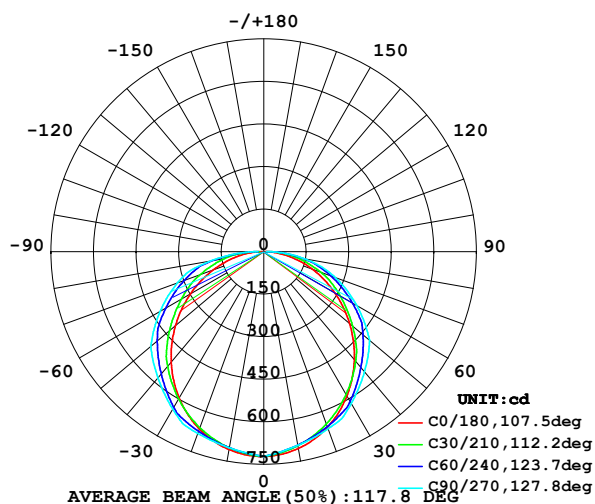


# LUMINAIRE PHOTOMETRIC TEST REPORT

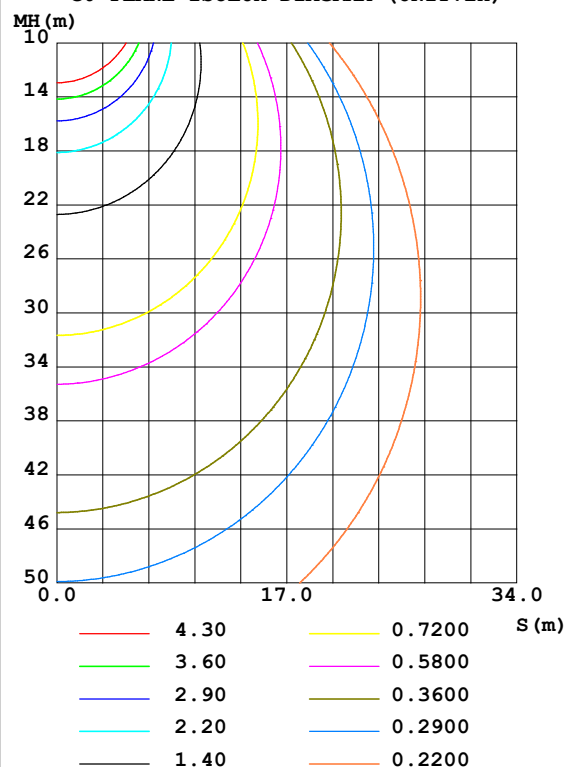
Test:U:120.1V I:0.1236A P:14.76W PF:0.9944 Lamp Flux:2234.04x1 lm		
NAME: LOC-14TROF-DMWMCCT	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:1186*95	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 151.31 lm/W			
MODEL		Imax(cd)	722.2	S/MH(C0/180)	1.23
NOMINAL POWER(W)	15	LOR(%)	100.0	S/MH(C90/270)	1.32
RATED VOLTAGE(V)	120-277	TOTAL FLUX(lm)	2234.0	$\eta$ UP,DN(C0-180)	0.0,48.5
NOMINAL FLUX(lm)	2234.04	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,51.5
LAMPS INSIDE	1	$\eta$ up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120	$\eta$ 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:2020-03-12

$\gamma$  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:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

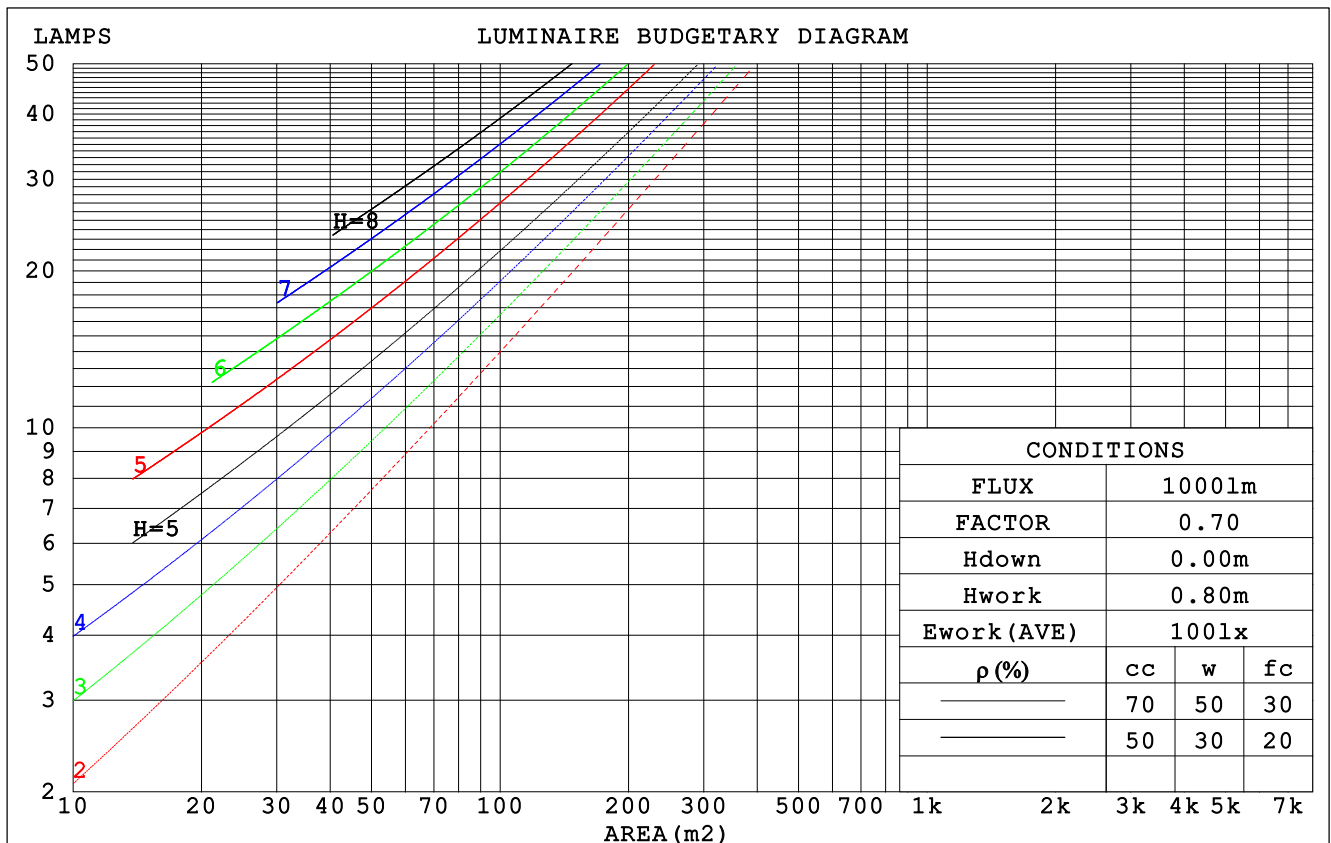
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum,lamp
5	717.3	709.4	707.8	710.7	719.2	713.7	712.1	712.5	0- 5	17.12	17.12	0.77,0.77
10	704.7	692.9	693.5	695.4	708.5	701.4	702.1	699.1	5- 10	50.46	67.58	3.02,3.02
15	684.8	673.0	679.1	676.7	690.3	685.5	692.0	682.2	10- 15	81.87	149.4	6.69,6.69
20	658.3	649.9	664.8	654.8	665.3	666.4	682.0	662.2	15- 20	110.7	260.1	11.6,11.6
25	625.4	624.2	650.5	629.9	633.7	644.2	672.0	639.4	20- 25	136.3	396.4	17.7,17.7
30	587.0	596.2	617.9	602.9	596.4	619.6	641.6	614.3	25- 30	157.6	554.0	24.8,24.8
35	543.9	562.4	585.3	569.7	554.2	588.3	611.3	582.7	30- 35	173.4	727.4	32.6,32.6
40	497.1	518.4	552.7	526.4	507.9	545.8	581.0	540.0	35- 40	183.9	911.3	40.8,40.8
45	447.4	474.4	520.1	483.0	458.6	502.9	550.6	496.9	40- 45	189.2	1100	49.3,49.3
50	395.6	430.7	487.5	439.9	406.7	460.3	520.3	454.3	45- 50	189.7	1290	57.8,57.8
55	342.7	387.9	432.8	397.4	353.2	418.4	471.3	412.5	50- 55	184.9	1475	66,66
60	289.0	344.2	378.2	353.7	299.2	375.8	422.3	370.1	55- 60	173.9	1649	73.8,73.8
65	235.5	288.3	323.6	295.9	245.1	322.0	373.4	316.9	60- 65	158.0	1807	80.9,80.9
70	183.1	234.7	268.9	240.2	190.4	270.5	324.4	266.1	65- 70	138.3	1945	87.1,87.1
75	132.3	183.6	214.3	186.8	138.7	221.2	275.4	217.6	70- 75	116.0	2061	92.3,92.3
80	83.56	132.3	146.0	133.3	89.49	169.4	190.7	166.9	75- 80	90.08	2151	96.3,96.3
85	39.31	70.30	77.66	70.80	43.98	92.50	106.1	91.55	80- 85	58.45	2210	98.9,98.9
90	6.150	9.168	9.331	9.163	9.506	16.74	21.41	17.40	85- 90	24.16	2234	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:2020-03-12

$\gamma$  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

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	1.02	.97	.93	.90	.95	.92	.96	.92	.89	.92	.89	.86	.88	.86	.83	.81
2.0	.88	.81	.75	.86	.79	.74	.83	.77	.72	.79	.74	.70	.76	.72	.69	.66
3.0	.77	.68	.61	.75	.67	.61	.72	.65	.60	.69	.63	.58	.67	.62	.57	.55
4.0	.68	.59	.51	.66	.58	.51	.64	.56	.50	.61	.55	.50	.59	.54	.49	.47
5.0	.60	.51	.44	.59	.50	.44	.57	.49	.43	.55	.48	.43	.53	.47	.42	.40
6.0	.54	.45	.38	.53	.44	.38	.51	.44	.38	.50	.43	.37	.48	.42	.37	.35
7.0	.49	.40	.34	.48	.40	.34	.47	.39	.33	.45	.38	.33	.44	.38	.33	.31
8.0	.45	.36	.30	.44	.36	.30	.43	.35	.30	.41	.34	.29	.40	.34	.29	.27
9.0	.41	.33	.27	.40	.32	.27	.39	.32	.27	.38	.31	.26	.37	.31	.26	.24
10.0	.38	.30	.24	.37	.30	.24	.36	.29	.24	.35	.29	.24	.34	.28	.24	.22



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2020-03-12

$\gamma$  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:

## 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	.343	.195	.062	.336	.192	.061	.322	.185	.059	.310	.179	.057	.299	.173	.056	
2.0	.314	.172	.053	.307	.169	.052	.295	.164	.051	.284	.160	.050	.274	.155	.049	
3.0	.286	.152	.046	.280	.150	.045	.270	.146	.044	.260	.142	.044	.251	.139	.043	
4.0	.261	.136	.040	.256	.134	.040	.247	.131	.039	.238	.128	.039	.230	.125	.038	
5.0	.239	.122	.035	.235	.121	.035	.227	.118	.035	.219	.116	.034	.212	.113	.034	
6.0	.221	.111	.032	.217	.110	.032	.210	.107	.031	.203	.105	.031	.196	.103	.031	
7.0	.205	.101	.029	.201	.100	.029	.195	.098	.028	.188	.097	.028	.183	.095	.028	
8.0	.190	.093	.026	.187	.092	.026	.181	.091	.026	.176	.089	.026	.171	.088	.026	
9.0	.178	.086	.024	.175	.085	.024	.170	.084	.024	.165	.083	.024	.160	.081	.024	
10.0	.167	.080	.022	.164	.079	.022	.160	.078	.022	.155	.077	.022	.151	.076	.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	.183	.156	.132	.156	.134	.113	.107	.092	.078	.062	.053	.046	.020	.017	.015	
2.0	.175	.132	.095	.150	.113	.082	.103	.078	.057	.059	.046	.034	.019	.015	.011	
3.0	.168	.114	.072	.144	.099	.062	.099	.069	.044	.057	.040	.026	.018	.013	.008	
4.0	.160	.101	.057	.137	.087	.049	.094	.061	.035	.055	.036	.020	.018	.012	.007	
5.0	.152	.091	.046	.131	.079	.040	.090	.055	.028	.052	.032	.017	.017	.011	.006	
6.0	.145	.083	.038	.124	.072	.033	.086	.050	.023	.050	.029	.014	.016	.010	.005	
7.0	.138	.076	.032	.118	.066	.028	.082	.046	.020	.048	.027	.012	.015	.009	.004	
8.0	.131	.070	.028	.113	.061	.024	.078	.043	.017	.045	.025	.010	.015	.008	.003	
9.0	.125	.065	.025	.107	.056	.022	.074	.040	.015	.043	.023	.009	.014	.008	.003	
10.0	.119	.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:2020-03-12

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	18.2	19.8	18.5	20.0	20.2	19.6	21.1	19.8	21.3	21.6
3H	19.7	21.2	20.0	21.4	21.7	21.5	23.0	21.8	23.2	23.4
4H	20.4	21.8	20.7	22.0	22.3	22.4	23.8	22.7	24.1	24.3
6H	20.8	22.2	21.2	22.4	22.7	23.2	24.5	23.5	24.8	25.1
8H	21.0	22.3	21.4	22.6	22.9	23.5	24.8	23.9	25.1	25.4
12H	21.1	22.4	21.5	22.7	23.0	23.8	25.0	24.1	25.3	25.6
4H 2H	19.1	20.5	19.5	20.8	21.1	20.1	21.5	20.4	21.8	22.0
3H	20.9	22.1	21.2	22.4	22.7	22.3	23.5	22.6	23.8	24.1
4H	21.6	22.8	22.0	23.1	23.4	23.4	24.5	23.8	24.8	25.2
6H	22.3	23.3	22.7	23.6	24.0	24.3	25.4	24.7	25.7	26.1
8H	22.5	23.4	22.9	23.8	24.2	24.7	25.7	25.2	26.1	26.4
12H	22.6	23.5	23.1	23.9	24.3	25.1	25.9	25.5	26.3	26.7
8H 4H	22.2	23.2	22.6	23.5	23.9	23.7	24.6	24.1	25.0	25.4
6H	23.1	23.9	23.5	24.3	24.7	24.9	25.7	25.3	26.1	26.5
8H	23.4	24.1	23.9	24.6	25.0	25.4	26.1	25.8	26.5	27.0
12H	23.7	24.3	24.2	24.8	25.3	25.8	26.5	26.3	26.9	27.4
12H 4H	22.3	23.2	22.7	23.6	24.0	23.7	24.6	24.1	25.0	25.4
6H	23.3	24.0	23.7	24.4	24.9	25.0	25.7	25.4	26.1	26.5
8H	23.7	24.3	24.2	24.8	25.3	25.5	26.2	26.0	26.6	27.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.1 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.3					+ 0.1 / - 0.3				

CIE Pub.117 Corrected 2234 lm Total Lamp Luminous Flux. (8log(F/F0) = 2.8)

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2020-03-12

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	36	55	43	36	54	43	36	29
0.80	65	53	46	64	53	45	62	52	45	38
1.00	74	62	54	72	61	54	70	63	53	46
1.25	81	70	62	79	69	62	76	67	61	53
1.50	86	75	68	84	74	67	81	72	66	58
2.00	93	84	77	91	82	76	87	80	74	66
2.50	97	89	82	95	87	81	91	84	79	70
3.00	100	93	87	98	91	86	94	88	84	75
4.00	105	98	93	102	97	92	98	93	89	80
5.00	107	102	97	105	100	96	100	96	93	83
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: 2020-03-12

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:

ISOCANDELA DIAGRAM

Conical surface Flux(90deg):

1100.5 lm

%lum = 49.3%

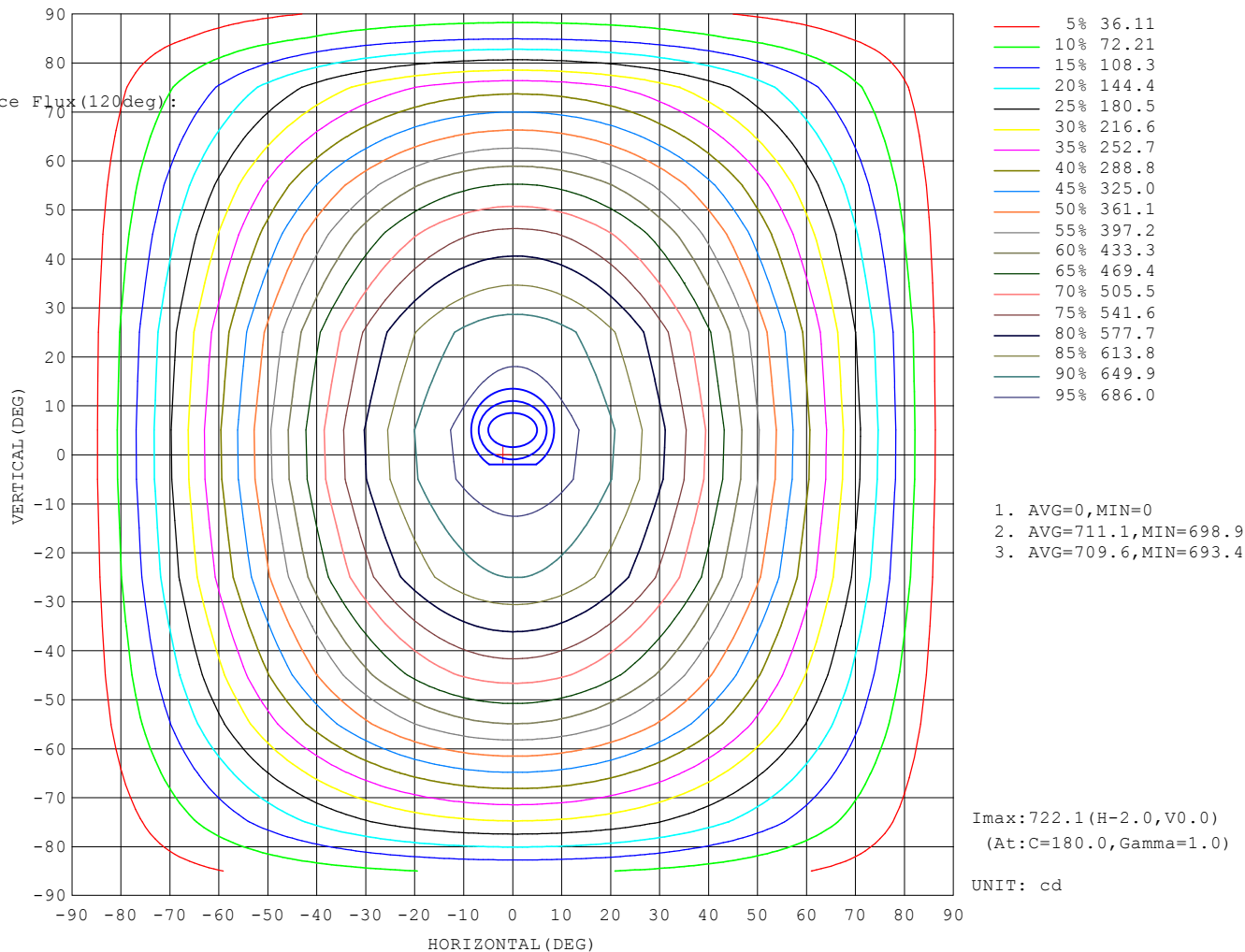
%lamp = 49.3%

Conical surface Flux(120deg):

1649 lm

%lum = 73.8%

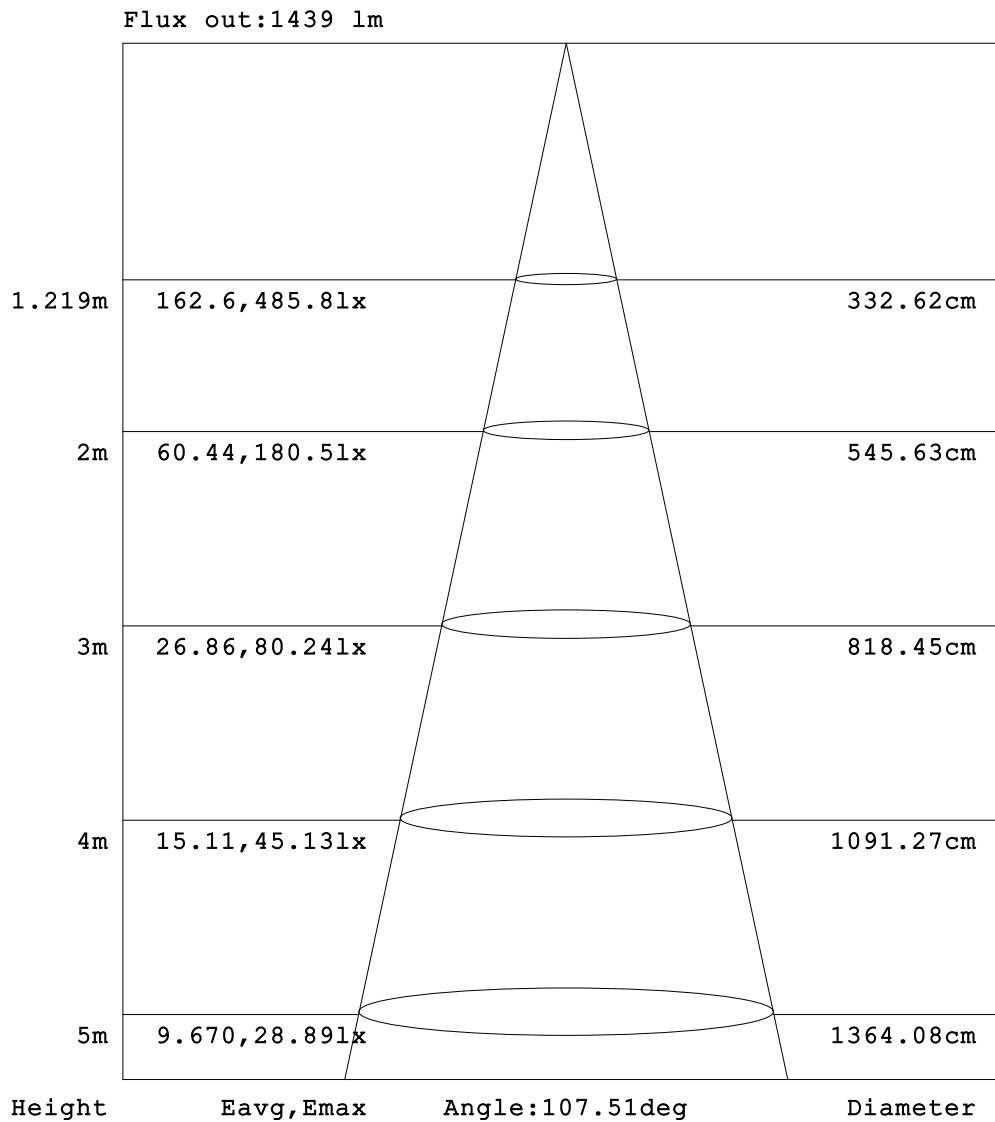
%lamp = 73.8%



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25DEG  
Operators:  
Test Date:2020-03-12

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



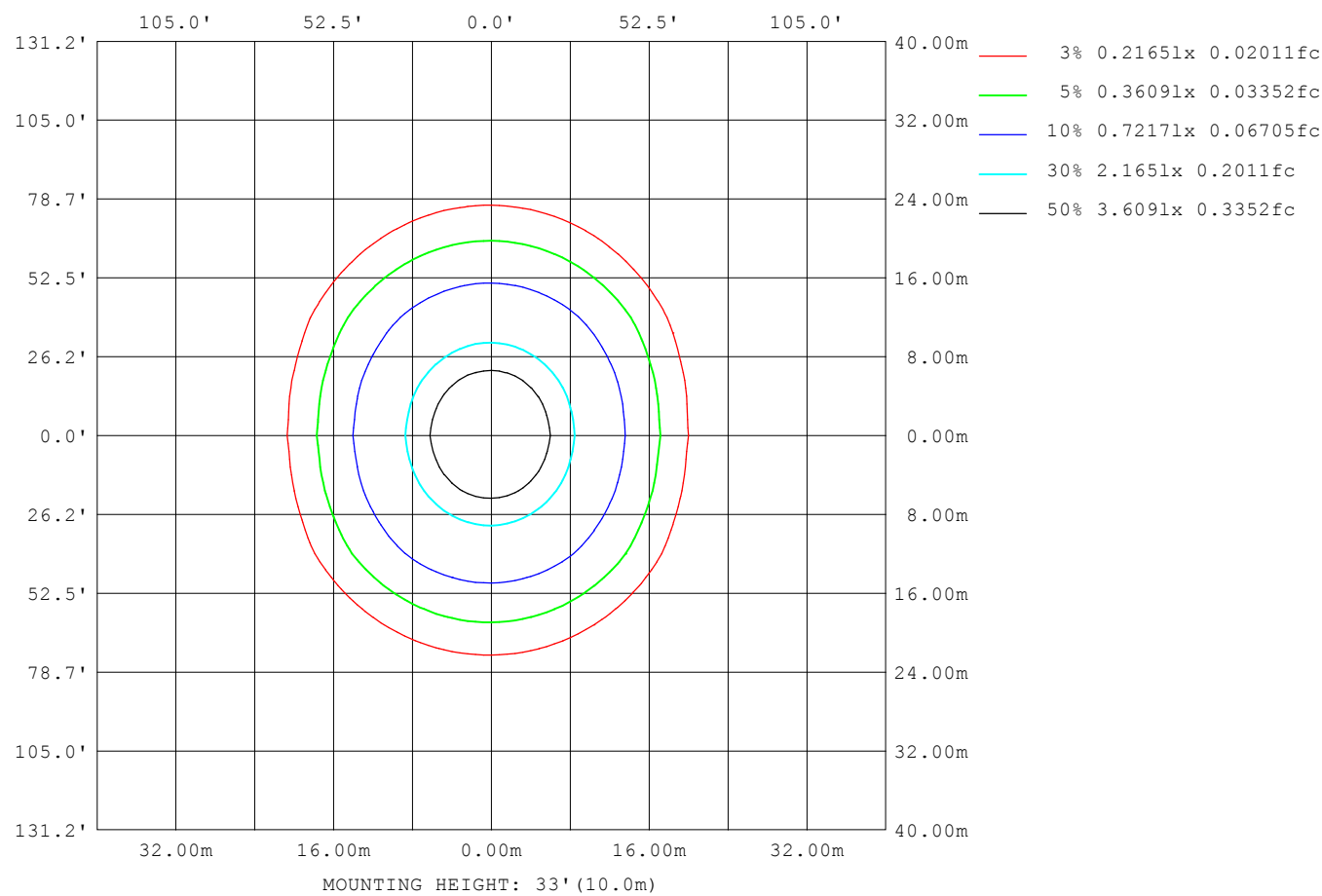
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25DEG  
Operators:  
Test Date: 2020-03-12

$\gamma$  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:



ISOLUX DIAGRAM



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25DEG  
Operators:  
Test Date: 2020-03-12

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:

## LED Avg.L Report

Test:U:120.1V I:0.1236A P:14.76W PF:0.9944 Lamp Flux:2234.04x1 lm		
NAME: LOC-14TROF-DMWMCCT	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:1186*95	PROTECTION ANGLE:

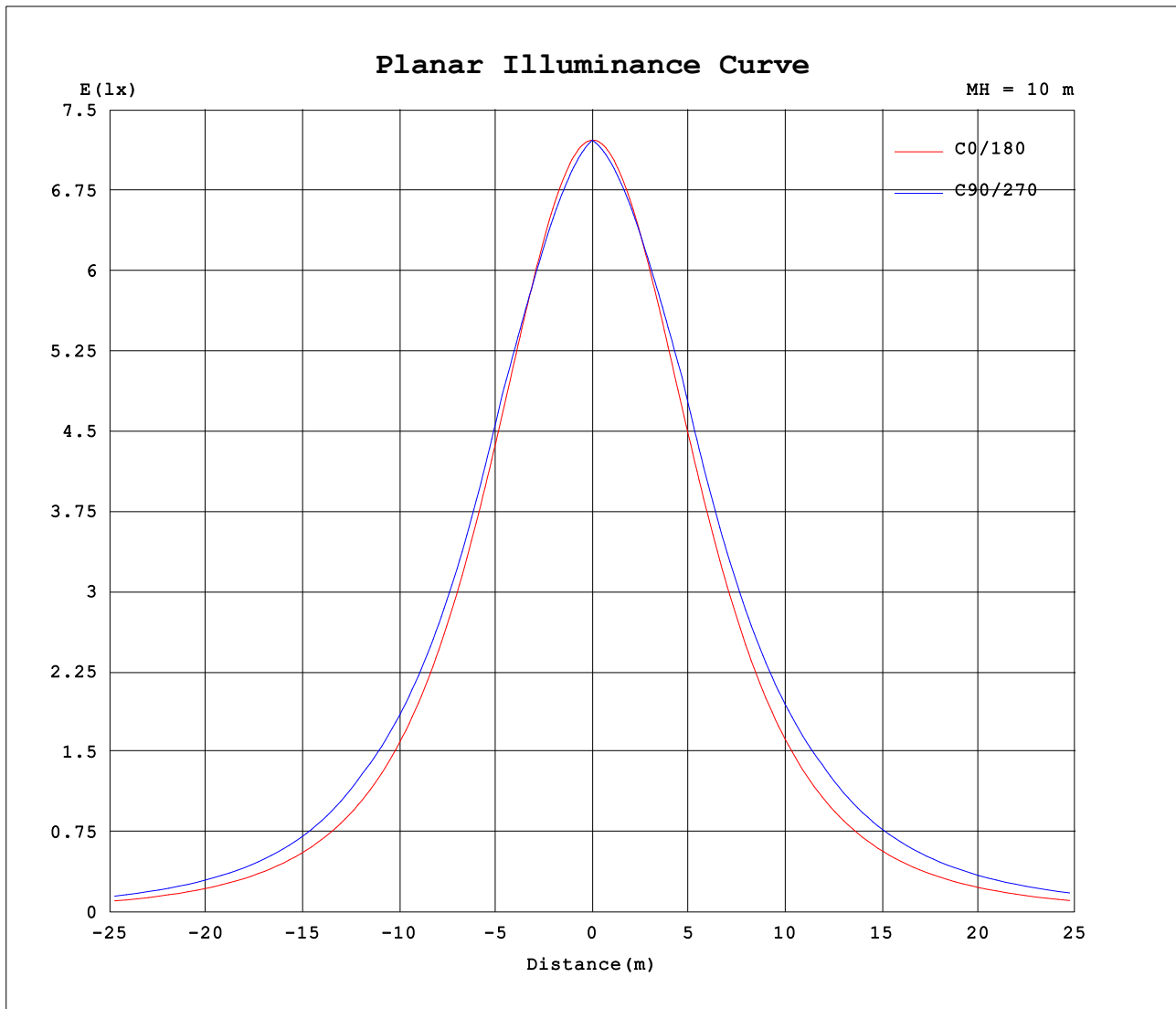
AvgL	cd/m2
L_0~180 (65) av	5047
L_0~180 (75) av	4647
L_0~180 (85) av	4241
L_90~270 (65) av	7318
L_90~270 (75) av	8397
L_90~270 (85) av	9355
L_45 (65) av	6422
L_45 (75) av	6937
L_45 (85) av	8278

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:  
 Test Date:2020-03-12

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: 2020-03-12

$\gamma$  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: 2020-03-12

```

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: 2020-03-12

```

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: 2020-03-12

```

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: 2020-03-12

```

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:

```