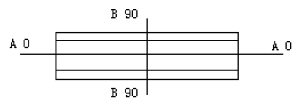
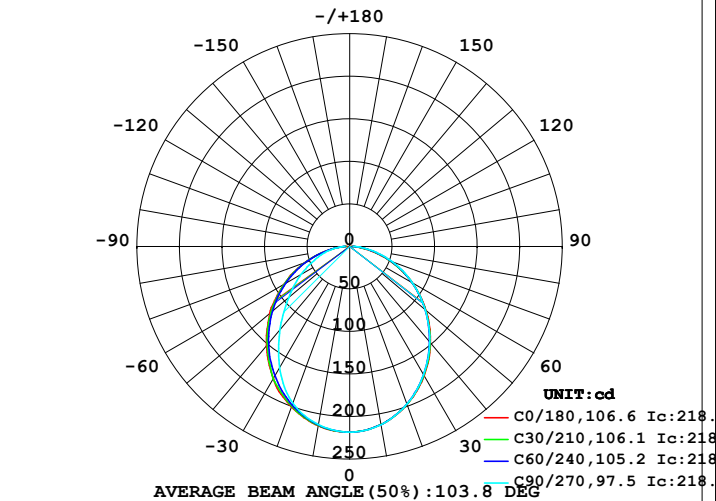


## LUMINAIRE PHOTOMETRIC TEST REPORT

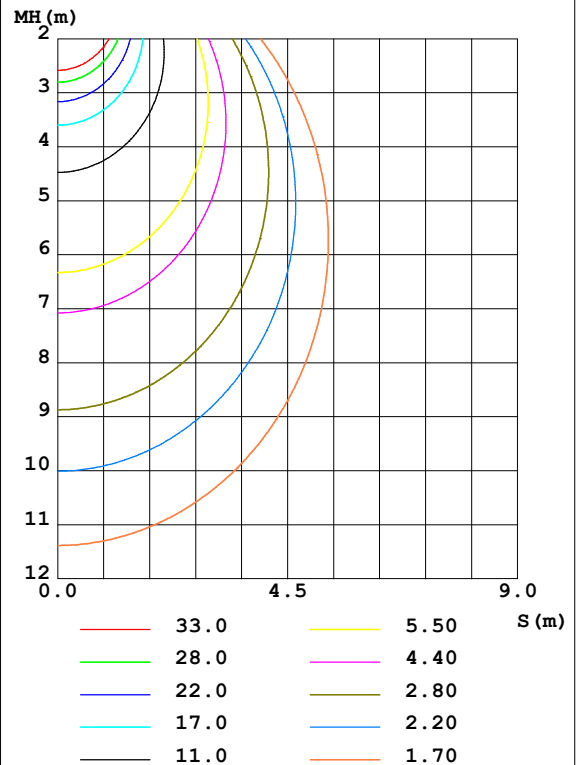
Test:U:48.00V I:0.1978A P:9.494W PF:1.000 Freq:50.00Hz Lamp Flux:581.058x1 lm		
NAME: M20-T41303-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:305*21.6	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 61.20 lm/W
MODEL	4000K CRI90	I <sub>max</sub> (cd)	218.3	S/MH(C0/180)	1.23	
NOMINAL POWER(W)	9	LOR(%)	100.0	S/MH(C90/270)	1.14	
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	581.06	η UP,DN(C0-180)	0.0,50.0	
NOMINAL FLUX(lm)	581.058	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.0	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25	
TEST VOLTAGE(V)	225.4	η down(%)	100.0	CIBSE SHR MAX	1.35	

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:2021-08-30

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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	212.6	212.6	212.8	213.2	213.9	213.2	212.6	212.5	0- 10	20.58	20.58	3.54,3.54
20	197.7	197.5	197.2	198.7	200.5	198.4	196.0	197.2	10- 20	58.22	78.80	13.6,13.6
30	175.4	174.7	174.1	176.5	179.5	176.7	164.9	174.8	20- 30	86.35	165.1	28.4,28.4
40	147.8	147.1	146.3	149.1	152.2	149.4	127.6	147.3	30- 40	101.2	266.4	45.8,45.8
50	117.0	116.7	116.2	118.9	122.7	119.1	93.70	117.0	40- 50	102.1	368.5	63.4,63.4
60	84.58	84.89	84.97	87.26	89.53	87.62	66.07	85.32	50- 60	90.60	459.1	79,79
70	51.29	52.81	53.69	55.14	56.65	55.23	41.74	52.95	60- 70	68.66	527.8	90.8,90.8
80	20.22	22.78	24.63	24.70	24.29	24.97	22.39	23.05	70- 80	40.21	568.0	97.8,97.8
90	1.122	2.613	4.318	3.032	2.296	4.658	5.717	4.164	80- 90	13.06	581.1	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): 318.15 lm

%lum = 54.8%

%lamp = 54.8%

Conical surface Flux(120deg): 459.11 lm

%lum = 79.0%

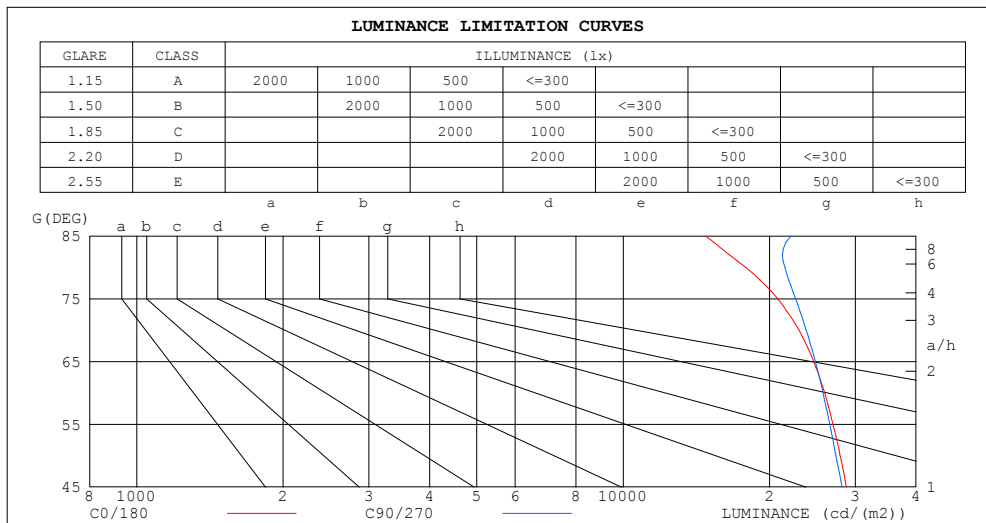
%lamp = 79.0%

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:ZR  
 Test Date:2021-08-30

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:0.1978A P:9.494W PF:1.000 Freq:50.00Hz Lamp Flux:581.058x1 lm		
NAME: M20-T41303-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:305*21.6	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	14758	22120
80	17855	21492
75	20786	22623
70	22993	23787
65	24662	24843
60	25938	25752
55	27013	26581
50	27915	27384
45	28770	28160

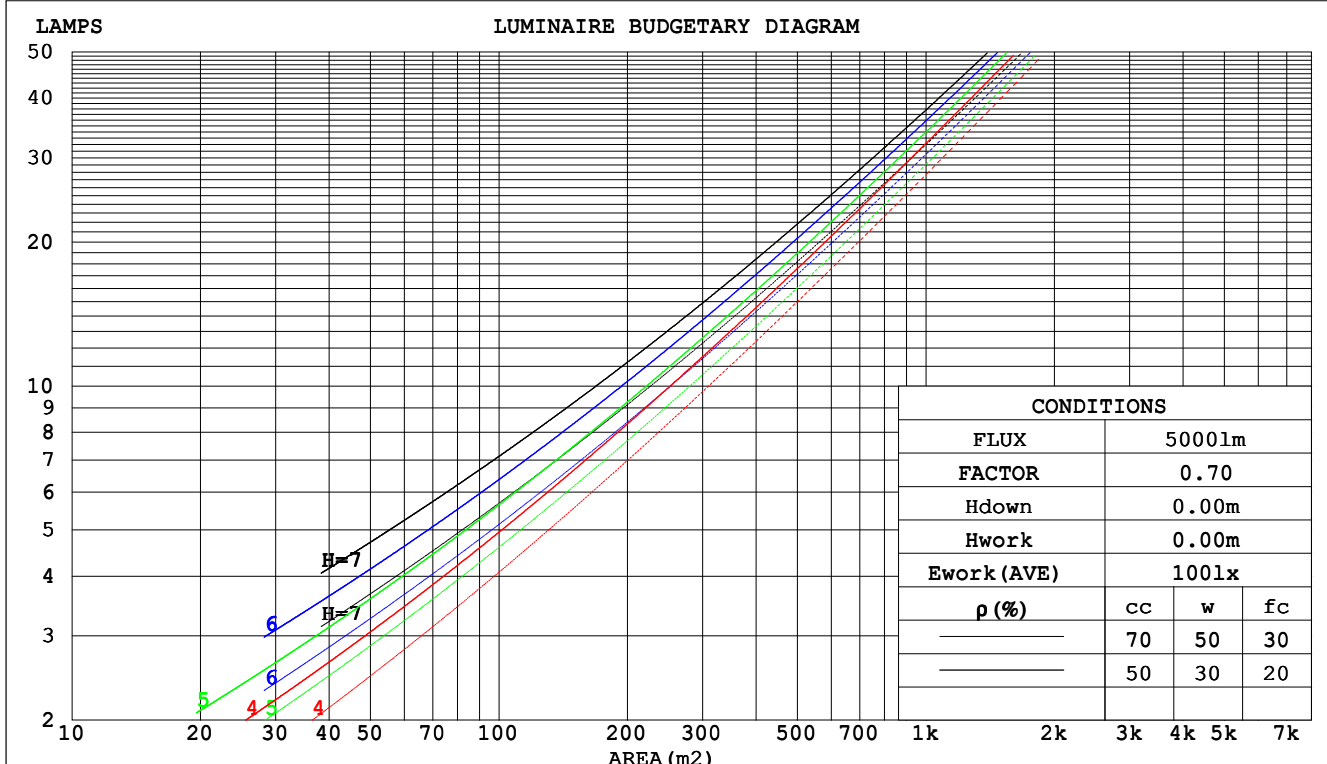
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-30

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:0.1978A P:9.494W PF:1.000 Freq:50.00Hz Lamp Flux:581.058x1 lm		
NAME: M20-T41303-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:305*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	.00
1.0	1.04	.00	.96	1.02	.98	.94	.97	.94	.91	.93	.91	.88	.90	.88	.86	.84
2.0	.91	.84	.78	.89	.82	.77	.85	.80	.75	.82	.77	.74	.79	.75	.72	.70
3.0	.80	.71	.65	.78	.70	.64	.75	.69	.63	.72	.67	.62	.70	.65	.61	.59
4.0	.71	.62	.55	.69	.61	.55	.67	.60	.54	.64	.58	.53	.62	.57	.53	.50
5.0	.63	.54	.48	.62	.54	.47	.60	.53	.47	.58	.51	.46	.56	.50	.46	.44
6.0	.57	.48	.42	.56	.48	.41	.54	.47	.41	.53	.46	.41	.51	.45	.40	.38
7.0	.52	.43	.37	.51	.43	.37	.49	.42	.36	.48	.41	.36	.47	.41	.36	.34
8.0	.47	.39	.33	.47	.38	.33	.45	.38	.33	.44	.37	.32	.43	.37	.32	.30
9.0	.43	.35	.30	.43	.35	.30	.42	.34	.29	.41	.34	.29	.40	.34	.29	.27
10.0	.40	.32	.27	.40	.32	.27	.39	.32	.27	.38	.31	.27	.37	.31	.27	.25



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-30

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:0.1978A P:9.494W PF:1.000 Freq:50.00Hz Lamp Flux:581.058x1 lm		
NAME: M20-T41303-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:305*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	.310	.177	.056	.303	.173	.055	.290	.166	.053	.278	.160	.051	.267	.155	.050		
2.0	.290	.159	.049	.284	.157	.048	.272	.152	.047	.262	.147	.046	.252	.142	.045		
3.0	.268	.143	.043	.263	.141	.042	.252	.137	.042	.243	.133	.041	.234	.130	.040		
4.0	.247	.129	.038	.242	.127	.037	.233	.124	.037	.225	.121	.036	.217	.118	.036		
5.0	.229	.116	.034	.224	.115	.034	.216	.113	.033	.209	.110	.033	.202	.108	.032		
6.0	.212	.106	.030	.208	.105	.030	.201	.103	.030	.194	.101	.030	.188	.099	.029		
7.0	.197	.098	.028	.194	.097	.028	.187	.095	.027	.181	.093	.027	.176	.091	.027		
8.0	.184	.090	.025	.181	.089	.025	.176	.088	.025	.170	.086	.025	.165	.085	.025		
9.0	.173	.084	.023	.170	.083	.023	.165	.082	.023	.160	.080	.023	.155	.079	.023		
10.0	.162	.078	.022	.160	.077	.022	.155	.076	.021	.151	.075	.021	.147	.074	.021		

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	.180	.156	.134	.154	.134	.116	.106	.092	.080	.061	.053	.046	.019	.017	.015	
2.0	.172	.132	.098	.147	.114	.085	.101	.079	.059	.058	.046	.035	.019	.015	.011	
3.0	.164	.114	.075	.141	.099	.065	.097	.068	.045	.056	.040	.027	.018	.013	.009	
4.0	.156	.101	.059	.134	.087	.051	.092	.061	.036	.053	.036	.021	.017	.012	.007	
5.0	.149	.091	.047	.128	.078	.041	.088	.055	.029	.051	.032	.017	.016	.010	.006	
6.0	.142	.082	.039	.122	.071	.034	.084	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.135	.075	.033	.116	.065	.029	.080	.046	.021	.047	.027	.012	.015	.009	.004	
8.0	.128	.069	.029	.111	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.122	.064	.025	.105	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.060	.023	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-30

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:0.1978A P:9.494W PF:1.000 Freq:50.00Hz Lamp Flux:581.058x1 lm											
NAME: M20-T41303-9G40-120D						TYPE:		WEIGHT:			
SPEC.:						DIM.:		SERIAL No.:			
MFR.:						SUR.:305*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	26.1	27.6	26.4	27.8	28.0	26.0	27.5	26.3	27.7	27.9	
	27.6	28.9	27.8	29.2	29.4	27.6	29.0	27.9	29.2	29.4	
	28.1	29.4	28.4	29.7	29.9	28.2	29.5	28.5	29.8	30.0	
	28.5	29.7	28.8	30.0	30.3	28.7	29.9	29.0	30.2	30.5	
	28.6	29.8	28.9	30.1	30.4	28.9	30.1	29.2	30.4	30.6	
	28.6	29.8	29.0	30.1	30.4	29.0	30.2	29.4	30.5	30.8	
4H	2H	26.7	28.0	27.0	28.3	28.5	26.6	28.0	26.9	28.2	28.5
	3H	28.3	29.5	28.7	29.8	30.1	28.3	29.5	28.7	29.8	30.1
	4H	29.0	30.1	29.4	30.4	30.7	29.1	30.2	29.5	30.5	30.8
	6H	29.5	30.4	29.9	30.8	31.2	29.7	30.7	30.1	31.0	31.4
	8H	29.7	30.5	30.1	30.9	31.3	30.0	30.9	30.4	31.2	31.6
	12H	29.8	30.6	30.2	31.0	31.4	30.2	31.0	30.6	31.4	31.8
8H	4H	29.3	30.2	29.7	30.5	30.9	29.4	30.2	29.8	30.6	31.0
	6H	29.9	30.6	30.4	31.1	31.5	30.1	30.9	30.6	31.3	31.7
	8H	30.2	30.8	30.6	31.2	31.7	30.5	31.1	30.9	31.6	32.0
	12H	30.3	30.9	30.8	31.3	31.8	30.8	31.3	31.3	31.8	32.3
12H	4H	29.3	30.1	29.7	30.5	30.9	29.4	30.2	29.8	30.6	31.0
	6H	30.0	30.6	30.4	31.1	31.5	30.2	30.8	30.7	31.3	31.7
	8H	30.3	30.8	30.7	31.3	31.7	30.6	31.1	31.1	31.6	32.1
Variations with the observer position at spacings:											
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					

CIE Pub.117, 581.1 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -1.9)

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-30

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:0.1978A P:9.494W PF:1.000 Freq:50.00Hz Lamp Flux:581.058x1 lm		
NAME: M20-T41303-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:305*21.6	Shielding Angle:

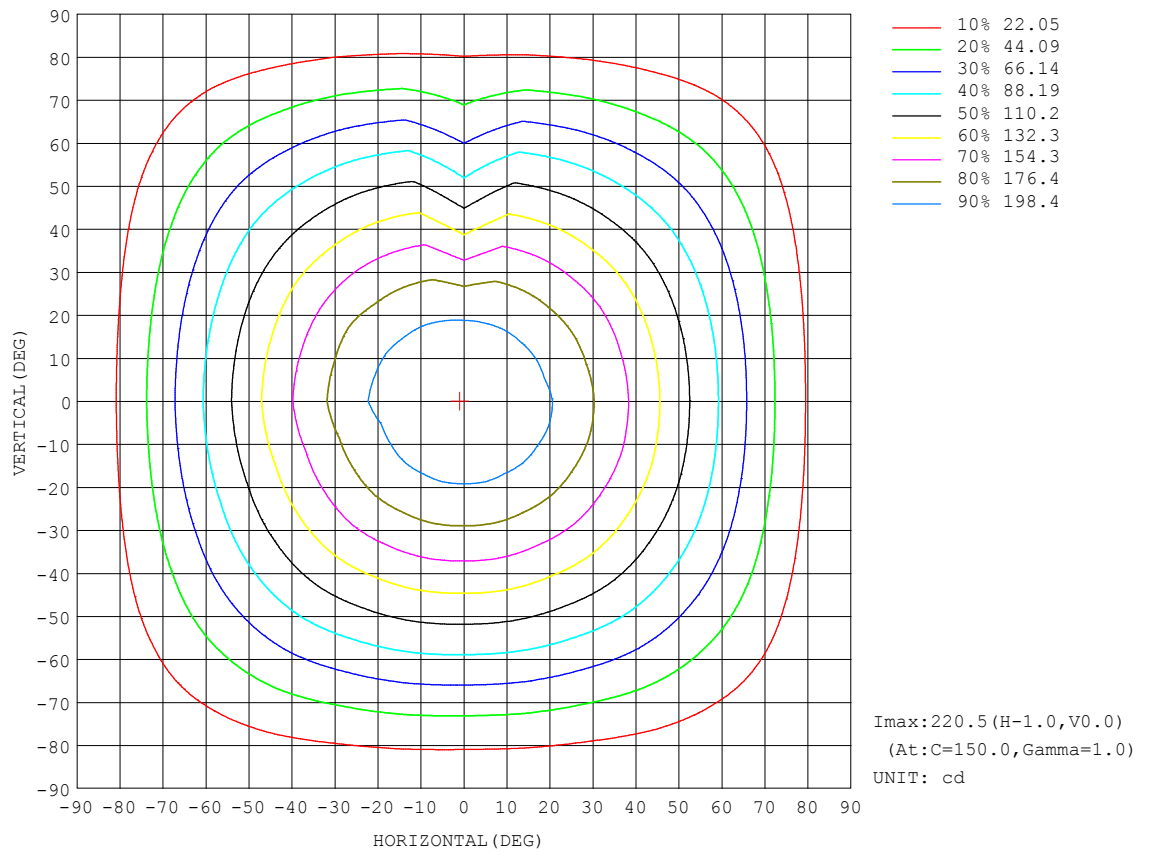
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT)    k(RI) × RCR = 5									
k = 0.60	58	47	40	58	47	40	56	46	40	33
0.80	68	57	49	67	56	49	65	56	49	42
1.00	77	66	58	75	65	58	73	66	57	50
1.25	84	73	66	82	72	66	79	71	65	58
1.50	88	79	72	87	78	71	84	76	70	63
2.00	95	87	80	93	85	79	90	83	78	70
2.50	99	91	85	97	90	84	93	87	82	74
3.00	102	95	90	100	94	89	96	91	87	78
4.00	106	101	96	104	99	95	100	95	92	83
5.00	109	104	100	106	102	98	102	98	95	86
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNM = 1.25										

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-30

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:0.1978A P:9.494W PF:1.000 Freq:50.00Hz Lamp Flux:581.058x1 lm		
NAME: M20-T41303-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:305*21.6	Shielding Angle:



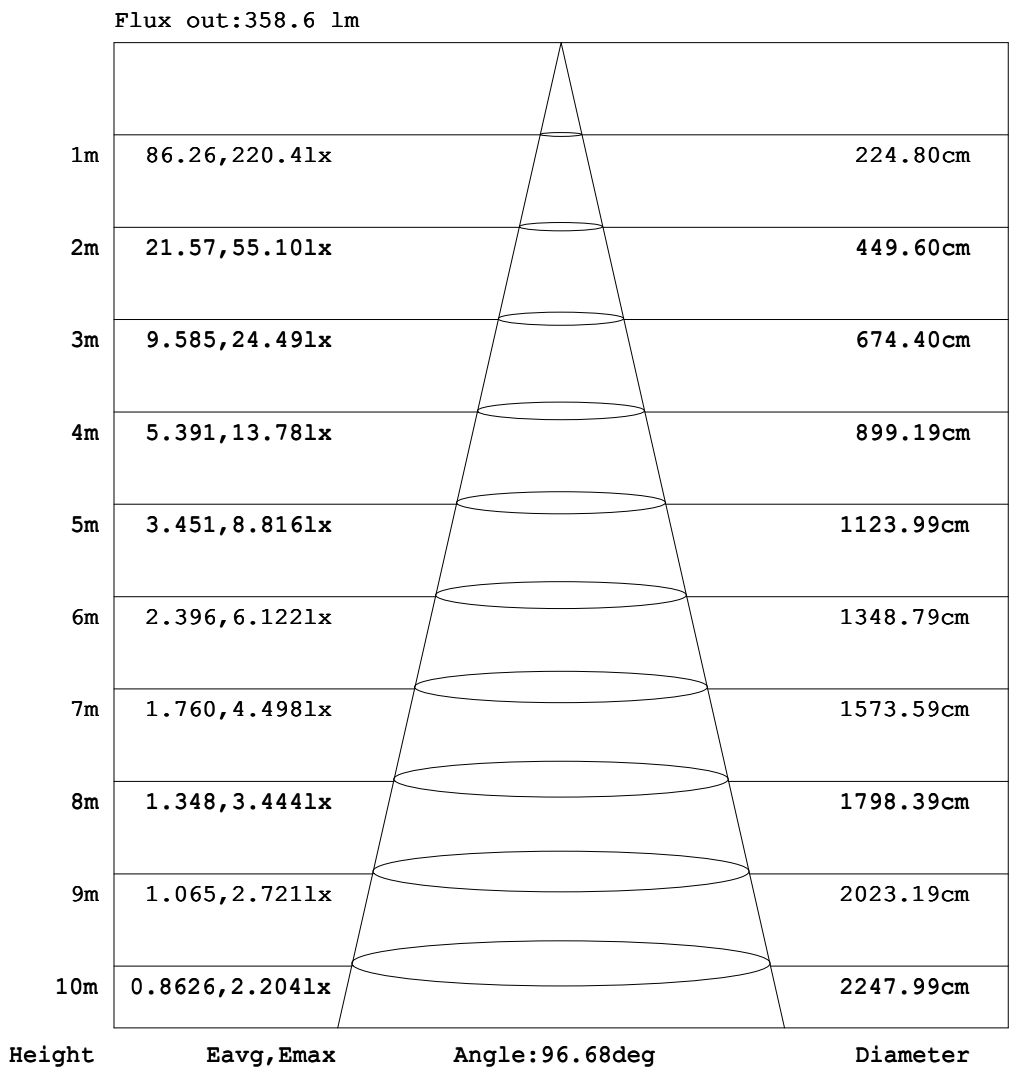
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-30

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:0.1978A P:9.494W PF:1.000 Freq:50.00Hz Lamp Flux:581.058x1 lm		
NAME: M20-T41303-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:305*21.6	Shielding Angle:



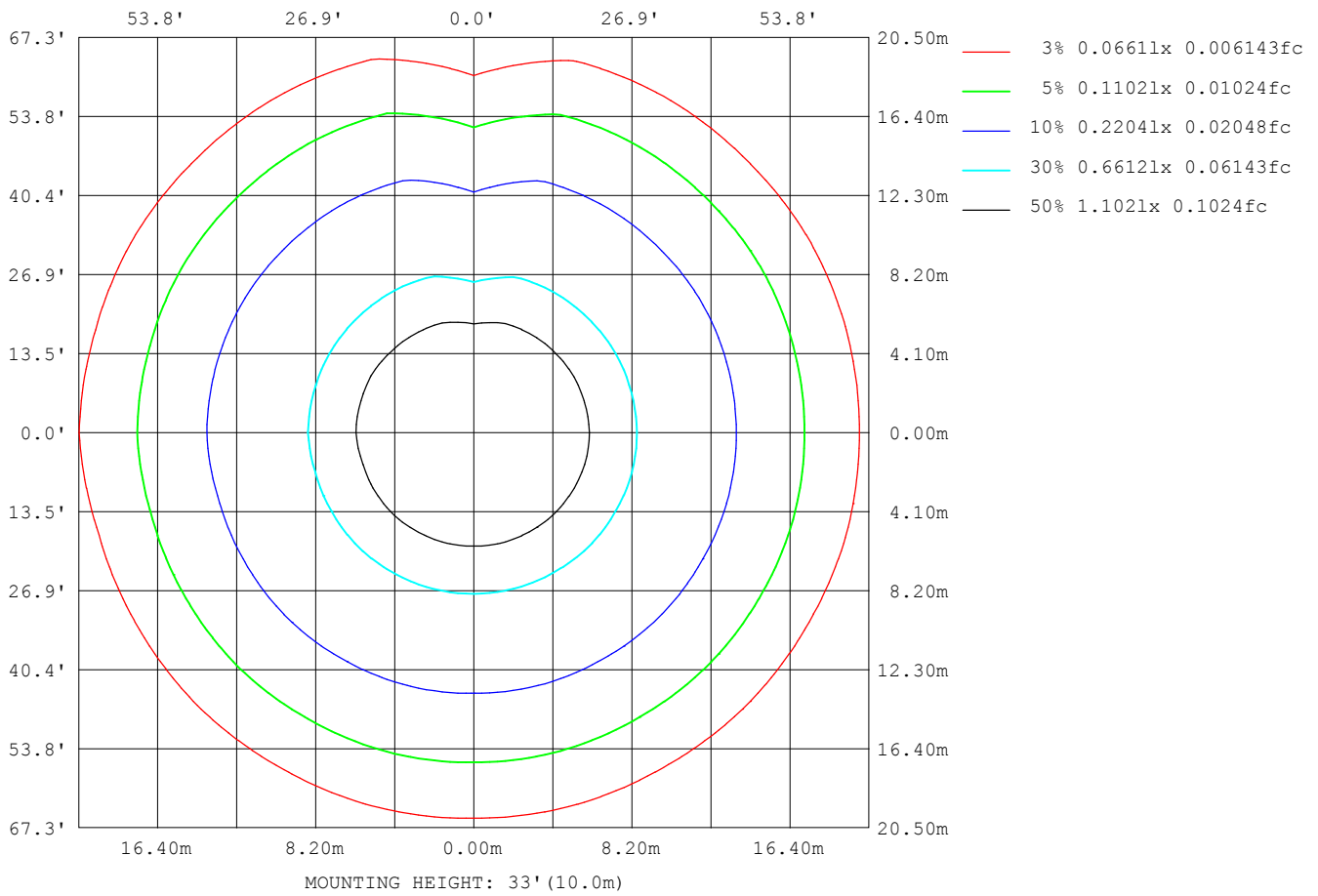
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: ZR  
Test Date: 2021-08-30

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:0.1978A P:9.494W PF:1.000 Freq:50.00Hz Lamp Flux:581.058x1 lm		
NAME: M20-T41303-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:305*21.6	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-30

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:0.1978A P:9.494W PF:1.000 Freq:50.00Hz Lamp Flux:581.058x1 lm		
NAME: M20-T41303-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:305*21.6	Shielding Angle:

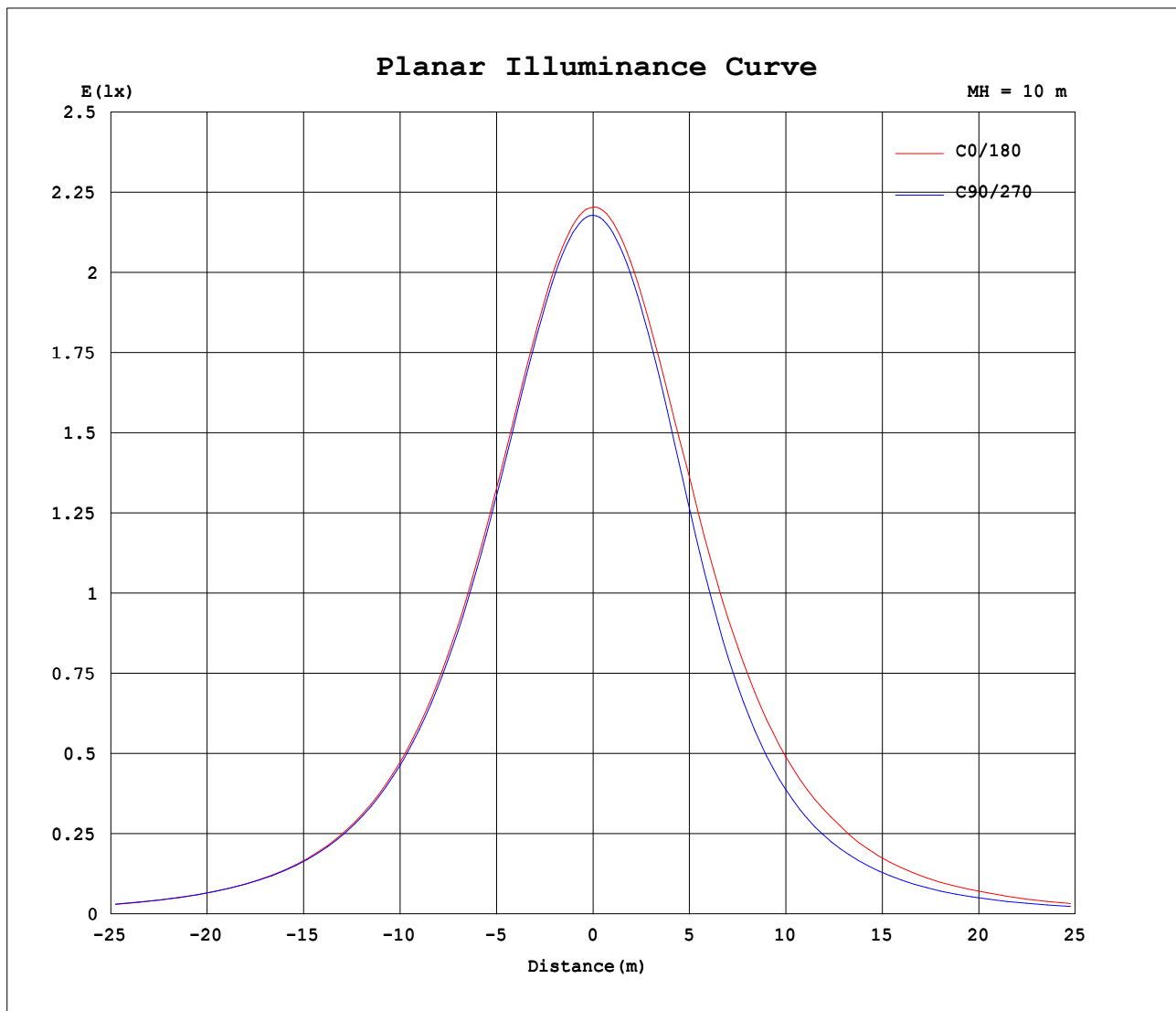
AvgL	cd/m2
L_0~180 (65) av	25344
L_0~180 (75) av	21967
L_0~180 (85) av	17291
L_90~270 (65) av	22004
L_90~270 (75) av	20679
L_90~270 (85) av	22428
L_45 (65) av	25192
L_45 (75) av	22501
L_45 (85) av	20564

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:ZR  
 Test Date:2021-08-30

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: 2021-08-30

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:

```