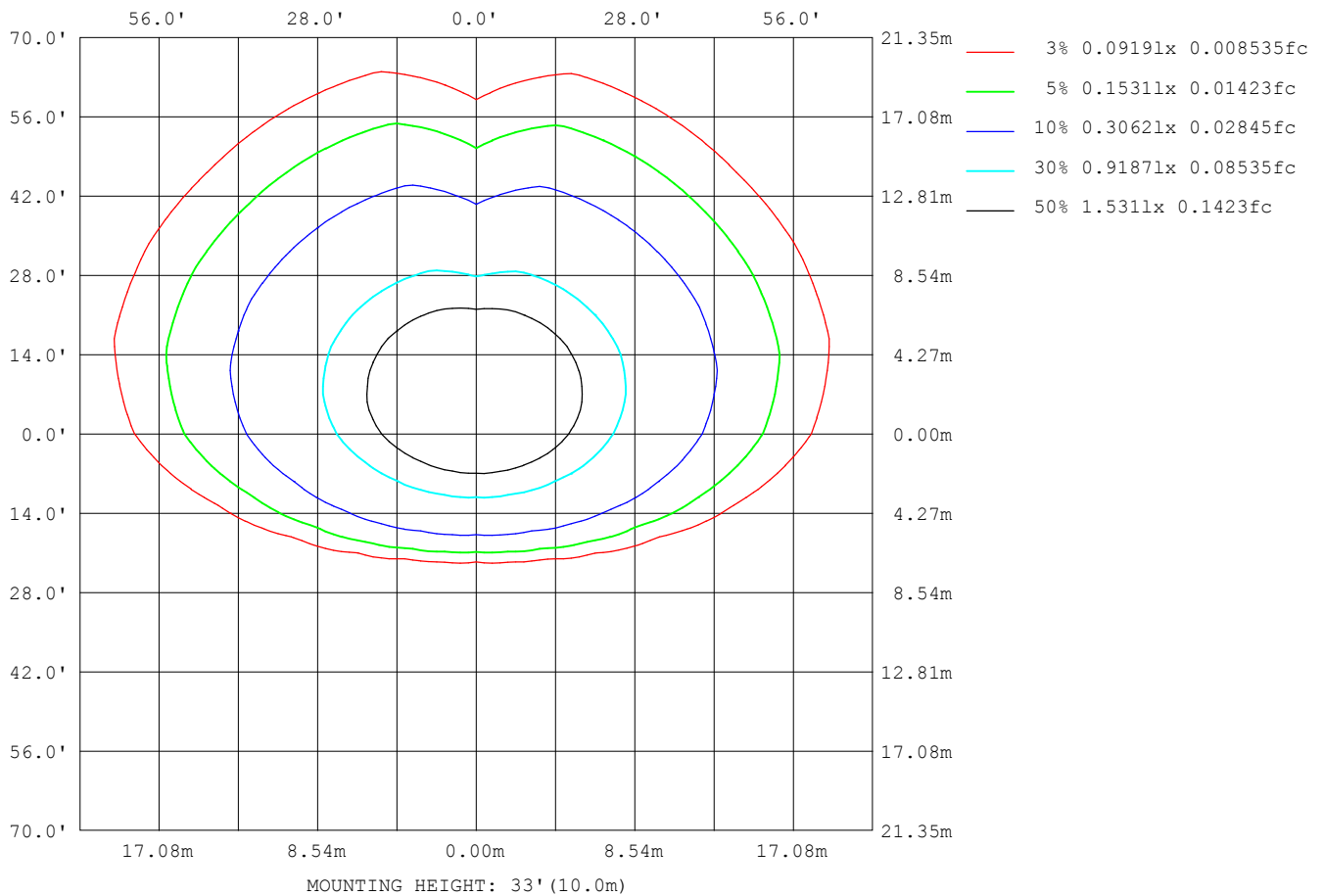
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:0.2373A P:11.39W PF:1.000 Freq:50.00Hz Lamp Flux:532.818x1 lm		
NAME: M20-T41102-12G30	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:0.2373A P:11.39W PF:1.000 Freq:50.00Hz Lamp Flux:532.818x1 lm		
NAME: M20-T41102-12G30	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:220*21.6	Shielding Angle:

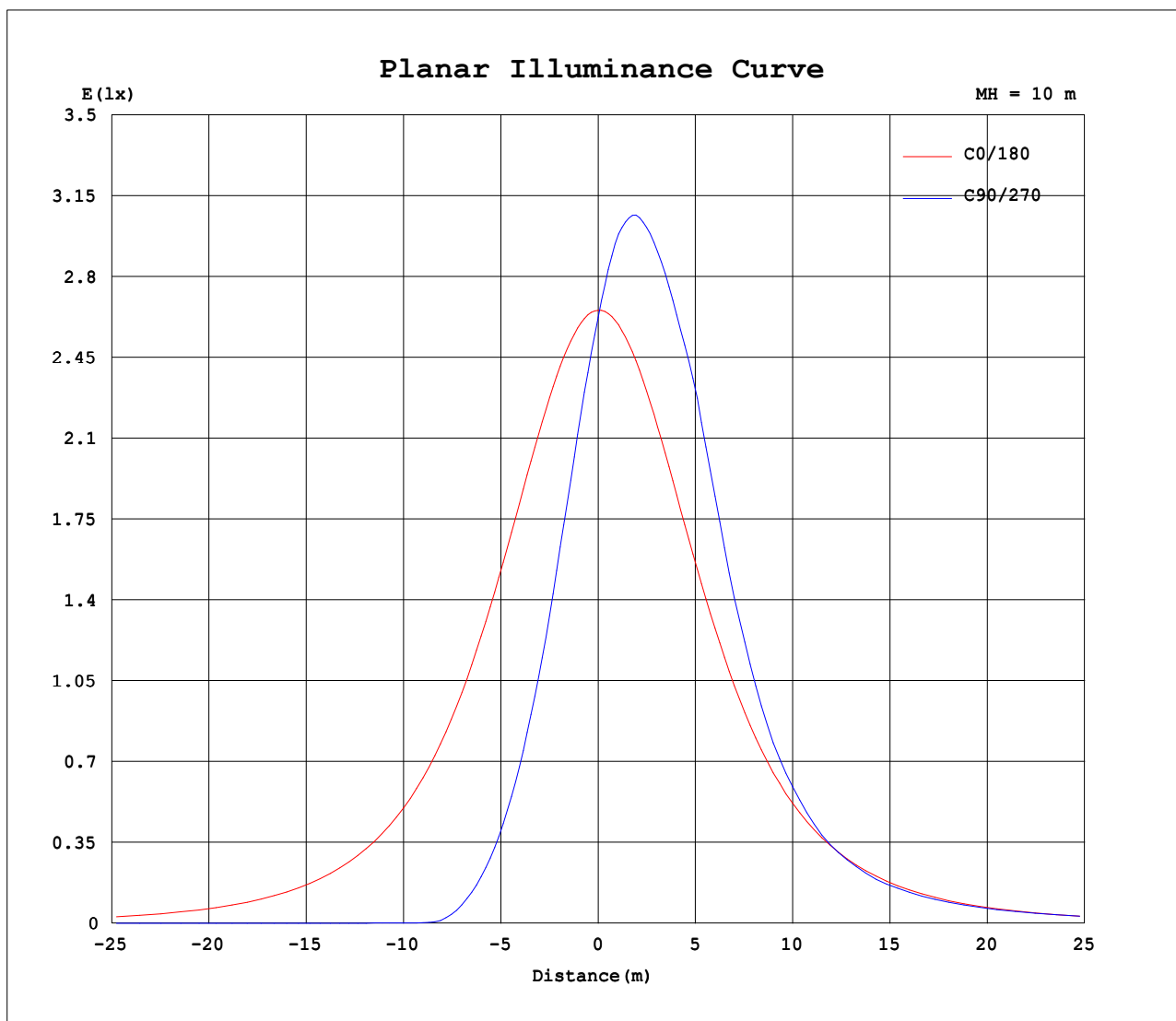
AvgL	cd/m2
L_0~180 (65) av	33842
L_0~180 (75) av	25860
L_0~180 (85) av	7926
L_90~270 (65) av	16952
L_90~270 (75) av	19475
L_90~270 (85) av	3759
L_45 (65) av	24090
L_45 (75) av	21108
L_45 (85) av	7412

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:

```

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:

```

```

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:

```