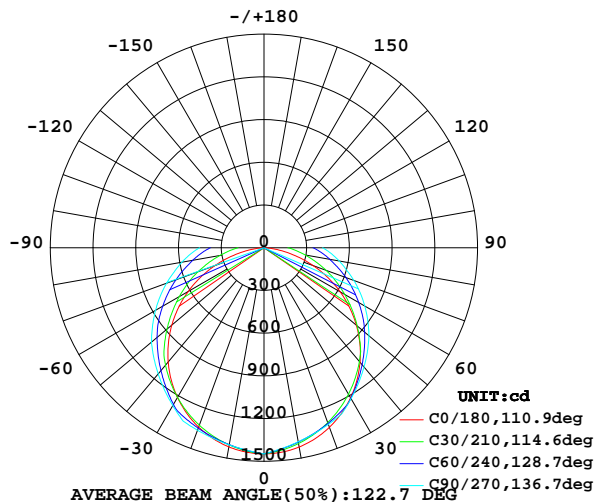


## LUMINAIRE PHOTOMETRIC TEST REPORT

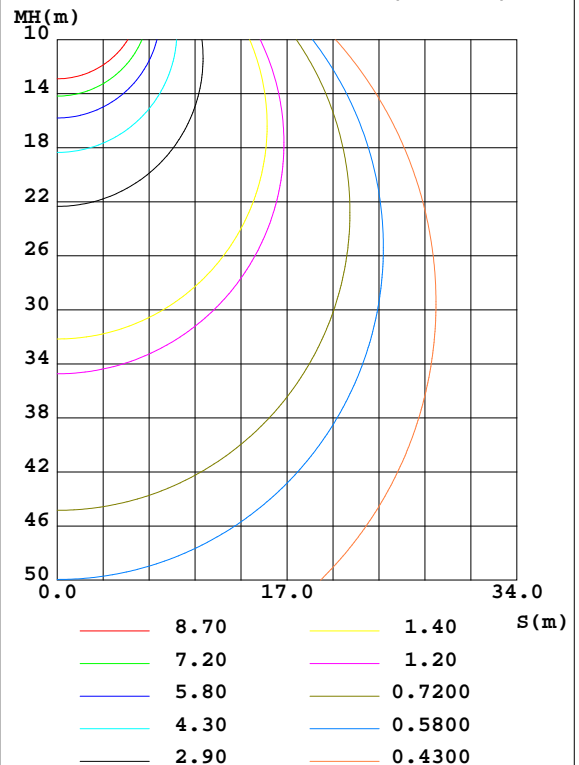
Test:U:120.4V I:0.3413A P:40.97W PF:0.9973 Lamp Flux:4807x1 lm		
NAME: MSS4-20/30/40/347/D10/W/35-40-50	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 117.32 lm/W			
MODEL	5000K	Imax(cd)	1447	S/MH(C0/180)	1.25
NOMINAL POWER(W)	40	LOR(%)	100.0	S/MH(C90/270)	1.32
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	4807.0	$\eta$ UP,DN(C0-180)	0.0,48.8
NOMINAL FLUX(lm)	4807	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,51.2
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:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-04-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity:65.0%  
 Test Distance:8.800m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

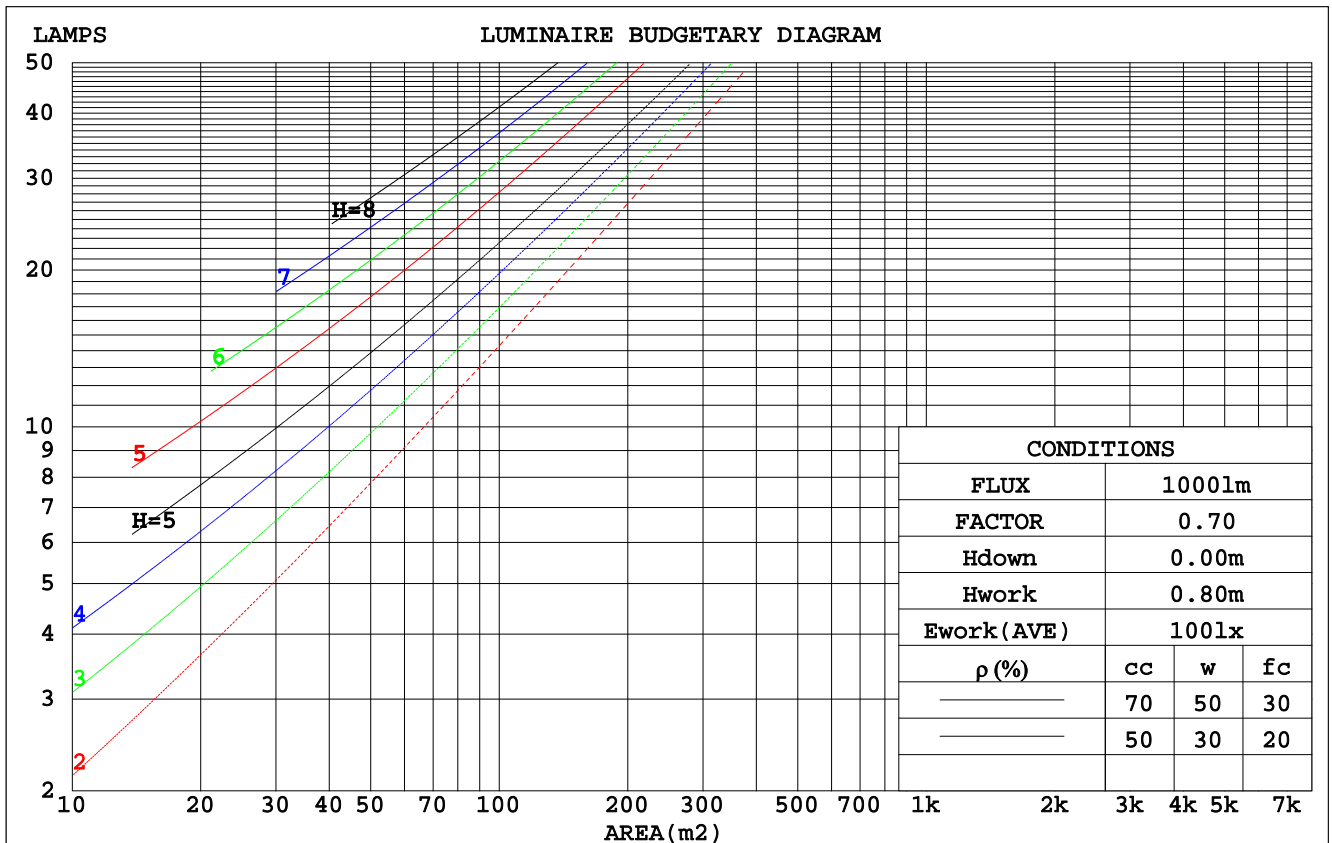
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum, lamp
5	1441	1422	1416	1421	1440	1429	1426	1429	0- 5	34.30	34.30	0.71,0.71
10	1421	1390	1384	1389	1420	1404	1406	1405	5- 10	101.1	135.4	2.82,2.82
15	1388	1351	1352	1350	1387	1373	1385	1374	10- 15	164.1	299.5	6.23,6.23
20	1342	1308	1321	1306	1341	1336	1364	1338	15- 20	222.1	521.7	10.9,10.9
25	1285	1259	1289	1257	1283	1294	1343	1296	20- 25	274.0	795.6	16.6,16.6
30	1216	1206	1224	1203	1215	1247	1281	1250	25- 30	317.6	1113	23.2,23.2
35	1138	1141	1158	1138	1135	1186	1218	1190	30- 35	350.3	1464	30.4,30.4
40	1049	1056	1093	1054	1047	1102	1156	1106	35- 40	372.4	1836	38.2,38.2
45	952.1	970.7	1028	968.6	949.8	1017	1094	1021	40- 45	384.1	2220	46.2,46.2
50	847.1	884.5	962.3	882.8	845.0	930.9	1031	935.5	45- 50	385.7	2606	54.2,54.2
55	734.9	799.2	889.6	798.2	732.9	846.1	955.6	850.9	50- 55	377.5	2983	62.1,62.1
60	616.8	714.8	817.0	714.4	615.0	761.4	879.7	766.2	55- 60	359.5	3343	69.5,69.5
65	493.9	628.2	744.3	627.9	491.8	670.3	803.9	675.6	60- 65	333.4	3676	76.5,76.5
70	368.1	544.6	671.7	544.4	366.5	582.6	728.0	588.5	65- 70	300.8	3977	82.7,82.7
75	243.8	464.8	599.0	464.7	242.6	499.2	652.2	505.4	70- 75	263.6	4241	88.2,88.2
80	128.9	390.3	536.6	390.3	127.8	420.9	585.6	427.6	75- 80	224.6	4465	92.9,92.9
85	38.52	327.1	474.2	327.8	37.82	354.1	519.0	359.9	80- 85	187.6	4653	96.8,96.8
90	0.9137	267.0	411.9	268.4	0.7491	290.9	452.4	295.7	85- 90	154.0	4807	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:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-04-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity:65.0%  
 Test Distance:8.800m [K=1.0000]  
 Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

pcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	1.00	.95	.90	.98	.93	.88	.93	.89	.86	.89	.86	.83	.86	.83	.80	.78
2.0	.86	.78	.71	.84	.77	.70	.80	.74	.69	.77	.72	.67	.74	.69	.66	.63
3.0	.75	.66	.58	.73	.65	.58	.70	.63	.57	.67	.61	.56	.64	.59	.55	.52
4.0	.66	.56	.49	.64	.55	.48	.62	.54	.48	.59	.53	.47	.57	.51	.46	.44
5.0	.59	.49	.42	.57	.48	.41	.55	.47	.41	.53	.46	.40	.51	.45	.40	.38
6.0	.53	.43	.36	.52	.43	.36	.50	.42	.36	.48	.41	.35	.46	.40	.35	.33
7.0	.48	.38	.32	.47	.38	.32	.45	.37	.31	.44	.36	.31	.42	.36	.31	.29
8.0	.43	.34	.28	.43	.34	.28	.41	.33	.28	.40	.33	.28	.39	.32	.28	.26
9.0	.40	.31	.25	.39	.31	.25	.38	.30	.25	.37	.30	.25	.36	.29	.25	.23
10.0	.37	.28	.23	.36	.28	.23	.35	.28	.23	.34	.27	.23	.33	.27	.23	.21



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2021-04-29

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity: 65.0%  
 Test Distance: 8.800m [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	.383	.218	.069	.375	.214	.068	.362	.208	.066	.349	.201	.065	.338	.196	.063	
2.0	.336	.184	.056	.329	.181	.056	.317	.176	.055	.306	.172	.054	.296	.167	.053	
3.0	.300	.160	.048	.294	.158	.047	.283	.154	.047	.273	.150	.046	.264	.146	.045	
4.0	.271	.141	.041	.266	.139	.041	.256	.136	.041	.247	.133	.040	.239	.130	.040	
5.0	.247	.126	.036	.242	.124	.036	.234	.122	.036	.226	.119	.035	.219	.117	.035	
6.0	.226	.113	.032	.222	.112	.032	.215	.110	.032	.208	.108	.032	.201	.106	.031	
7.0	.209	.103	.029	.205	.102	.029	.199	.100	.029	.192	.099	.029	.187	.097	.028	
8.0	.194	.095	.027	.191	.094	.027	.185	.092	.026	.179	.091	.026	.174	.089	.026	
9.0	.181	.087	.024	.178	.087	.024	.173	.085	.024	.168	.084	.024	.163	.083	.024	
10.0	.169	.081	.023	.167	.081	.022	.162	.079	.022	.157	.078	.022	.153	.077	.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	.185	.155	.129	.159	.133	.111	.108	.092	.077	.062	.053	.045	.020	.017	.014	
2.0	.178	.132	.093	.153	.113	.080	.105	.078	.056	.060	.046	.033	.019	.015	.011	
3.0	.170	.114	.070	.146	.099	.061	.100	.069	.043	.058	.040	.025	.019	.013	.008	
4.0	.162	.101	.055	.139	.088	.048	.096	.061	.034	.055	.036	.020	.018	.012	.007	
5.0	.154	.091	.045	.132	.079	.039	.091	.055	.027	.053	.032	.016	.017	.011	.005	
6.0	.147	.083	.037	.126	.072	.033	.087	.050	.023	.050	.030	.014	.016	.010	.005	
7.0	.139	.076	.032	.120	.066	.028	.083	.046	.020	.048	.027	.012	.016	.009	.004	
8.0	.132	.070	.028	.114	.061	.024	.079	.043	.017	.046	.025	.010	.015	.008	.003	
9.0	.126	.065	.024	.108	.057	.021	.075	.040	.015	.044	.024	.009	.014	.008	.003	
10.0	.120	.061	.022	.103	.053	.019	.072	.037	.014	.042	.022	.008	.014	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2021-04-29

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity: 65.0%  
 Test Distance: 8.800m [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	22.7	24.4	23.0	24.6	24.8	24.1	25.7	24.3	25.9	26.1
3H	24.2	25.7	24.5	26.0	26.2	26.5	28.0	26.8	28.2	28.5
4H	24.7	26.2	25.0	26.4	26.7	27.8	29.2	28.1	29.5	29.8
6H	25.1	26.4	25.4	26.7	27.0	29.2	30.6	29.6	30.9	31.2
8H	25.1	26.5	25.5	26.7	27.0	30.1	31.4	30.4	31.7	32.0
12H	25.1	26.4	25.5	26.7	27.0	31.0	32.3	31.3	32.6	32.9
4H 2H	23.7	25.1	24.0	25.4	25.7	24.7	26.1	25.0	26.4	26.6
3H	25.4	26.7	25.8	27.0	27.3	27.3	28.6	27.7	28.9	29.2
4H	26.1	27.3	26.5	27.6	28.0	28.9	30.0	29.2	30.4	30.7
6H	26.6	27.7	27.0	28.1	28.4	30.5	31.6	30.9	32.0	32.3
8H	26.8	27.8	27.2	28.1	28.5	31.5	32.5	31.9	32.9	33.2
12H	26.8	27.8	27.3	28.2	28.6	32.5	33.5	33.0	33.9	34.3
8H 4H	27.0	28.0	27.4	28.4	28.8	29.2	30.2	29.6	30.6	31.0
6H	27.8	28.7	28.3	29.1	29.5	31.2	32.1	31.6	32.5	32.9
8H	28.2	29.0	28.6	29.4	29.8	32.4	33.1	32.8	33.6	34.0
12H	28.4	29.1	28.9	29.5	30.0	33.7	34.4	34.2	34.8	35.3
12H 4H	27.2	28.2	27.7	28.6	29.0	29.2	30.2	29.7	30.6	31.0
6H	28.3	29.1	28.8	29.5	30.0	31.3	32.1	31.8	32.5	33.0
8H	28.8	29.5	29.3	30.0	30.4	32.6	33.3	33.1	33.7	34.2
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 / - 0.2					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 4807 lm Total Lamp Luminous Flux.(8log(F/F0) = 5.5)

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-04-29

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity:65.0%  
 Test Distance:8.800m [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	54	42	35	53	42	35	52	41	34	28
0.80	64	51	43	63	51	43	61	50	43	35
1.00	72	60	52	71	59	51	68	61	51	43
1.25	79	67	59	77	66	59	74	65	58	50
1.50	84	73	65	82	72	64	79	70	63	55
2.00	91	81	73	89	80	73	85	77	71	63
2.50	95	86	79	93	85	78	89	82	76	67
3.00	99	90	84	96	89	83	92	86	81	71
4.00	103	96	90	101	94	89	96	91	86	77
5.00	106	100	95	103	98	93	98	94	90	80
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: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2021-04-29

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity: 65.0%  
 Test Distance: 8.800m [K=1.0000]  
 Remarks:

## ISOCANDELA DIAGRAM

Conical surface Flux(90deg):

2220.1 lm

%lum = 46.2%

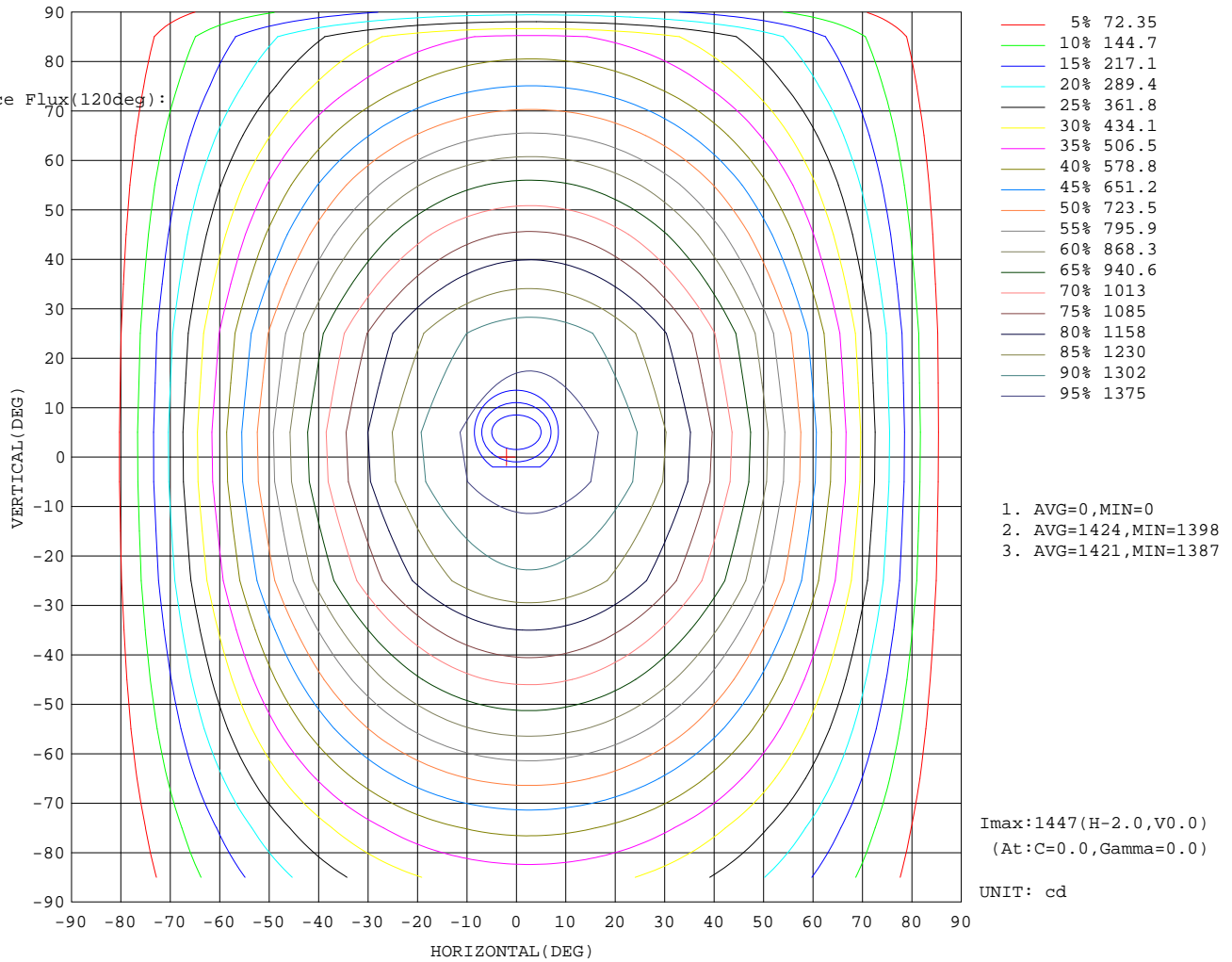
%lamp = 46.2%

Conical surface Flux(120deg):

3342.9 lm

%lum = 69.5%

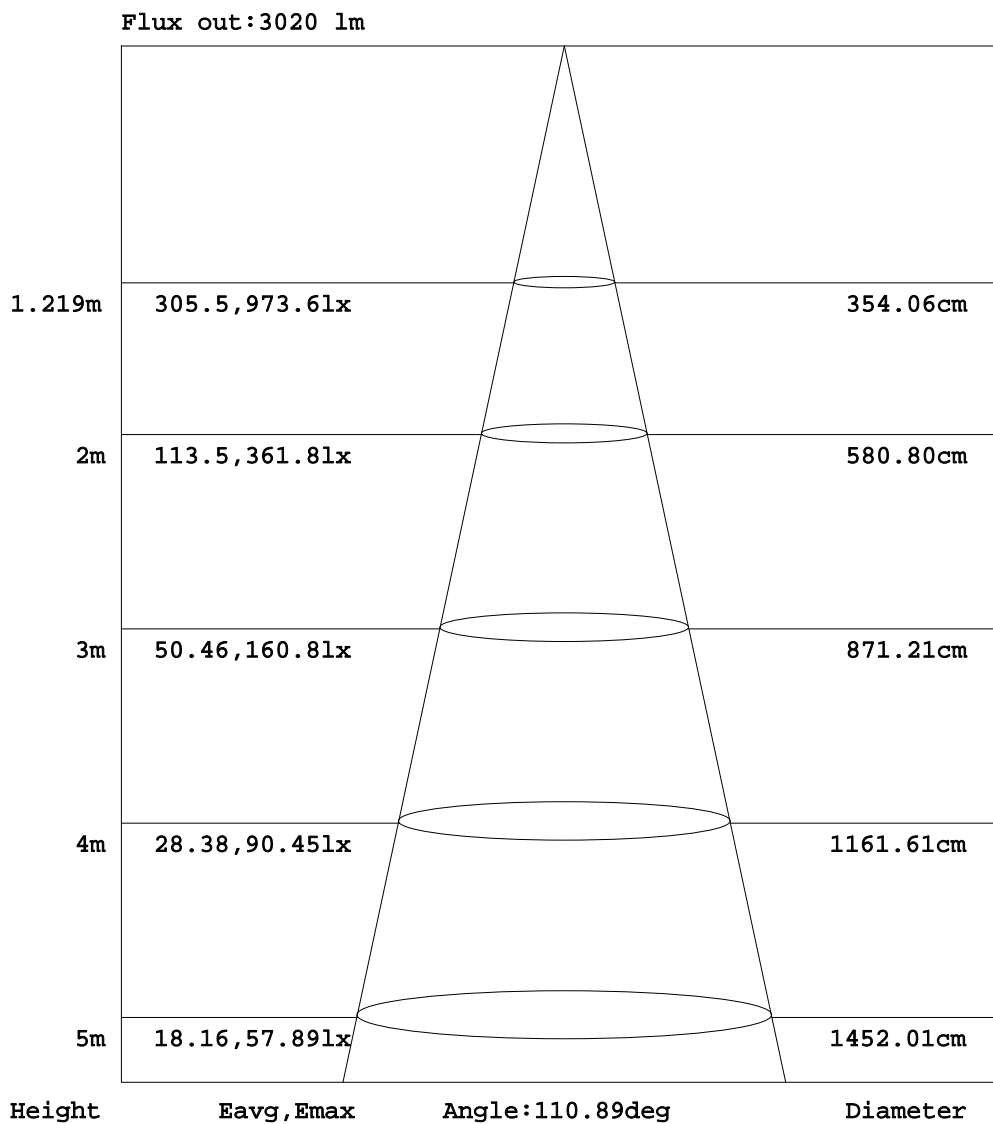
%lamp = 69.5%



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2021-04-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
Humidity:65.0%  
Test Distance:8.800m [K=1.0000]  
Remarks:

## AAI Figure



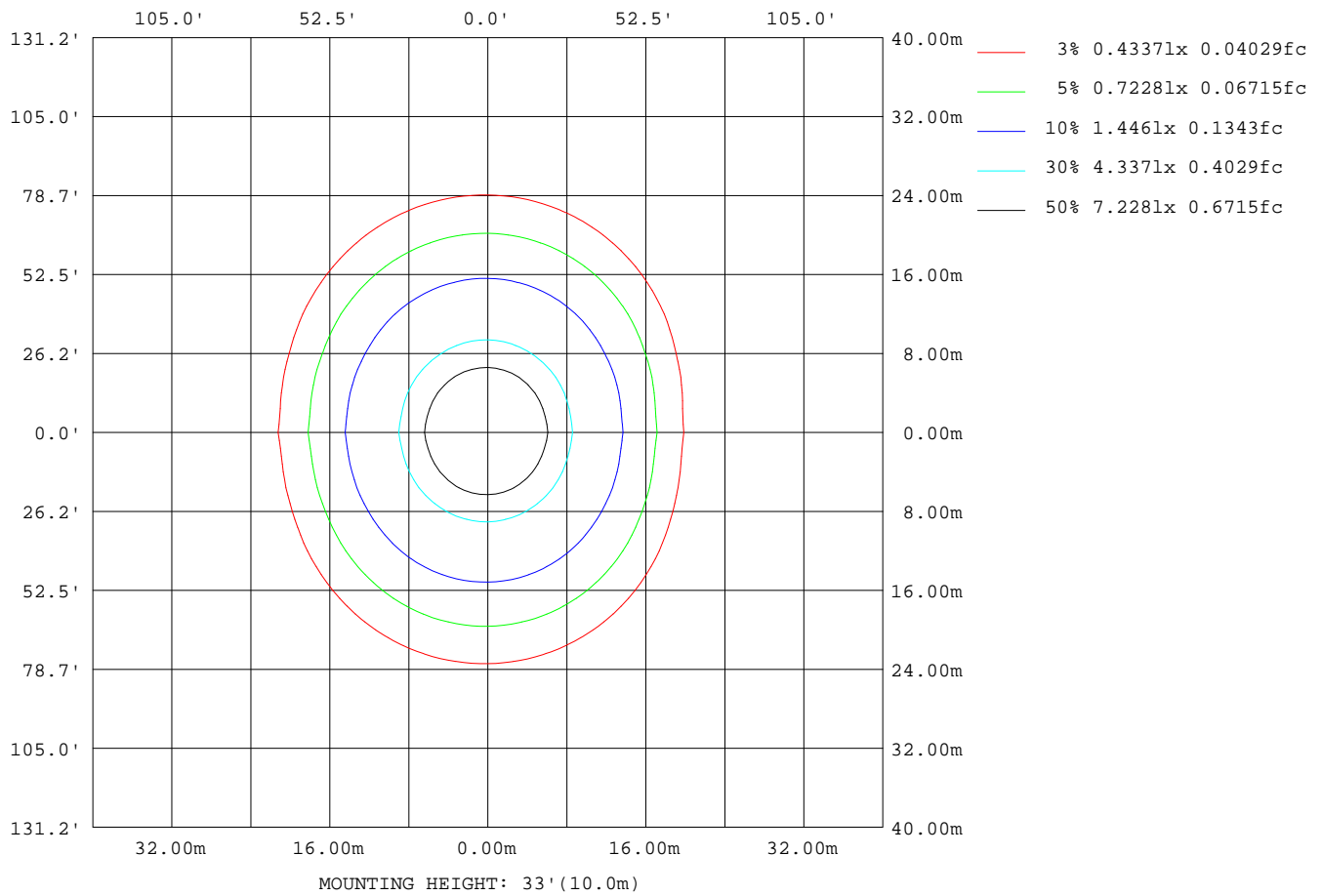
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2021-04-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
 Humidity: 65.0%  
 Test Distance: 8.800m [K=1.0000]  
 Remarks:



## ISOLUX DIAGRAM



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DAMIN  
Test Date: 2021-04-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
Humidity: 65.0%  
Test Distance: 8.800m [K=1.0000]  
Remarks:

## LED Avg.L Report

Test:U:120.4V I:0.3413A P:40.97W PF:0.9973 Lamp Flux:4807x1 lm		
NAME: MRS4-40/D10/U/50	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	PROTECTION ANGLE:

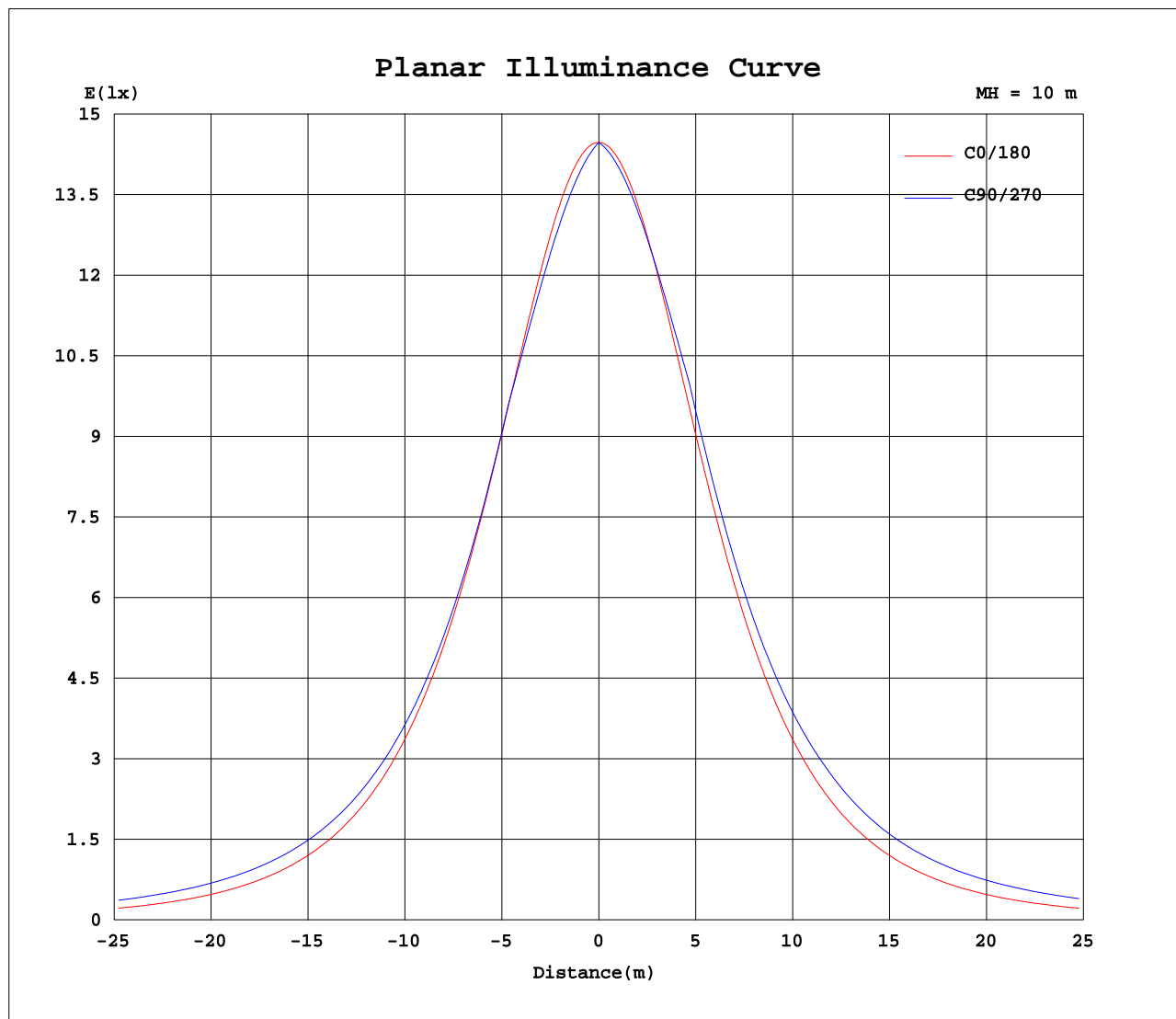
AvgL	cd/m2
L_0~180(65)av	18397
L_0~180(75)av	14825
L_0~180(85)av	6910
L_90~270(65)av	28896
L_90~270(75)av	38132
L_90~270(85)av	89892
L_45(65)av	24282
L_45(75)av	29474
L_45(85)av	61945

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2021-04-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
Humidity:65.0%  
Test Distance:8.800m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DAMIN  
Test Date: 2021-04-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.290  
Humidity: 65.0%  
Test Distance: 8.800m [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: 25.3DEG  
Operators: DAMIN  
Test Date: 2021-04-29

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:8.800m [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: 25.3DEG  
Operators: DAMIN  
Test Date: 2021-04-29

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:8.800m [K=1.0000]
Remarks:

```

## LUMINOUS DISTRIBUTION INTENSITY DATA

UNIT: cd

[illegible]

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:8.800m [K=1.0000]
Remarks:

```