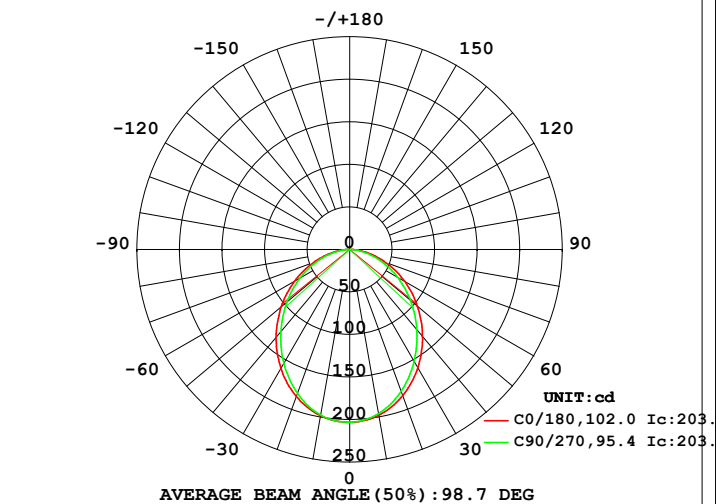


LUMINAIRE PHOTOMETRIC TEST REPORT

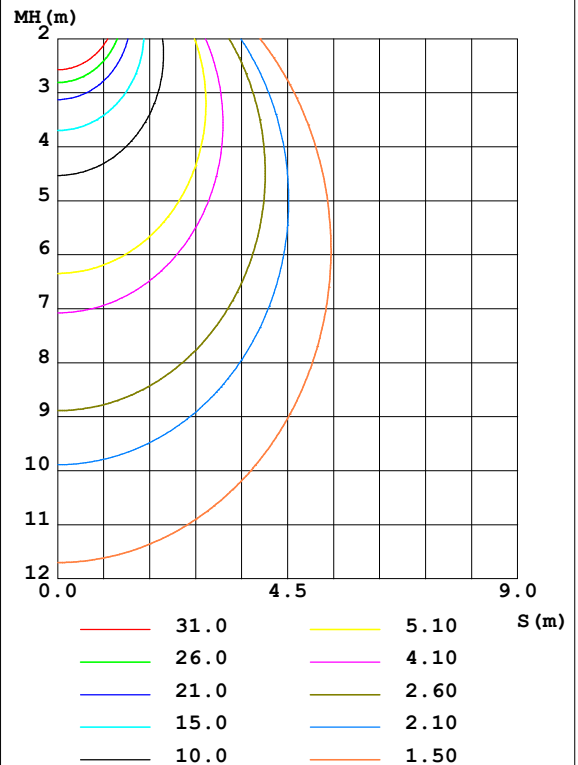
Test:U:48.00V I:0.2432A P:11.67W PF:1.000 Freq:50.00Hz Lamp Flux:499.445x1 lm					
NAME: M20-T42102-9G40-120D			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:219*22		Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 42.78 lm/W
MODEL	4000K CRI90	I _{max} (cd)	203.7	S/MH(C0/180)	1.19	
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	1.15	
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	499.44	η UP,DN(C0-180)	0.0,49.2	
NOMINAL FLUX(lm)	499.445	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.8	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25	
TEST VOLTAGE(V)	225.1	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: 22.5DEG
 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	197.8	195.1	195.9	198.1	198.4	200.0	197.7	196.9	0- 10	19.13	19.13	3.83,3.83
20	182.8	176.9	177.3	182.3	183.8	185.8	179.9	179.8	10- 20	53.62	72.75	14.6,14.6
30	160.3	152.0	151.7	158.6	161.7	162.7	154.8	155.4	20- 30	78.16	150.9	30.2,30.2
40	133.3	123.7	122.8	130.5	134.7	134.9	126.1	127.5	30- 40	89.74	240.6	48.2,48.2
50	104.0	94.31	93.32	100.8	105.1	105.1	96.40	97.99	40- 50	88.33	329.0	65.9,65.9
60	74.24	65.32	64.73	71.30	74.95	75.33	67.54	68.84	50- 60	75.94	404.9	81.1,81.1
70	45.20	37.73	37.86	43.01	45.46	46.41	40.06	40.72	60- 70	55.43	460.3	92.2,92.2
80	19.18	13.87	14.60	17.93	19.04	20.38	16.03	15.94	70- 80	30.76	491.1	98.3,98.3
90	0.7616	0.6943	0.6384	0.7315	1.497	1.678	1.393	1.431	80- 90	8.345	499.4	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): 285.73 lm

%lum = 57.2%

%lamp = 57.2%

Conical surface Flux(120deg): 404.9 lm

%lum = 81.1%

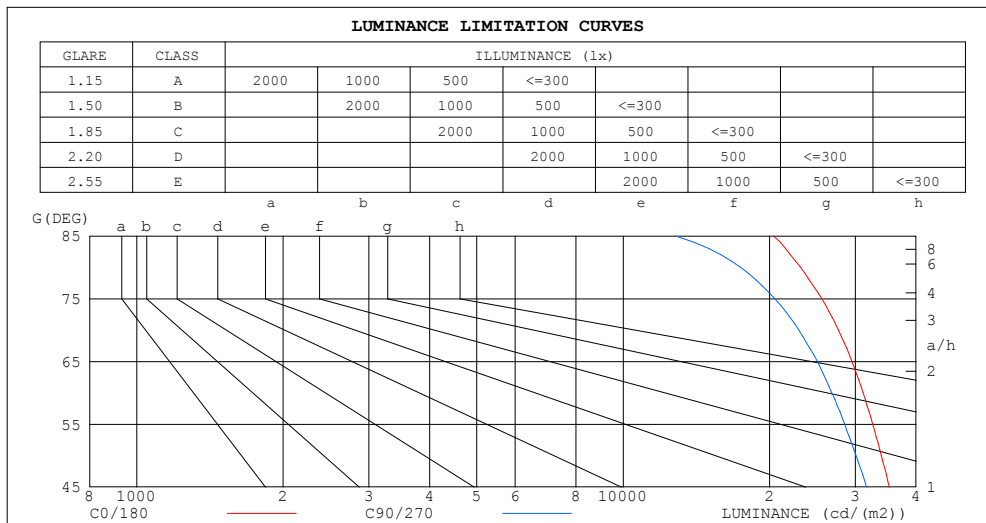
%lamp = 81.1%

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 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:0.2432A P:11.67W PF:1.000 Freq:50.00Hz Lamp Flux:499.445x1 lm		
NAME: M20-T42102-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	20379	12800
80	23167	17431
75	25620	20491
70	27711	22954
65	29538	25046
60	31139	26842
55	32586	28548
50	33934	30101
45	35227	31646

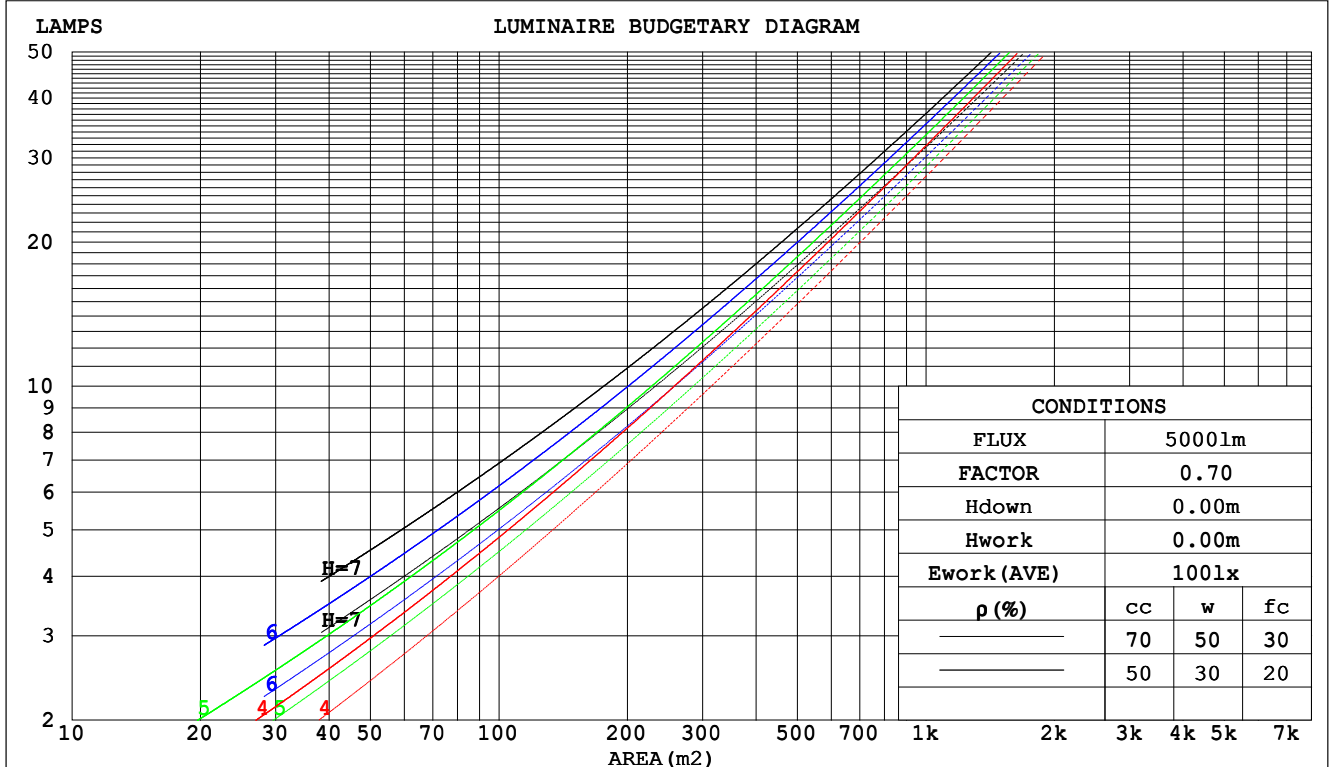
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

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:0.2432A P:11.67W PF:1.000 Freq:50.00Hz Lamp Flux:499.445x1 lm		
NAME: M20-T42102-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	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	1.05	1.00	.97	1.02	.98	.95	.98	.95	.92	.94	.92	.89	.91	.89	.87	.85
2.0	.92	.85	.79	.90	.84	.78	.86	.81	.77	.83	.79	.75	.80	.76	.73	.71
3.0	.81	.73	.67	.79	.72	.66	.76	.70	.65	.74	.68	.64	.71	.66	.63	.60
4.0	.72	.63	.57	.71	.63	.56	.68	.61	.56	.66	.60	.55	.64	.58	.54	.52
5.0	.64	.56	.49	.63	.55	.49	.61	.54	.48	.59	.53	.48	.57	.52	.47	.45
6.0	.58	.49	.43	.57	.49	.43	.55	.48	.43	.54	.47	.42	.52	.46	.42	.40
7.0	.53	.44	.38	.52	.44	.38	.51	.43	.38	.49	.43	.38	.48	.42	.37	.35
8.0	.48	.40	.34	.48	.40	.34	.46	.39	.34	.45	.39	.34	.44	.38	.34	.32
9.0	.45	.36	.31	.44	.36	.31	.43	.36	.31	.42	.35	.31	.41	.35	.30	.29
10.0	.41	.33	.28	.41	.33	.28	.40	.33	.28	.39	.32	.28	.38	.32	.28	.26



C Range: 0 - 360DEG
C Interval: 22.5DEG
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:0.2432A P:11.67W PF:1.000 Freq:50.00Hz Lamp Flux:499.445x1 lm		
NAME: M20-T42102-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	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	.297	.169	.054	.290	.166	.053	.277	.159	.051	.265	.153	.049	.254	.147	.047		
2.0	.281	.154	.047	.275	.151	.047	.263	.146	.045	.252	.142	.044	.242	.137	.043		
3.0	.261	.139	.042	.255	.137	.041	.245	.133	.040	.236	.129	.040	.227	.126	.039		
4.0	.241	.125	.037	.237	.124	.037	.228	.121	.036	.219	.118	.035	.211	.115	.035		
5.0	.224	.114	.033	.219	.113	.033	.211	.110	.032	.204	.108	.032	.197	.105	.032		
6.0	.208	.104	.030	.204	.103	.030	.197	.101	.029	.190	.099	.029	.184	.097	.029		
7.0	.194	.096	.027	.191	.095	.027	.184	.093	.027	.178	.091	.027	.173	.090	.026		
8.0	.181	.089	.025	.178	.088	.025	.173	.086	.025	.167	.085	.024	.162	.083	.024		
9.0	.170	.082	.023	.168	.082	.023	.163	.080	.023	.158	.079	.023	.153	.078	.022		
10.0	.160	.077	.021	.158	.076	.021	.153	.075	.021	.149	.074	.021	.145	.073	.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	.179	.156	.135	.154	.134	.116	.105	.092	.081	.060	.053	.047	.019	.017	.015	
2.0	.171	.132	.099	.146	.114	.086	.100	.079	.060	.058	.046	.035	.019	.015	.011	
3.0	.163	.114	.076	.139	.099	.066	.096	.068	.046	.055	.040	.027	.018	.013	.009	
4.0	.155	.101	.059	.133	.087	.052	.091	.061	.036	.053	.036	.022	.017	.012	.007	
5.0	.147	.090	.048	.127	.078	.042	.087	.055	.030	.051	.032	.018	.016	.010	.006	
6.0	.140	.082	.040	.121	.071	.035	.083	.050	.025	.048	.029	.015	.016	.010	.005	
7.0	.134	.075	.034	.115	.065	.030	.079	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.127	.069	.029	.110	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.121	.064	.026	.104	.056	.022	.072	.039	.016	.042	.023	.009	.014	.008	.003	
10.0	.116	.060	.023	.100	.052	.020	.069	.037	.014	.040	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 22.5DEG
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:0.2432A P:11.67W PF:1.000 Freq:50.00Hz Lamp Flux:499.445x1 lm											
NAME: M20-T42102-9G40-120D						TYPE:		WEIGHT:			
SPEC.:						DIM.:		SERIAL No.:			
MFR.:						SUR.:219*22		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	27.1	28.6	27.4	28.8	29.0	26.4	27.9	26.7	28.1	28.3	
	3H	28.6	29.9	28.9	30.2	30.4	27.7	29.0	27.9	29.2	29.5
	4H	29.1	30.4	29.4	30.7	30.9	28.1	29.4	28.4	29.7	29.9
	6H	29.6	30.8	29.9	31.0	31.3	28.4	29.7	28.8	29.9	30.2
	8H	29.7	30.9	30.0	31.1	31.4	28.5	29.7	28.9	30.0	30.3
	12H	29.8	30.9	30.1	31.2	31.5	28.6	29.7	28.9	30.0	30.3
4H	2H	27.5	28.8	27.9	29.1	29.3	27.0	28.3	27.3	28.5	28.8
	3H	29.2	30.3	29.5	30.6	30.9	28.4	29.5	28.7	29.8	30.1
	4H	29.9	30.9	30.2	31.2	31.6	28.9	30.0	29.3	30.3	30.6
	6H	30.4	31.3	30.8	31.7	32.0	29.3	30.3	29.7	30.6	31.0
	8H	30.6	31.5	31.0	31.8	32.2	29.5	30.3	29.9	30.7	31.1
	12H	30.7	31.5	31.2	31.9	32.3	29.5	30.3	30.0	30.7	31.1
8H	4H	30.0	30.9	30.4	31.2	31.6	29.2	30.0	29.6	30.4	30.8
	6H	30.7	31.4	31.1	31.8	32.2	29.7	30.4	30.1	30.8	31.2
	8H	30.9	31.6	31.4	32.0	32.4	29.8	30.5	30.3	30.9	31.3
	12H	31.1	31.7	31.6	32.1	32.6	29.9	30.5	30.4	30.9	31.4
12H	4H	30.0	30.8	30.4	31.2	31.6	29.2	30.0	29.6	30.4	30.8
	6H	30.7	31.3	31.1	31.7	32.2	29.7	30.4	30.2	30.8	31.2
	8H	31.0	31.5	31.5	32.0	32.4	29.9	30.5	30.4	30.9	31.4
Variations with the observer position at spacings:											
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2					
1.5H	+ 0.1 / - 0.2					+ 0.1 / - 0.2					
2.0H	+ 0.3 / - 0.4					+ 0.3 / - 0.3					

CIE Pub.117, 499.4 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -2.4)

C Range: 0 - 360DEG
C Interval: 22.5DEG
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:0.2432A P:11.67W PF:1.000 Freq:50.00Hz Lamp Flux:499.445x1 lm		
NAME: M20-T42102-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	Shielding Angle:

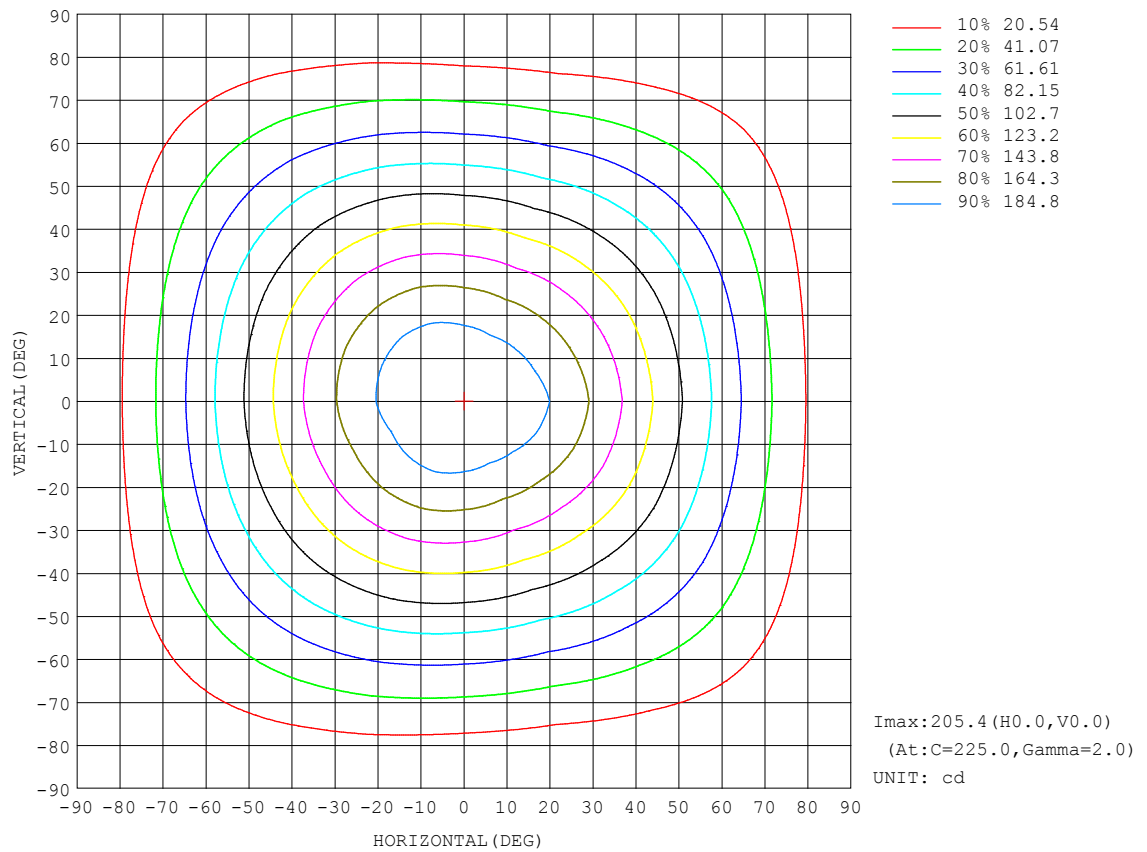
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	60	48	42	59	48	41	58	48	41	35
0.80	70	58	51	69	58	51	67	57	51	44
1.00	78	67	60	77	67	60	74	68	59	52
1.25	85	75	68	83	74	67	81	73	67	60
1.50	90	80	73	88	79	73	85	77	72	65
2.00	96	88	82	94	87	81	91	85	80	72
2.50	100	92	87	98	91	86	94	88	84	76
3.00	103	97	91	101	95	90	97	92	88	80
4.00	107	101	97	105	100	96	100	96	93	84
5.00	109	105	101	107	103	99	102	99	96	87
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 22.5DEG
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:0.2432A P:11.67W PF:1.000 Freq:50.00Hz Lamp Flux:499.445x1 lm		
NAME: M20-T42102-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	Shielding Angle:

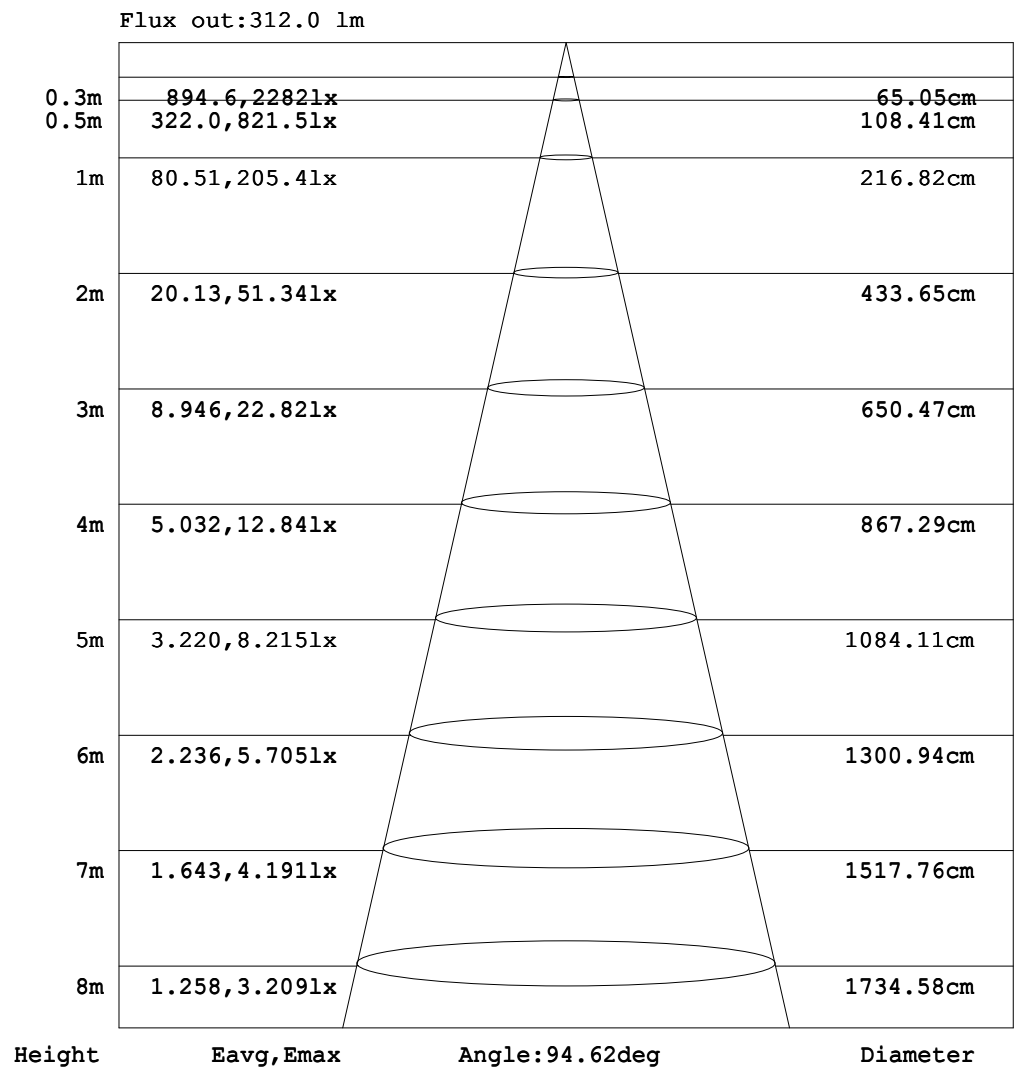


C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:ZR
 Test Date:2021-08-18

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:0.2432A P:11.67W PF:1.000 Freq:50.00Hz Lamp Flux:499.445x1 lm		
NAME: M20-T42102-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	Shielding Angle:



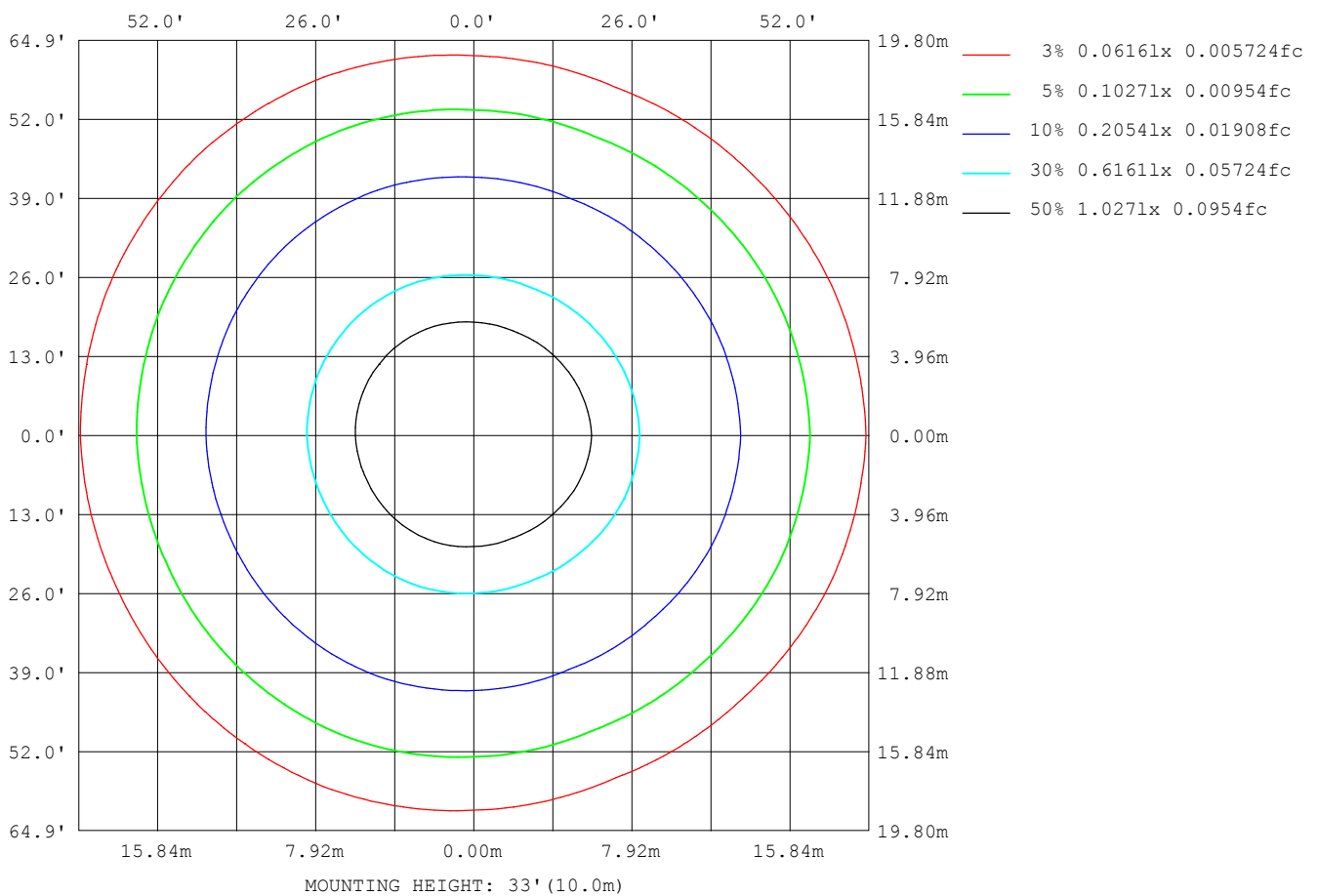
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
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:0.2432A P:11.67W PF:1.000 Freq:50.00Hz Lamp Flux:499.445x1 lm		
NAME: M20-T42102-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 22.5DEG
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:0.2432A P:11.67W PF:1.000 Freq:50.00Hz Lamp Flux:499.445x1 lm		
NAME: M20-T42102-9G40-120D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	Shielding Angle:

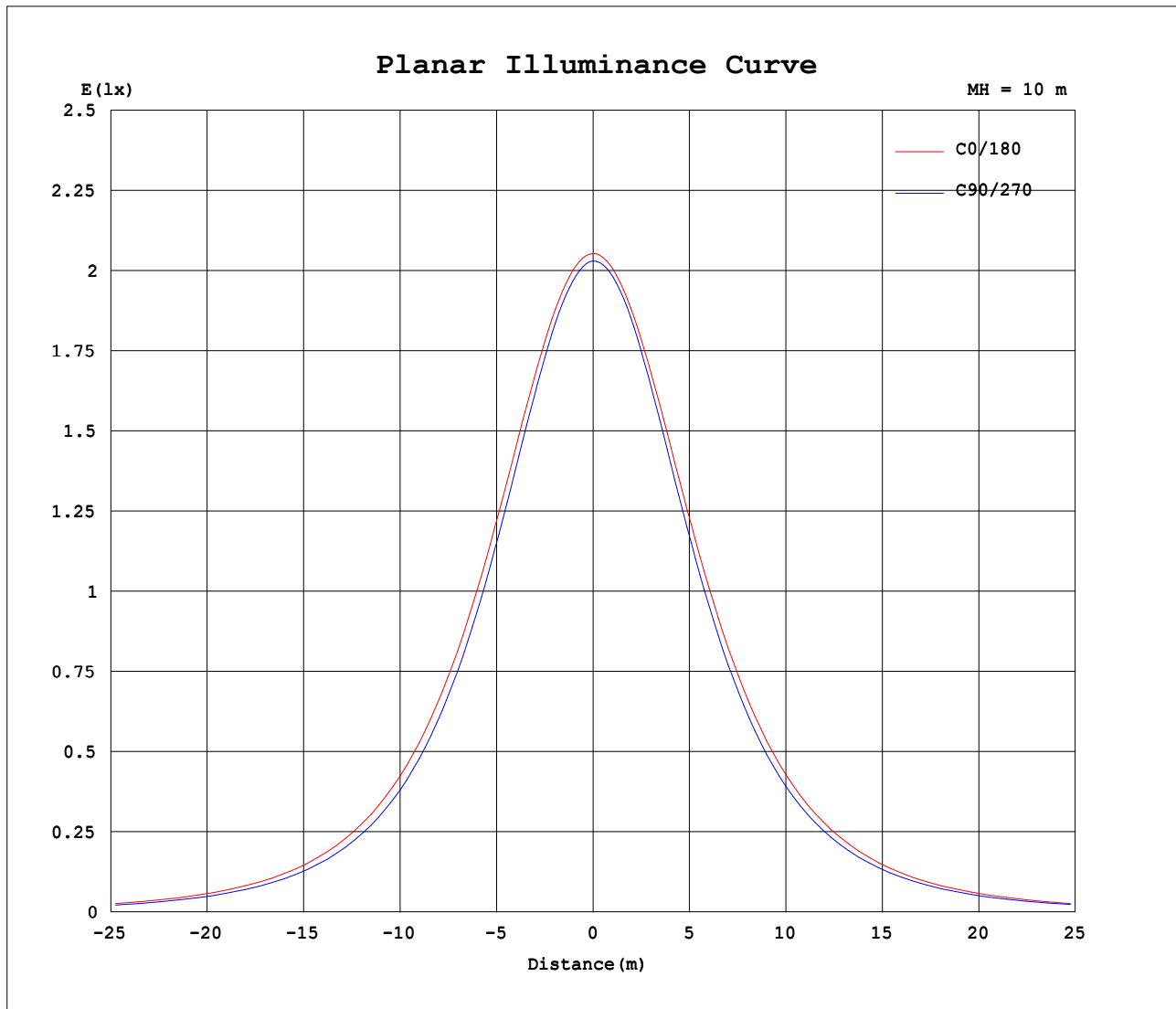
AvgL	cd/m2
L_0~180 (65) av	29367
L_0~180 (75) av	25345
L_0~180 (85) av	20032
L_90~270 (65) av	25689
L_90~270 (75) av	21253
L_90~270 (85) av	14141
L_45 (65) av	27443
L_45 (75) av	23169
L_45 (85) av	16585

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 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: 22.5DEG
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:

```