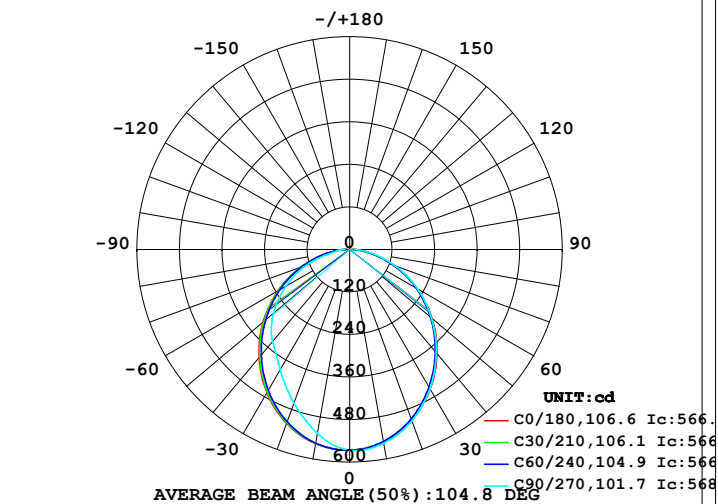


## LUMINAIRE PHOTOMETRIC TEST REPORT

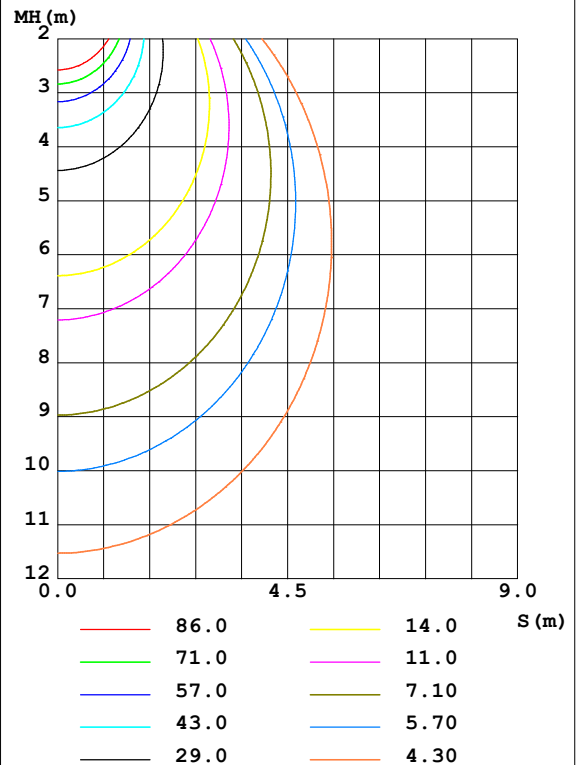
Test:U:48.00V I:0.4960A P:23.81W PF:1.000 Freq:50.00Hz Lamp Flux:1508.06x1 lm		
NAME: M20-T41309-24G30-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:900*21.6	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 63.34 lm/W
MODEL	3000K CRI90	I <sub>max</sub> (cd)	568.0	S/MH(C0/180)	1.23	
NOMINAL POWER(W)	24	LOR(%)	100.0	S/MH(C90/270)	1.05	
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	1508.1	η UP,DN(C0-180)	0.0,49.6	
NOMINAL FLUX(lm)	1508.06	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.4	
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	551.2	550.2	555.3	552.4	556.3	554.9	526.7	552.1	0- 10	53.36	53.36	3.54,3.54
20	512.1	510.1	514.4	514.1	522.1	517.9	461.1	513.1	10- 20	150.7	204.0	13.5,13.5
30	454.3	450.3	453.3	456.3	467.0	461.2	392.2	454.8	20- 30	223.2	427.2	28.3,28.3
40	383.2	378.8	380.2	385.3	398.1	390.9	338.6	383.5	30- 40	262.2	689.4	45.7,45.7
50	303.4	298.5	301.4	305.5	319.4	312.4	281.0	304.7	40- 50	266.1	955.5	63.4,63.4
60	219.5	216.7	219.9	224.0	233.7	230.2	207.9	222.8	50- 60	236.1	1192	79,79
70	132.6	134.2	137.3	141.1	147.0	145.3	129.5	138.1	60- 70	179.1	1371	90.9,90.9
80	52.53	56.92	61.91	62.53	63.94	66.20	45.66	60.38	70- 80	103.8	1474	97.8,97.8
90	4.038	8.984	13.46	8.747	6.999	10.57	14.08	10.49	80- 90	33.64	1508	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): 824.17 lm

%lum = 54.7%

%lamp = 54.7%

Conical surface Flux(120deg): 1191.6 lm

%lum = 79.0%

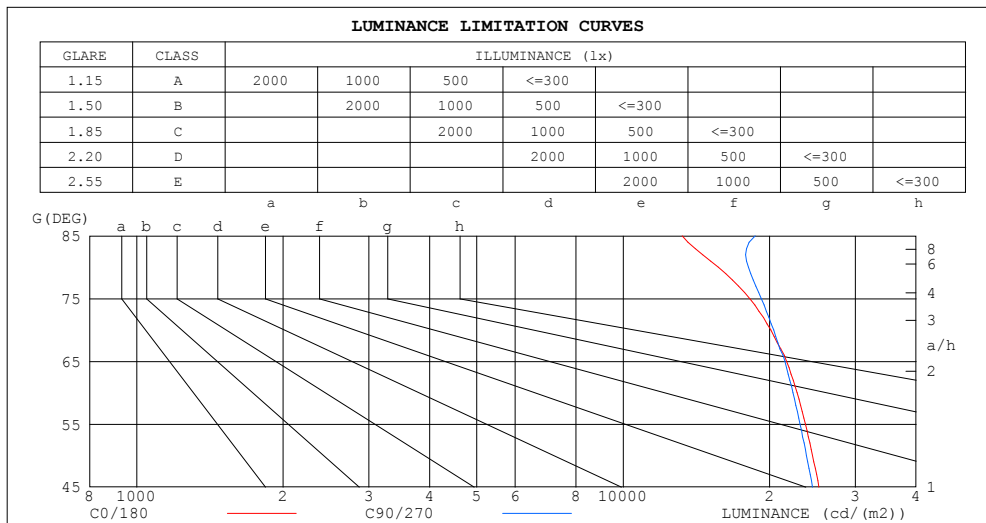
%lamp = 79.0%

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:0.4960A P:23.81W PF:1.000 Freq:50.00Hz Lamp Flux:1508.06x1 lm		
NAME: M20-T41309-24G30-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:900*21.6	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	13223	18679
80	15702	18107
75	18218	19231
70	20115	20382
65	21680	21499
60	22785	22339
55	23711	23092
50	24501	23817
45	25257	24506

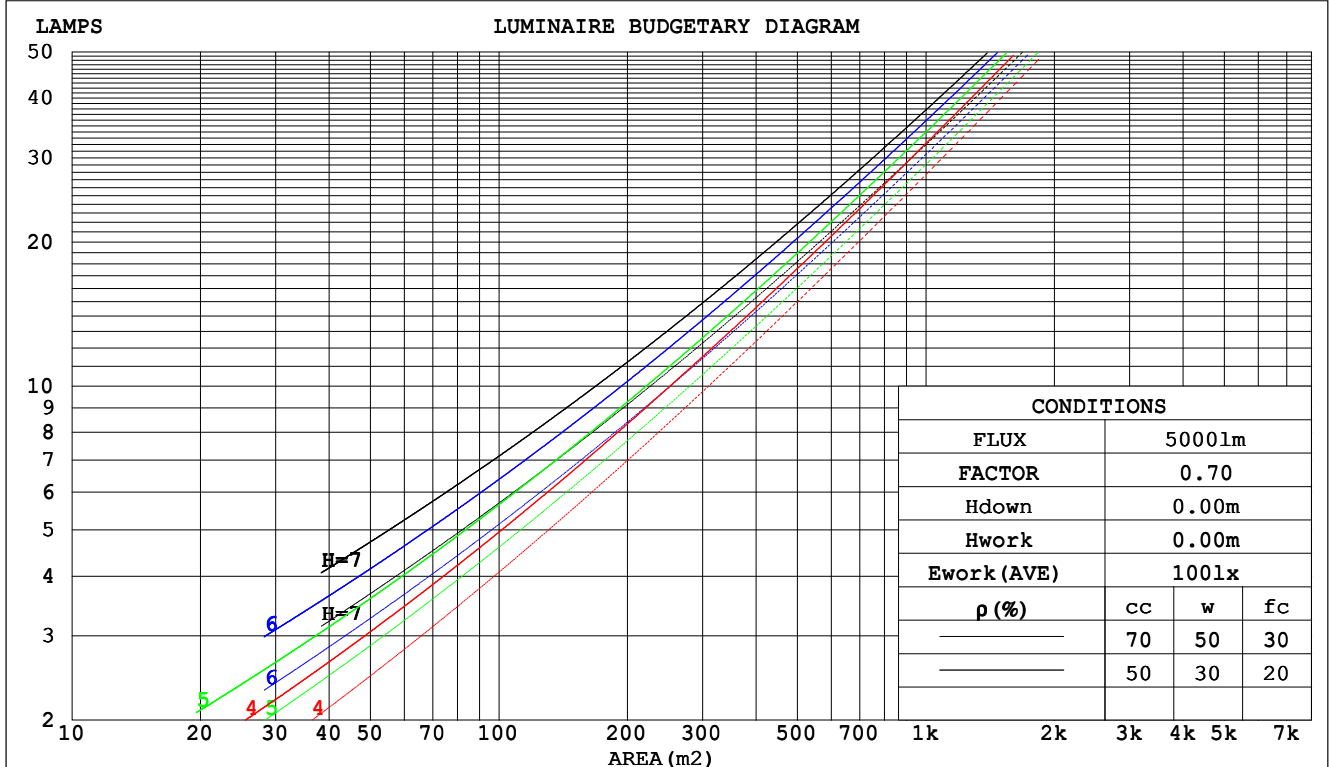
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-30

$\gamma$  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:0.4960A P:23.81W PF:1.000 Freq:50.00Hz Lamp Flux:1508.06x1 lm		
NAME: M20-T41309-24G30-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:900*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	1.04	.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	.52	.47	.58	.51	.46	.56	.50	.46	.44
6.0	.57	.48	.42	.56	.48	.41	.54	.47	.41	.52	.46	.41	.51	.45	.40	.38
7.0	.52	.43	.37	.51	.43	.37	.49	.42	.36	.48	.41	.36	.47	.40	.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	.26	.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:0.4960A P:23.81W PF:1.000 Freq:50.00Hz Lamp Flux:1508.06x1 lm		
NAME: M20-T41309-24G30-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:900*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 Coeffcients(WEC)										
0.0																	
1.0	.310	.176	.056	.303	.173	.055	.290	.166	.053	.278	.160	.051	.266	.154	.050		
2.0	.290	.159	.049	.284	.157	.048	.273	.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	.243	.127	.038	.233	.124	.037	.225	.121	.036	.217	.118	.036		
5.0	.229	.117	.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	.188	.095	.027	.182	.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	.163	.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	.045	.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:0.4960A P:23.81W PF:1.000 Freq:50.00Hz Lamp Flux:1508.06x1 lm											
NAME: M20-T41309-24G30-120D						TYPE:		WEIGHT:			
SPEC.:						DIM.:		SERIAL No.:			
MFR.:						SUR.:900*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	22.3	23.8	22.6	24.0	24.2	22.2	23.7	22.4	23.9	24.1	
	3H	23.7	25.1	24.0	25.4	25.6	23.7	25.1	24.0	25.3	25.5
	4H	24.3	25.6	24.6	25.9	26.1	24.3	25.6	24.6	25.9	26.1
	6H	24.7	25.9	25.0	26.2	26.5	24.7	26.0	25.1	26.3	26.5
	8H	24.8	26.0	25.1	26.3	26.6	24.9	26.1	25.3	26.4	26.7
	12H	24.8	26.0	25.2	26.3	26.6	25.0	26.2	25.4	26.5	26.8
4H	2H	22.9	24.2	23.2	24.4	24.7	22.8	24.1	23.1	24.3	24.6
	3H	24.5	25.7	24.8	26.0	26.3	24.4	25.6	24.8	25.9	26.2
	4H	25.2	26.2	25.5	26.6	26.9	25.2	26.2	25.6	26.6	26.9
	6H	25.7	26.6	26.1	27.0	27.3	25.8	26.7	26.2	27.1	27.4
	8H	25.8	26.7	26.2	27.1	27.5	26.0	26.9	26.4	27.3	27.6
	12H	25.9	26.7	26.4	27.1	27.5	26.2	27.0	26.6	27.4	27.8
8H	4H	25.4	26.3	25.8	26.7	27.1	25.4	26.3	25.8	26.7	27.1
	6H	26.1	26.8	26.5	27.2	27.6	26.2	26.9	26.6	27.3	27.8
	8H	26.3	27.0	26.8	27.4	27.8	26.5	27.2	27.0	27.6	28.0
	12H	26.5	27.1	27.0	27.5	28.0	26.8	27.4	27.3	27.8	28.3
12H	4H	25.4	26.3	25.9	26.6	27.0	25.4	26.3	25.9	26.6	27.0
	6H	26.1	26.8	26.6	27.2	27.7	26.2	26.9	26.7	27.3	27.8
	8H	26.4	27.0	26.9	27.4	27.9	26.6	27.2	27.1	27.6	28.1
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 / - 0.2					+ 0.2 / - 0.2					

CIE Pub.117, 1508 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.4)

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:0.4960A P:23.81W PF:1.000 Freq:50.00Hz Lamp Flux:1508.06x1 lm		
NAME: M20-T41309-24G30-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:900*21.6	Shielding Angle:

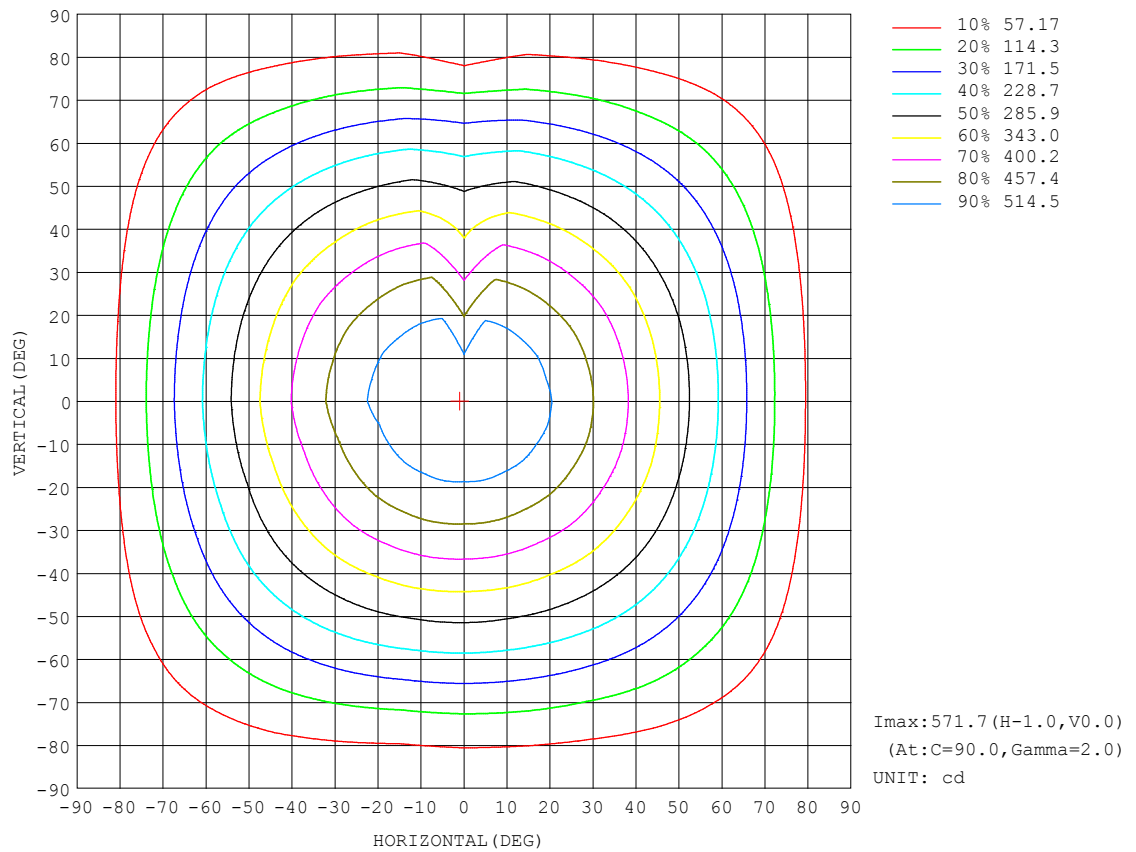
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	58	47	40	57	46	40	56	46	40	33
0.80	68	57	49	67	56	49	65	55	49	42
1.00	76	65	58	75	65	58	73	66	57	50
1.25	83	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					SHRNOM = 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:0.4960A P:23.81W PF:1.000 Freq:50.00Hz Lamp Flux:1508.06x1 lm		
NAME: M20-T41309-24G30-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:900*21.6	Shielding Angle:



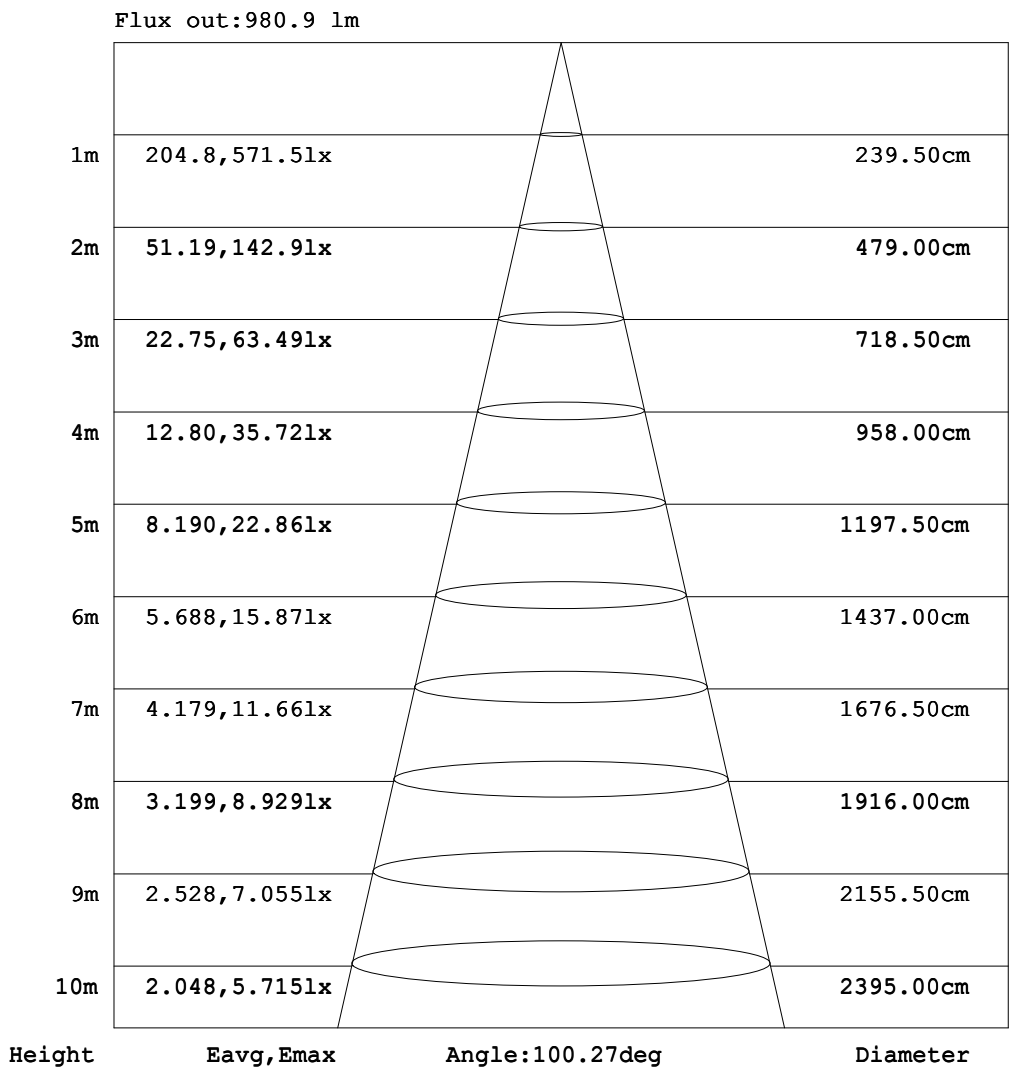
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: ZR  
Test Date: 2021-08-30

$\gamma$  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:0.4960A P:23.81W PF:1.000 Freq:50.00Hz Lamp Flux:1508.06x1 lm		
NAME: M20-T41309-24G30-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:900*21.6	Shielding Angle:



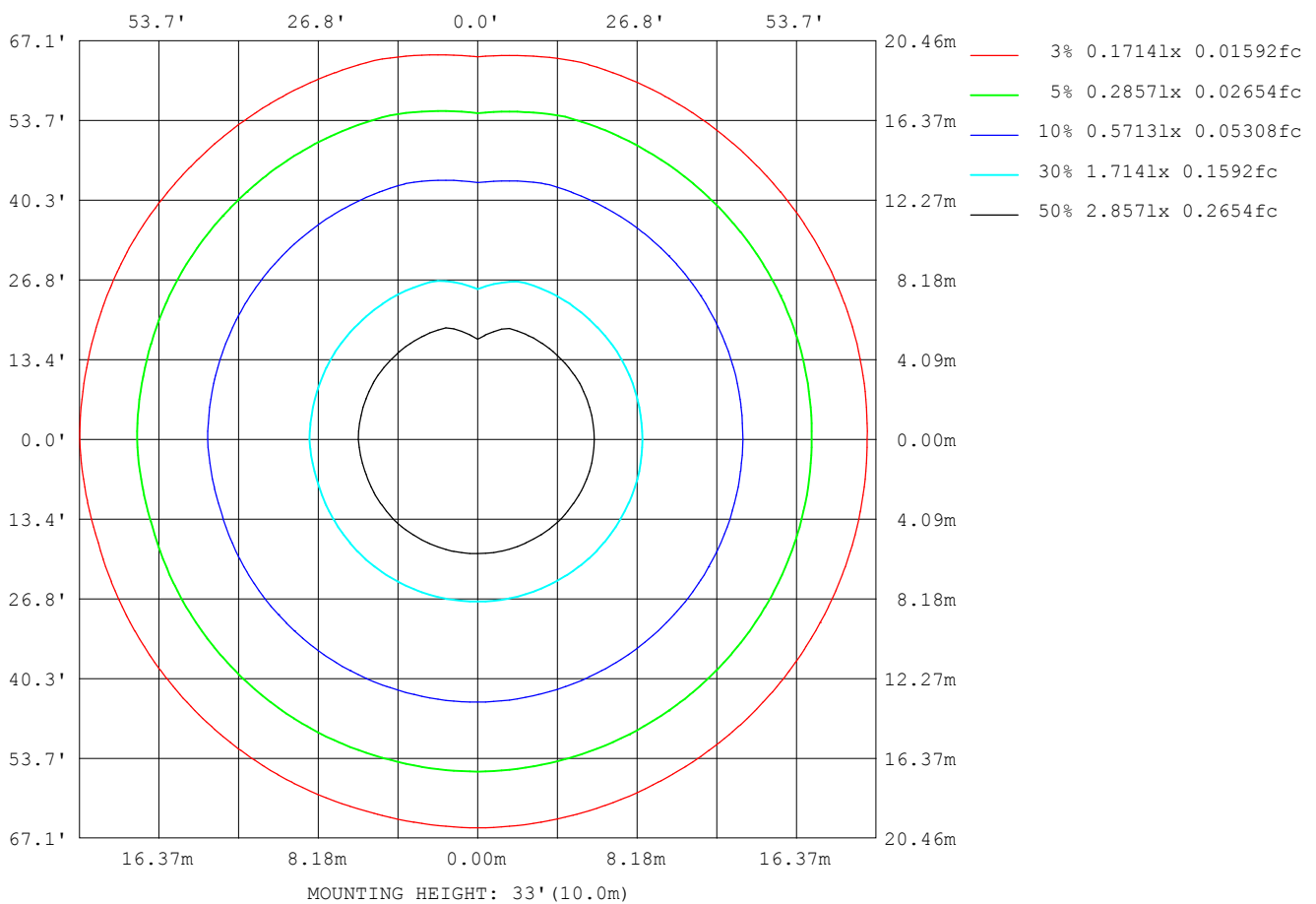
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:0.4960A P:23.81W PF:1.000 Freq:50.00Hz Lamp Flux:1508.06x1 lm		
NAME: M20-T41309-24G30-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:900*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:0.4960A P:23.81W PF:1.000 Freq:50.00Hz Lamp Flux:1508.06x1 lm		
NAME: M20-T41309-24G30-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:900*21.6	Shielding Angle:

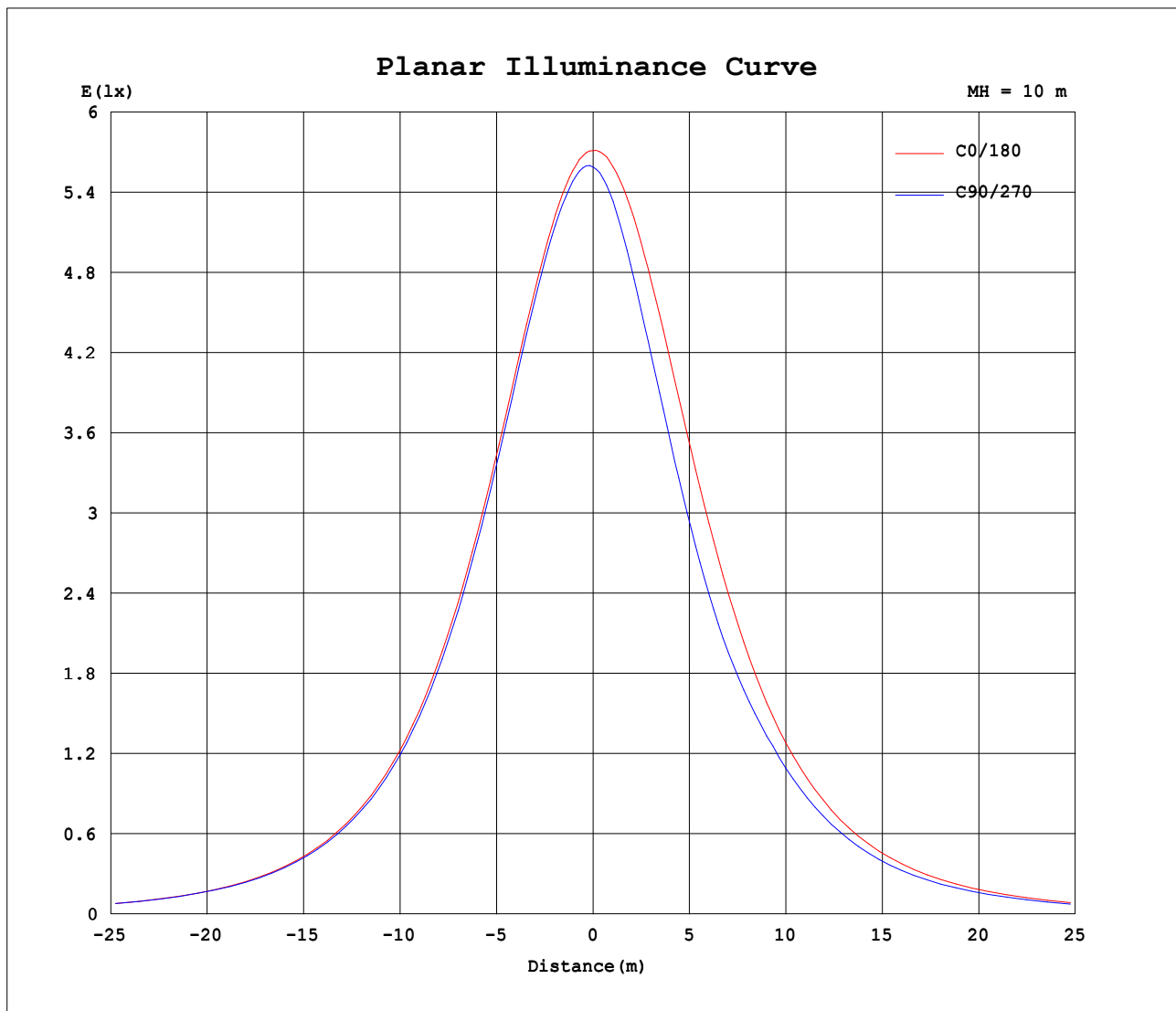
AvgL	cd/m2
L_0~180 (65) av	22349
L_0~180 (75) av	19382
L_0~180 (85) av	15593
L_90~270 (65) av	21265
L_90~270 (75) av	18086
L_90~270 (85) av	18371
L_45 (65) av	22123
L_45 (75) av	19703
L_45 (85) av	17606

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:

```