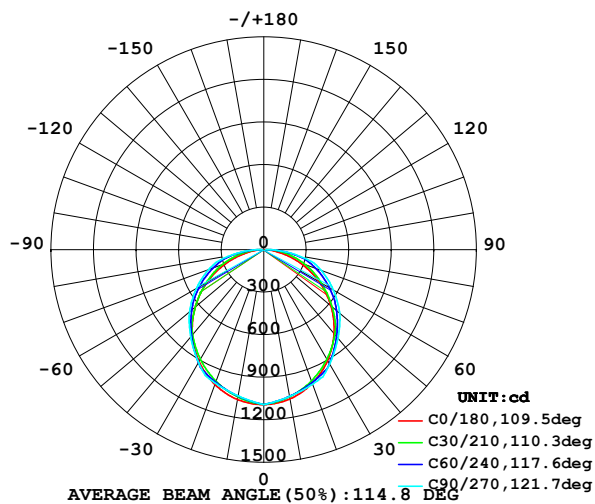


# LUMINAIRE PHOTOMETRIC TEST REPORT

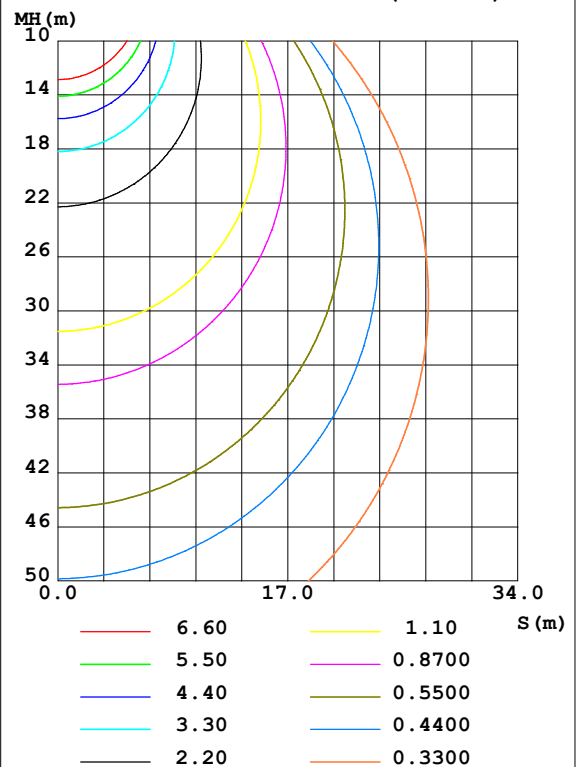
Test:U:120.0V I:0.1801A P:21.50W PF:0.9942 Lamp Flux:1622.81x2 lm		
NAME: LOC-22TROF-DMWMCCT	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:580*145	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 150.98 lm/W			
MODEL		I <sub>max</sub> (cd)	1093	S/MH (C0/180)	1.24
NOMINAL POWER (W)	24	LOR (%)	100.0	S/MH (C90/270)	1.25
RATED VOLTAGE (V)	120-277	TOTAL FLUX (lm)	3245.6	η UP, DN (C0-180)	0.0, 50.3
NOMINAL FLUX (lm)	1622.81	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 49.7
LAMPS INSIDE	2	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	120	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: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2020-04-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity: 50%  
 Test Distance: 8.600m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

### ZONAL FLUX DIAGRAM:

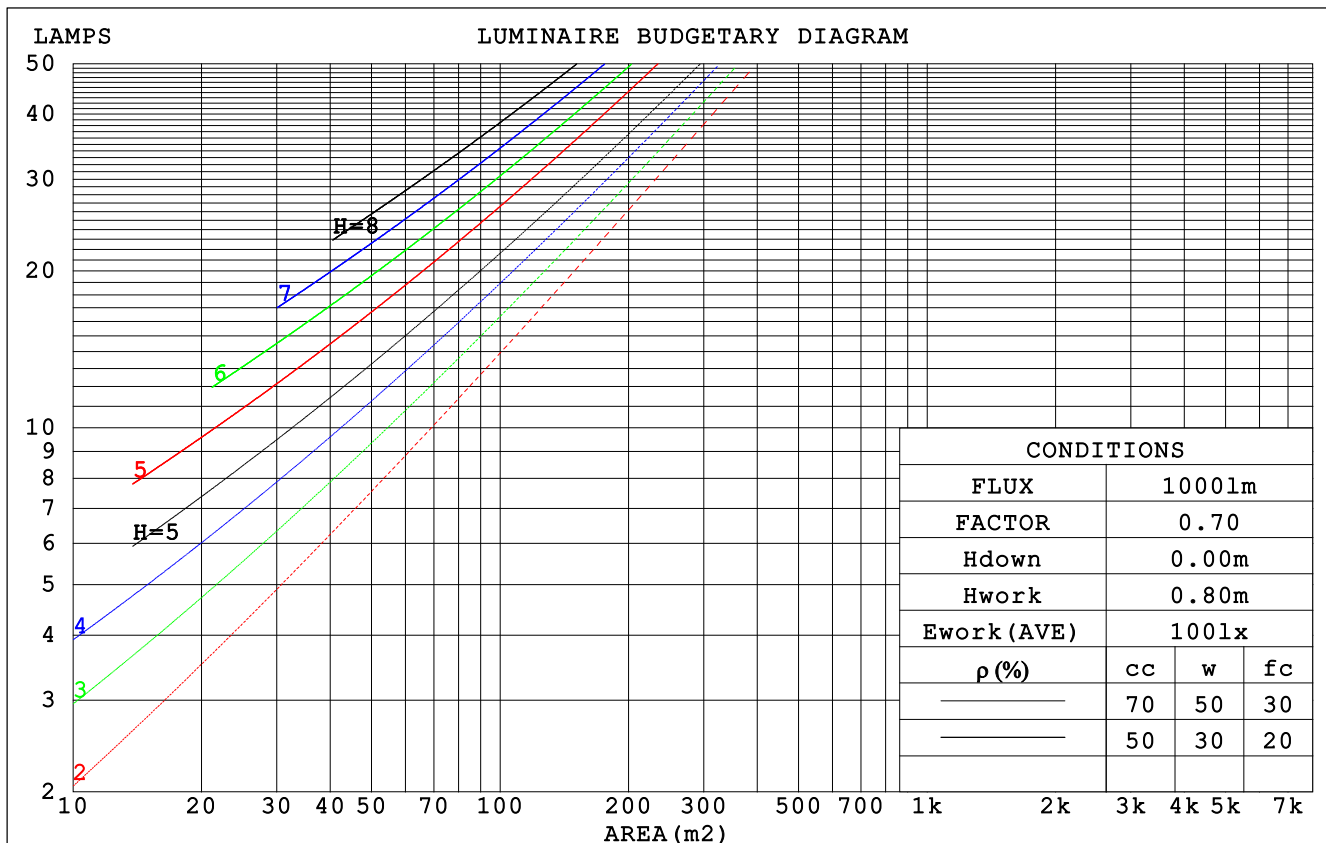
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum,lamp
5	1086	1074	1072	1076	1088	1075	1070	1073	0- 5	25.87	25.87	0.80,0.80
10	1069	1051	1051	1054	1073	1051	1047	1048	5- 10	76.14	102.0	3.14,3.14
15	1041	1023	1030	1026	1047	1023	1025	1018	10- 15	123.4	225.4	6.94,6.94
20	1003	989.8	1009	994.0	1011	989.4	1002	984.3	15- 20	166.6	392.0	12.1,12.1
25	956.6	952.9	988.2	957.5	965.8	952.1	979.1	946.0	20- 25	204.9	596.8	18.4,18.4
30	901.6	913.0	930.5	917.6	912.8	911.2	920.1	904.7	25- 30	236.5	833.4	25.7,25.7
35	839.7	861.4	872.7	866.1	851.5	859.1	861.1	852.6	30- 35	259.1	1092	33.7,33.7
40	771.5	789.9	815.0	794.4	784.0	787.6	802.2	780.0	35- 40	273.1	1366	42.1,42.1
45	697.5	717.6	757.3	722.1	710.4	715.4	743.2	706.9	40- 45	278.7	1644	50.7,50.7
50	618.8	645.8	699.6	649.6	631.8	643.0	684.2	634.1	45- 50	276.4	1921	59.2,59.2
55	536.0	574.6	632.9	577.9	548.6	571.9	616.8	562.1	50- 55	266.4	2187	67.4,67.4
60	449.6	503.9	566.2	506.4	461.5	500.8	549.4	490.4	55- 60	248.6	2436	75,75
65	360.7	427.3	499.5	427.5	371.9	422.6	481.9	412.8	60- 65	224.4	2660	82,82
70	271.4	352.9	432.7	351.1	281.2	346.7	414.5	337.3	65- 70	194.9	2855	88,88
75	184.1	280.7	366.0	277.0	191.1	273.0	347.0	264.4	70- 75	161.7	3017	92.9,92.9
80	104.2	206.6	248.6	201.6	110.4	198.0	235.9	190.8	75- 80	123.0	3140	96.7,96.7
85	42.50	109.1	131.3	106.6	47.25	104.6	124.7	100.9	80- 85	76.41	3216	99.1,99.1
90	8.836	13.57	13.88	13.68	14.19	13.12	13.50	12.94	85- 90	29.65	3246	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:  
 Test Date:2020-04-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity:50%  
 Test Distance:8.600m [K=1.0000]  
 Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

pcc	80%			70%			50%			30%			10%			0
p <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p <sub>fc</sub>	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	1.03	.98	.94	1.00	.96	.92	.96	.92	.89	.92	.89	.86	.88	.86	.84	.82
2.0	.89	.81	.75	.87	.80	.74	.83	.78	.73	.80	.75	.71	.77	.73	.69	.67
3.0	.78	.69	.62	.76	.68	.62	.73	.66	.60	.70	.64	.59	.68	.63	.58	.56
4.0	.69	.59	.52	.67	.59	.52	.65	.57	.51	.62	.56	.51	.60	.54	.50	.48
5.0	.61	.52	.45	.60	.51	.45	.58	.50	.44	.56	.49	.44	.54	.48	.43	.41
6.0	.55	.46	.39	.54	.45	.39	.52	.44	.39	.50	.43	.38	.49	.43	.38	.36
7.0	.50	.41	.34	.49	.40	.34	.47	.40	.34	.46	.39	.34	.44	.38	.34	.31
8.0	.45	.37	.31	.45	.36	.31	.43	.36	.30	.42	.35	.30	.41	.35	.30	.28
9.0	.42	.33	.28	.41	.33	.27	.40	.32	.27	.39	.32	.27	.38	.32	.27	.25
10.0	.38	.30	.25	.38	.30	.25	.37	.30	.25	.36	.29	.25	.35	.29	.25	.23



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2020-04-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity: 50%  
 Test Distance: 8.600m [K=1.0000]  
 Remarks:

## WEC AND CCEC

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	.335	.190	.060	.328	.187	.059	.314	.180	.058	.302	.174	.056	.290	.168	.054	
2.0	.308	.169	.052	.302	.166	.051	.290	.161	.050	.279	.156	.049	.269	.152	.048	
3.0	.282	.150	.045	.276	.148	.044	.265	.144	.044	.256	.140	.043	.247	.137	.042	
4.0	.258	.134	.039	.253	.132	.039	.243	.129	.039	.235	.126	.038	.227	.123	.038	
5.0	.237	.121	.035	.232	.119	.035	.224	.117	.034	.216	.114	.034	.209	.112	.034	
6.0	.219	.110	.031	.215	.108	.031	.207	.106	.031	.201	.104	.031	.194	.102	.030	
7.0	.203	.100	.028	.199	.099	.028	.193	.097	.028	.187	.096	.028	.181	.094	.028	
8.0	.189	.092	.026	.186	.092	.026	.180	.090	.026	.175	.088	.025	.169	.087	.025	
9.0	.177	.085	.024	.174	.085	.024	.169	.083	.024	.164	.082	.023	.159	.081	.023	
10.0	.166	.080	.022	.163	.079	.022	.159	.078	.022	.154	.077	.022	.150	.075	.022	

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	.182	.156	.132	.156	.134	.114	.107	.092	.079	.061	.053	.046	.020	.017	.015	
2.0	.174	.132	.096	.149	.113	.083	.102	.079	.058	.059	.046	.034	.019	.015	.011	
3.0	.167	.114	.073	.143	.099	.063	.098	.069	.044	.057	.040	.026	.018	.013	.009	
4.0	.159	.101	.057	.136	.087	.050	.094	.061	.035	.054	.036	.021	.017	.012	.007	
5.0	.151	.091	.046	.130	.079	.040	.090	.055	.028	.052	.032	.017	.017	.011	.006	
6.0	.144	.083	.038	.124	.071	.033	.085	.050	.024	.050	.029	.014	.016	.010	.005	
7.0	.137	.076	.033	.118	.066	.028	.081	.046	.020	.047	.027	.012	.015	.009	.004	
8.0	.130	.070	.028	.112	.061	.025	.078	.043	.017	.045	.025	.010	.015	.008	.003	
9.0	.124	.065	.025	.107	.056	.022	.074	.040	.015	.043	.023	.009	.014	.008	.003	
10.0	.118	.061	.022	.102	.053	.019	.071	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:  
 Test Date:2020-04-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity:50%  
 Test Distance:8.600m [K=1.0000]  
 Remarks:

UGR(Unified Glare Rating) Table

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	21.0	22.5	21.2	22.7	22.9	22.0	23.6	22.3	23.8	24.0
3H	22.4	23.8	22.7	24.1	24.3	24.2	25.6	24.5	25.9	26.1
4H	22.9	24.3	23.3	24.6	24.8	25.3	26.7	25.6	26.9	27.2
6H	23.3	24.6	23.6	24.9	25.2	26.2	27.5	26.5	27.8	28.1
8H	23.4	24.7	23.7	24.9	25.2	26.5	27.8	26.9	28.1	28.4
12H	23.4	24.7	23.8	25.0	25.3	26.8	28.0	27.2	28.3	28.6
4H 2H	21.8	23.2	22.1	23.4	23.7	22.6	24.0	22.9	24.2	24.5
3H	23.4	24.7	23.8	25.0	25.3	25.0	26.2	25.3	26.5	26.8
4H	24.1	25.2	24.5	25.6	25.9	26.3	27.4	26.6	27.7	28.0
6H	24.6	25.6	25.0	26.0	26.3	27.4	28.4	27.8	28.7	29.1
8H	24.8	25.7	25.2	26.1	26.5	27.8	28.7	28.2	29.1	29.5
12H	24.9	25.7	25.3	26.1	26.5	28.2	29.0	28.6	29.4	29.8
8H 4H	24.7	25.7	25.2	26.0	26.4	26.6	27.5	27.0	27.9	28.2
6H	25.5	26.3	25.9	26.7	27.1	27.9	28.7	28.3	29.1	29.5
8H	25.7	26.4	26.2	26.9	27.3	28.5	29.1	28.9	29.6	30.0
12H	25.9	26.5	26.4	27.0	27.5	28.9	29.5	29.4	30.0	30.5
12H 4H	24.9	25.7	25.3	26.1	26.5	26.6	27.4	27.0	27.8	28.2
6H	25.7	26.4	26.2	26.8	27.3	28.0	28.7	28.4	29.1	29.5
8H	26.1	26.7	26.5	27.1	27.6	28.6	29.2	29.1	29.6	30.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.2					+ 0.1 / - 0.2				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117 Corrected 3246 lm Total Lamp Luminous Flux. (8log(F/F0) = 4.1)

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2020-04-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity: 50%  
 Test Distance: 8.600m [K=1.0000]  
 Remarks:

## UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	56	44	37	55	44	37	54	44	37	30
0.80	66	54	47	65	54	46	63	53	46	39
1.00	74	63	55	73	62	55	71	64	54	47
1.25	81	70	63	80	70	63	77	68	62	54
1.50	86	76	69	85	75	68	82	73	67	59
2.00	93	84	77	92	83	77	88	81	75	67
2.50	97	89	83	95	88	82	91	85	80	71
3.00	101	94	88	99	92	87	95	89	84	76
4.00	105	99	94	103	97	93	98	94	90	81
5.00	108	102	98	105	101	97	101	97	93	84
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2020-04-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity: 50%  
 Test Distance: 8.600m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

Conical surface Flux(90deg):

1644.2 lm

%lum = 50.7%

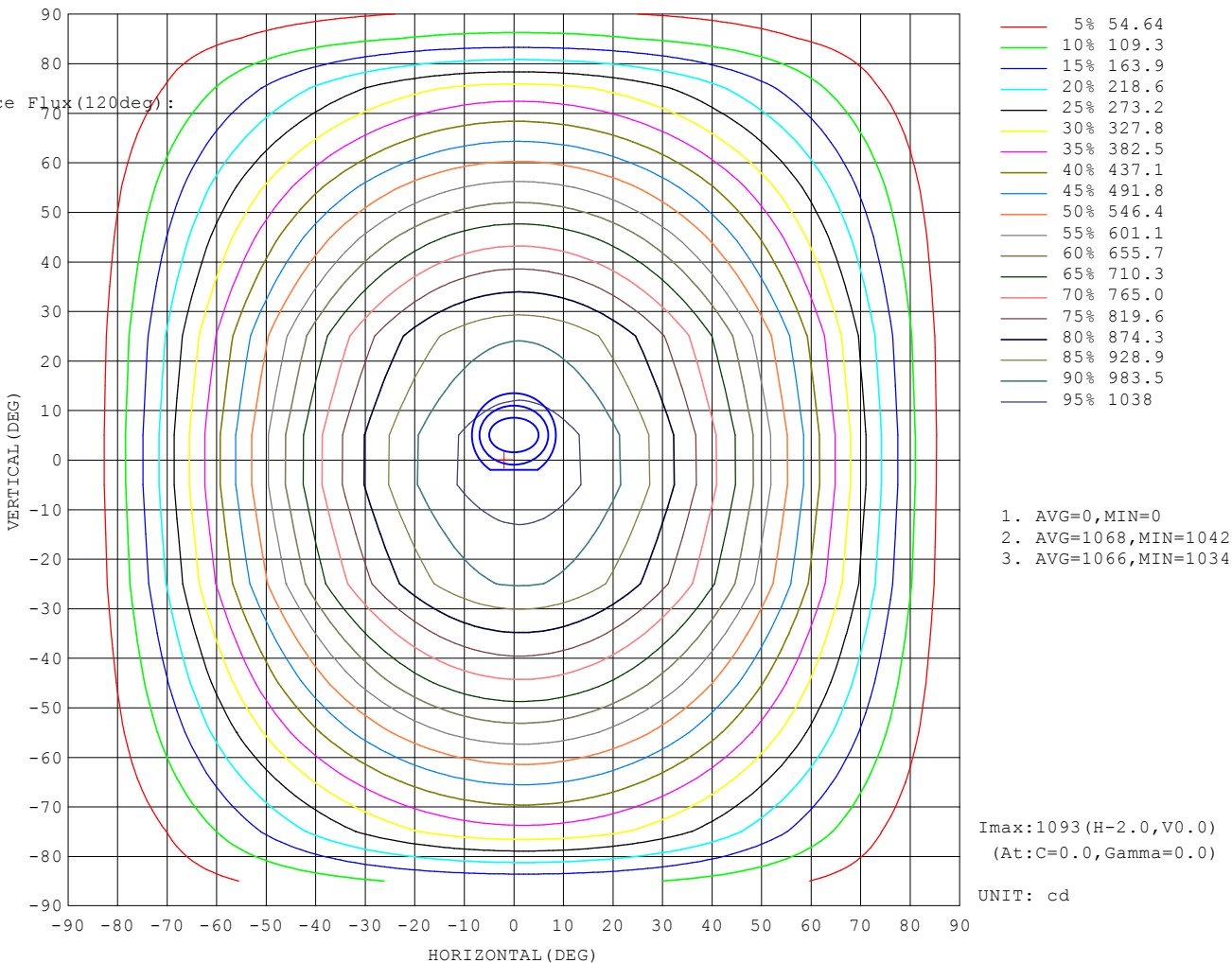
%lamp = 50.7%

Conical surface Flux(120deg):

2435.6 lm

%lum = 75.0%

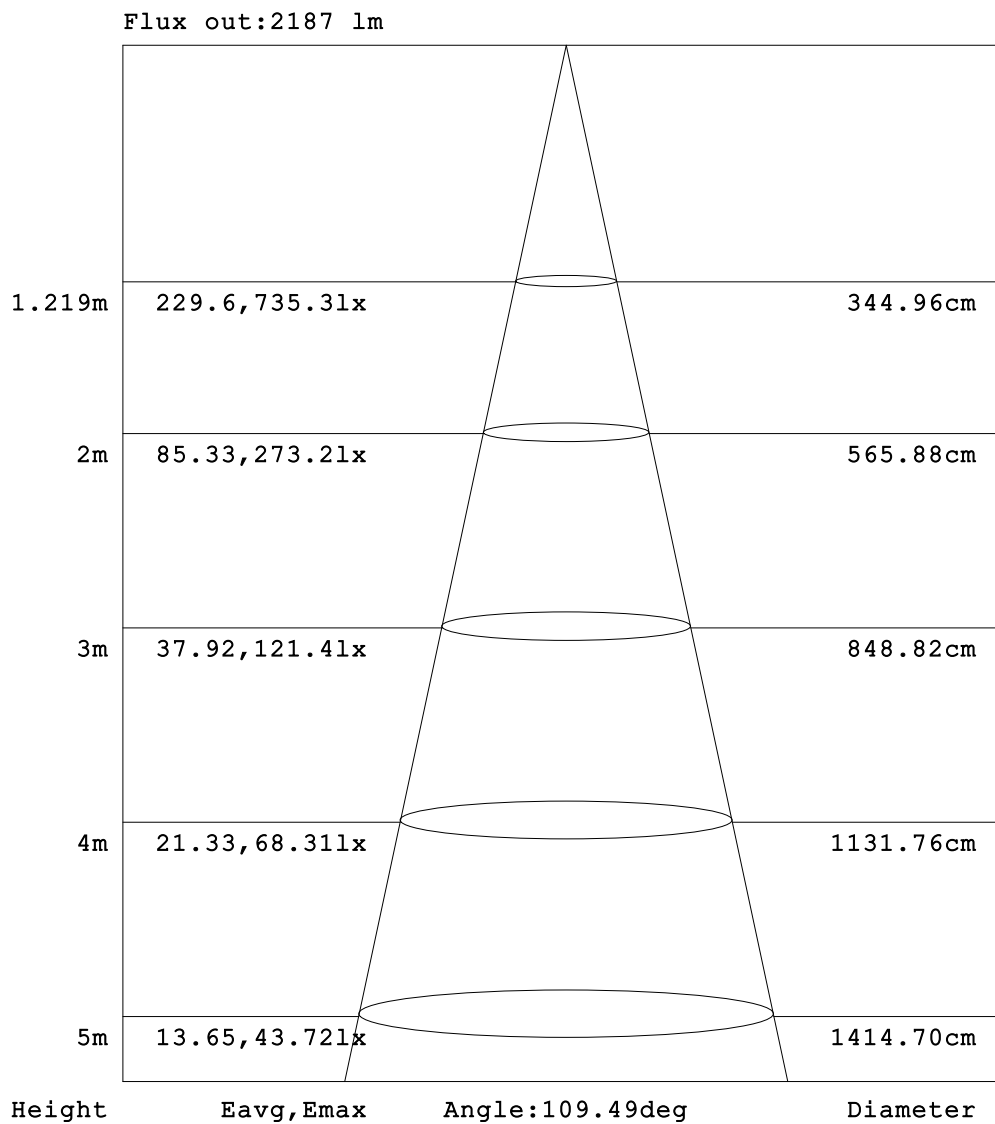
%lamp = 75.0%



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25DEG  
Operators:  
Test Date:2020-04-21

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
Humidity:50%  
Test Distance:8.600m [K=1.0000]  
Remarks:

## AAI Figure



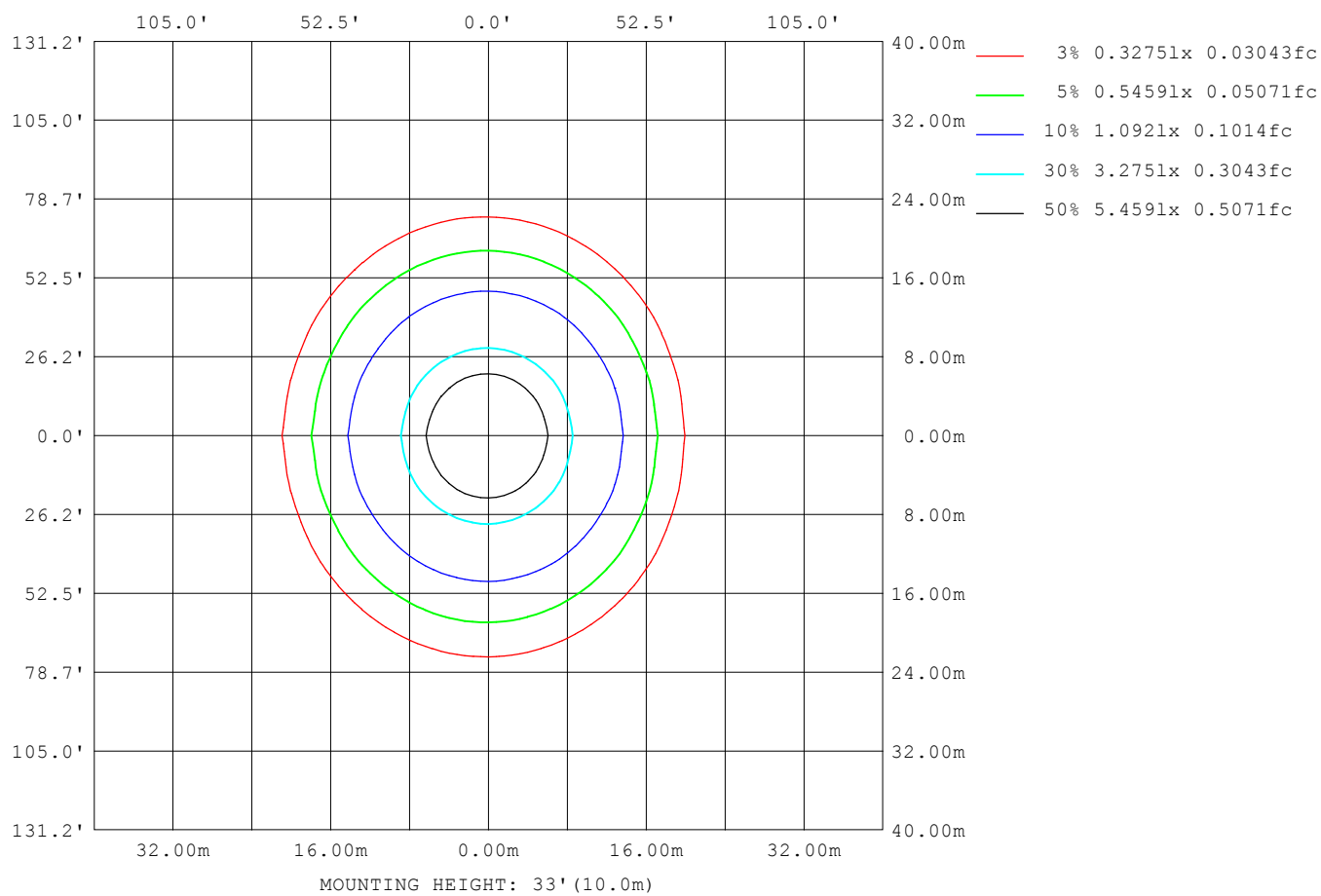
**Note:**The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:  
 Test Date:2020-04-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity:50%  
 Test Distance:8.600m [K=1.0000]  
 Remarks:



ISOLUX DIAGRAM



C Range: 0 - 360DEG	γ Range: 0 - 90DEG
C Interval: 5.0DEG	γ Interval: 0.5DEG
Test Speed: HIGH	Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Temperature:25DEG	Humidity:50%
Operators:	Test Distance:8.600m [K=1.0000]
Test Date:2020-04-21	Remarks:

## LED Avg.L Report

Test:U:120.0V I:0.1801A P:21.50W PF:0.9942 Lamp Flux:1622.81x2 lm		
NAME: LOC-22TROF-DMWMCCT	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:580*145	PROTECTION ANGLE:

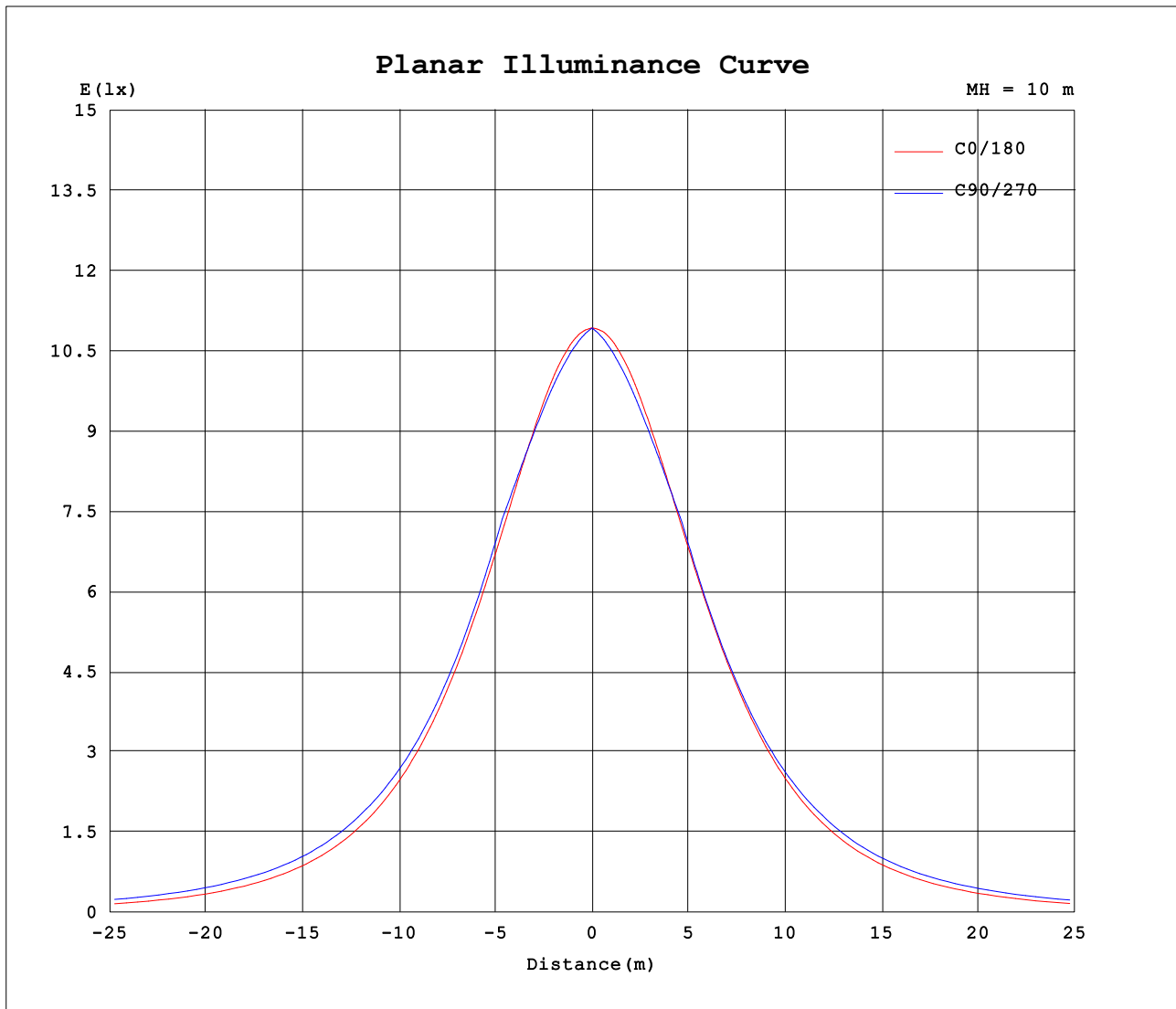
AvgL	cd/m2
L_0~180 (65) av	10307
L_0~180 (75) av	8619
L_0~180 (85) av	6122
L_90~270 (65) av	13806
L_90~270 (75) av	16380
L_90~270 (85) av	17459
L_45 (65) av	11888
L_45 (75) av	12578
L_45 (85) av	14364

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:  
 Test Date:2020-04-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity:50%  
 Test Distance:8.600m [K=1.0000]  
 Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25DEG  
Operators:  
Test Date: 2020-04-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
Humidity: 50%  
Test Distance: 8.600m [K=1.0000]  
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: cd

[illegible]

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25DEG  
Operators:  
Test Date: 2020-04-21

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Humidity:50%
Test Distance:8.600m [K=1.0000]
Remarks:

```

## LUMINOUS DISTRIBUTION INTENSITY DATA

Table--2

UNIT: cd

[illegible]

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25DEG  
Operators:  
Test Date: 2020-04-21

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Humidity:50%
Test Distance:8.600m [K=1.0000]
Remarks:

```

## LUMINOUS DISTRIBUTION INTENSITY DATA

Table--3

UNIT: cd

[illegible]

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25DEG  
Operators:  
Test Date: 2020-04-21

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Humidity:50%
Test Distance:8.600m [K=1.0000]
Remarks:

```

## LUMINOUS DISTRIBUTION INTENSITY DATA

Table--4

UNIT: cd

[illegible]

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25DEG  
Operators:  
Test Date: 2020-04-21

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Humidity:50%
Test Distance:8.600m [K=1.0000]
Remarks:

```