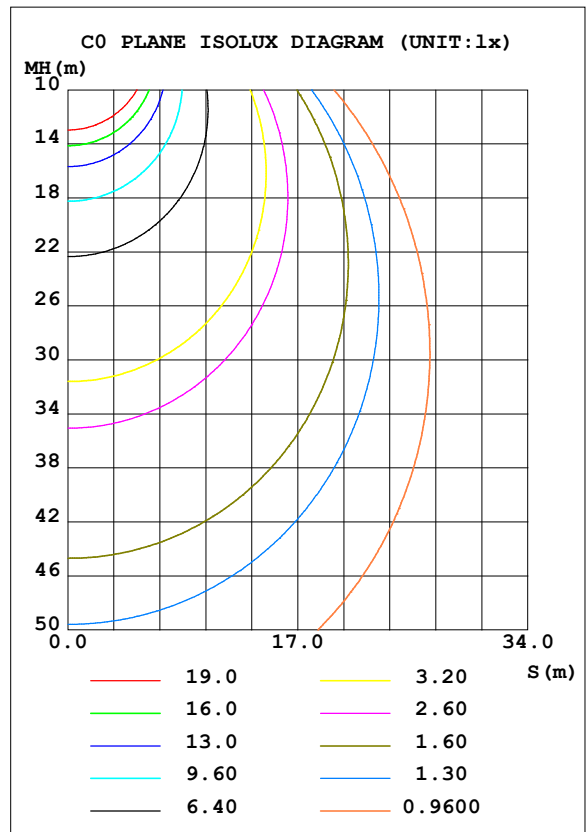
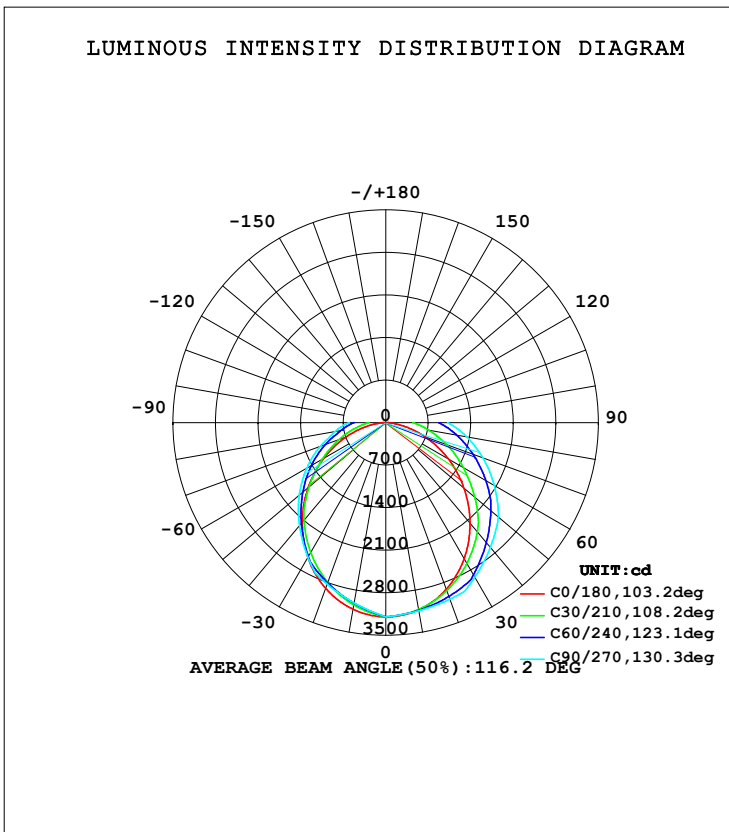


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.4V I:0.6667A P:80 W PF:0.9954 Lamp Flux:10811x1 lm		
NAME: ASD-LVP-FS-4D8050	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD lighting corp.	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 135.14 lm/W			
MODEL	ASD-LVP-FS-4D8050	I <sub>max</sub> (cd)	3196	S/MH (C0/180)	1.20
NOMINAL POWER (W)	80	LOR (%)	100.0	S/MH (C90/270)	1.20
RATED VOLTAGE (V)	120-277	TOTAL FLUX (lm)	10811	η UP, DN (C0-180)	0.0, 54.6
NOMINAL FLUX (lm)	10811	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 45.4
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	120	η down (%)	100.0	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2019-07-01

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:

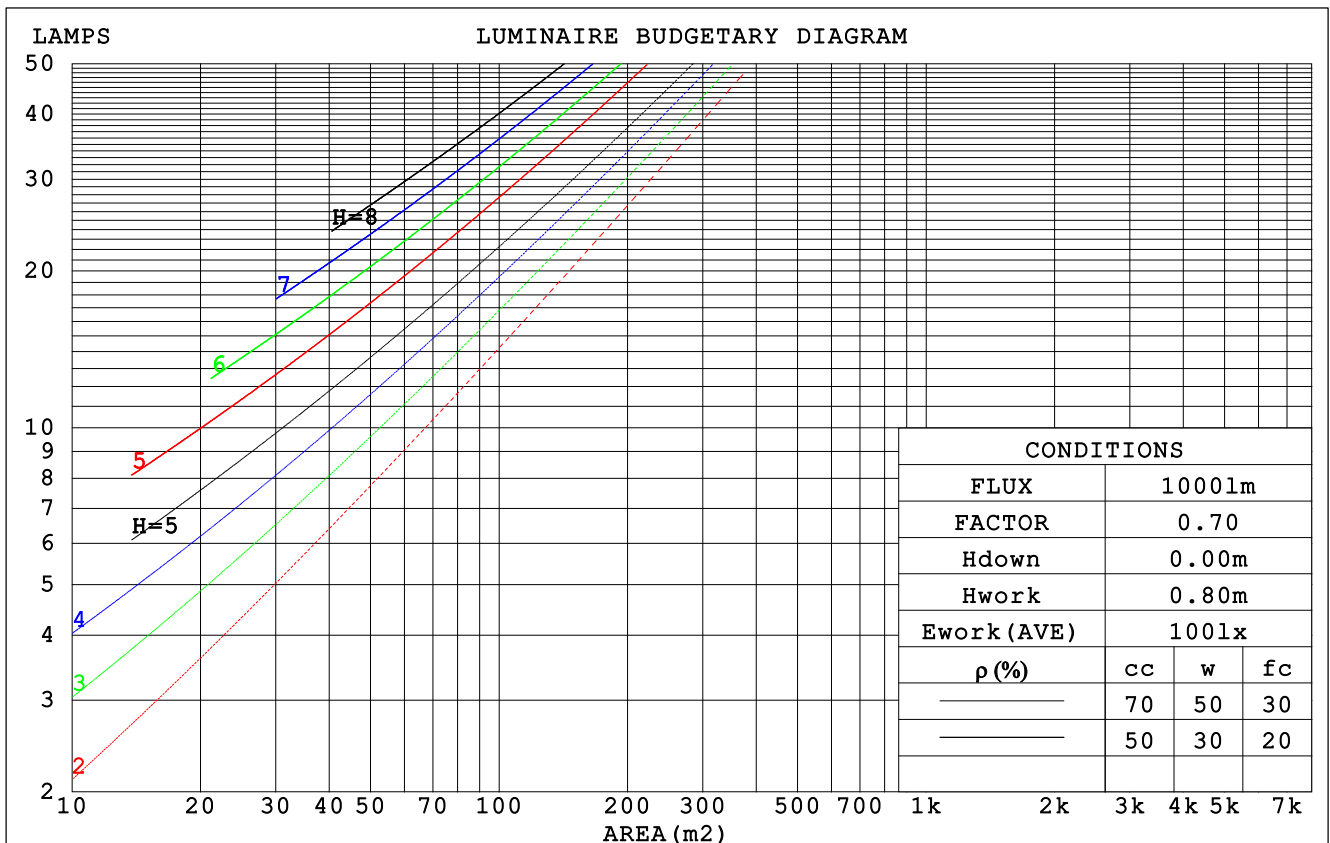
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum,lamp
5	3179	3170	3169	3166	3175	3120	3103	3123	0- 5	75.70	75.70	0.76,0.76
10	3126	3127	3143	3119	3117	3027	3011	3033	5- 10	222.8	298.5	2.98,2.98
15	3038	3066	3117	3053	3026	2917	2919	2926	10- 15	360.9	659.4	6.59,6.59
20	2916	2989	3090	2973	2901	2794	2827	2806	15- 20	486.7	1146	11.4,11.4
25	2763	2899	3064	2877	2746	2657	2735	2670	20- 25	597.4	1743	17.4,17.4
30	2583	2797	2935	2772	2561	2512	2560	2524	25- 30	688.4	2432	24.3,24.3
35	2380	2662	2807	2631	2359	2341	2385	2352	30- 35	753.2	3185	31.8,31.8
40	2158	2469	2678	2438	2140	2127	2210	2138	35- 40	793.2	3978	39.7,39.7
45	1924	2273	2550	2244	1908	1916	2035	1923	40- 45	809.8	4788	47.8,47.8
50	1682	2082	2421	2052	1670	1709	1860	1713	45- 50	804.9	5593	55.9,55.9
55	1434	1896	2242	1865	1425	1509	1682	1508	50- 55	779.5	6373	63.6,63.6
60	1186	1712	2062	1682	1181	1316	1504	1312	55- 60	734.4	7107	71,71
65	937.3	1509	1883	1479	937.4	1130	1326	1124	60- 65	674.0	7781	77.7,77.7
70	693.3	1319	1703	1288	698.5	954.0	1148	946.7	65- 70	602.0	8383	83.7,83.7
75	461.1	1142	1524	1111	469.9	787.6	969.8	779.2	70- 75	522.4	8905	88.9,88.9
80	250.6	977.7	1355	946.5	261.9	635.4	848.0	625.7	75- 80	441.5	9347	93.3,93.3
85	89.74	826.5	1186	800.3	100.9	521.8	726.2	510.1	80- 85	366.9	9714	97,97
90	29.86	683.9	1018	662.6	41.70	413.4	604.3	399.8	85- 90	299.3	10013	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:2019-07-01

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 $\gamma$  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	1.00
1.0	1.01	.95	.91	.98	.93	.89	.94	.90	.86	.90	.87	.84	.86	.84	.81	.79
2.0	.87	.79	.72	.85	.77	.71	.81	.75	.70	.78	.73	.68	.74	.70	.66	.64
3.0	.75	.67	.59	.74	.66	.59	.71	.64	.58	.68	.62	.57	.65	.60	.56	.53
4.0	.67	.57	.50	.65	.56	.50	.63	.55	.49	.60	.54	.48	.58	.52	.47	.45
5.0	.59	.50	.43	.58	.49	.42	.56	.48	.42	.54	.47	.41	.52	.46	.41	.39
6.0	.53	.44	.37	.52	.43	.37	.51	.43	.37	.49	.42	.36	.47	.41	.36	.34
7.0	.48	.39	.33	.48	.39	.33	.46	.38	.32	.44	.37	.32	.43	.37	.32	.30
8.0	.44	.35	.29	.43	.35	.29	.42	.34	.29	.41	.34	.29	.40	.33	.28	.26
9.0	.40	.32	.26	.40	.32	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.24
10.0	.37	.29	.24	.37	.29	.24	.36	.29	.24	.35	.28	.23	.34	.28	.23	.22



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:  
 Test Date:2019-07-01

$\gamma$  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

$\rho_{cc}$	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						Wall Exitance Coefficients (WEC)									
0.0																
1.0	.373	.212	.067	.366	.209	.066	.353	.202	.065	.340	.196	.063	.329	.190	.061	
2.0	.329	.180	.055	.322	.178	.055	.310	.173	.054	.299	.168	.053	.289	.164	.052	
3.0	.295	.157	.047	.289	.155	.047	.278	.151	.046	.269	.147	.045	.259	.144	.044	
4.0	.267	.139	.041	.262	.137	.040	.252	.134	.040	.244	.131	.039	.235	.128	.039	
5.0	.243	.124	.036	.239	.123	.036	.231	.120	.035	.223	.118	.035	.216	.115	.035	
6.0	.224	.112	.032	.220	.111	.032	.212	.109	.032	.205	.107	.031	.199	.105	.031	
7.0	.207	.102	.029	.203	.101	.029	.197	.099	.029	.190	.098	.028	.185	.096	.028	
8.0	.192	.094	.026	.189	.093	.026	.183	.091	.026	.177	.090	.026	.172	.088	.026	
9.0	.179	.087	.024	.176	.086	.024	.171	.085	.024	.166	.083	.024	.161	.082	.024	
10.0	.168	.081	.022	.165	.080	.022	.161	.079	.022	.156	.078	.022	.152	.076	.022	

$\rho_{cc}$	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						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	.156	.129	.158	.134	.111	.108	.092	.077	.062	.053	.045	.020	.017	.014	
2.0	.177	.132	.094	.152	.113	.081	.104	.078	.056	.060	.046	.033	.019	.015	.011	
3.0	.169	.114	.071	.145	.099	.061	.100	.069	.043	.058	.040	.025	.018	.013	.008	
4.0	.161	.101	.056	.138	.088	.048	.095	.061	.034	.055	.036	.020	.018	.012	.007	
5.0	.153	.091	.045	.132	.079	.039	.091	.055	.028	.053	.032	.016	.017	.011	.005	
6.0	.146	.083	.038	.125	.072	.033	.086	.050	.023	.050	.030	.014	.016	.010	.005	
7.0	.138	.076	.032	.119	.066	.028	.082	.046	.020	.048	.027	.012	.015	.009	.004	
8.0	.132	.070	.028	.113	.061	.024	.078	.043	.017	.046	.025	.010	.015	.008	.003	
9.0	.125	.065	.025	.108	.057	.021	.075	.040	.015	.044	.023	.009	.014	.008	.003	
10.0	.119	.061	.022	.103	.053	.019	.071	.037	.014	.042	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25DEG  
Operators:  
Test Date:2019-07-01

$\gamma$  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:

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	20.2	21.8	20.5	22.0	22.2	22.6	24.2	22.8	24.4	24.6
3H	21.6	23.1	21.9	23.3	23.5	25.1	26.6	25.4	26.8	27.0
4H	22.1	23.5	22.4	23.8	24.0	26.4	27.8	26.7	28.1	28.4
6H	22.4	23.7	22.7	24.0	24.3	27.9	29.2	28.2	29.5	29.8
8H	22.5	23.8	22.8	24.1	24.4	28.7	30.0	29.0	30.3	30.6
12H	22.5	23.8	22.9	24.1	24.4	29.6	30.8	29.9	31.1	31.5
4H 2H	21.4	22.8	21.7	23.1	23.4	23.1	24.6	23.4	24.8	25.1
3H	23.1	24.3	23.4	24.6	24.9	25.9	27.2	26.2	27.5	27.8
4H	23.8	24.9	24.2	25.3	25.6	27.4	28.6	27.8	28.9	29.3
6H	24.3	25.3	24.7	25.7	26.1	29.1	30.2	29.5	30.6	30.9
8H	24.5	25.4	24.9	25.8	26.2	30.1	31.1	30.5	31.4	31.8
12H	24.5	25.5	25.0	25.9	26.3	31.1	32.1	31.6	32.5	32.9
8H 4H	24.9	25.8	25.3	26.2	26.6	27.8	28.8	28.2	29.1	29.5
6H	25.8	26.6	26.2	27.0	27.5	29.8	30.6	30.2	31.0	31.5
8H	26.2	26.9	26.6	27.3	27.8	31.0	31.7	31.4	32.1	32.6
12H	26.5	27.1	26.9	27.6	28.0	32.3	33.0	32.8	33.4	33.9
12H 4H	25.2	26.1	25.6	26.5	26.9	27.8	28.7	28.2	29.1	29.5
6H	26.4	27.1	26.8	27.5	28.0	29.9	30.7	30.4	31.1	31.6
8H	26.9	27.6	27.4	28.0	28.5	31.2	31.8	31.7	32.3	32.8
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 10013 lm Total Lamp Luminous Flux. (8log(F/F0) = 8.0)

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25DEG  
Operators:  
Test Date:2019-07-01

$\gamma$  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:

## 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) $k(RI) \times RCR = 5$									
$k = 0.60$	55	43	36	54	43	36	53	42	35	29
0.80	65	52	45	64	52	44	62	51	44	37
1.00	73	61	53	71	60	53	69	62	52	44
1.25	80	68	60	78	67	60	75	66	59	51
1.50	85	74	66	83	73	65	80	71	64	56
2.00	92	82	75	90	81	74	86	78	72	64
2.50	96	87	80	93	85	79	89	83	77	68
3.00	99	91	85	97	90	84	93	87	82	72
4.00	103	97	91	101	95	90	97	91	87	78
5.00	106	100	95	104	98	94	99	95	91	81
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: 2019-07-01

$\gamma$  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:

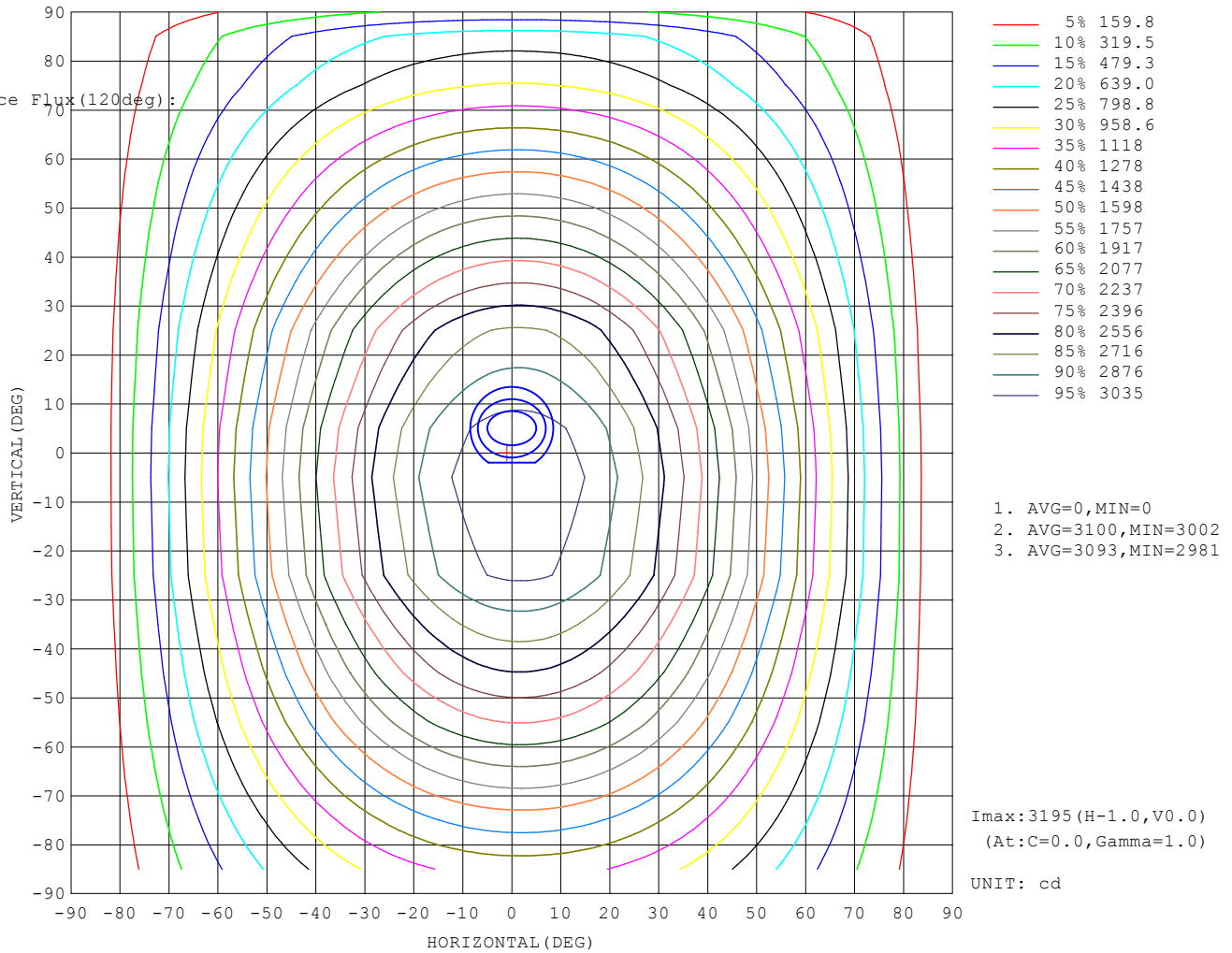
### ISOCANDELA DIAGRAM

Conical surface Flux(90deg):

4788.1 lm  
 %lum = 47.8%  
 %lamp = 47.8%

Conical surface Flux(120deg):

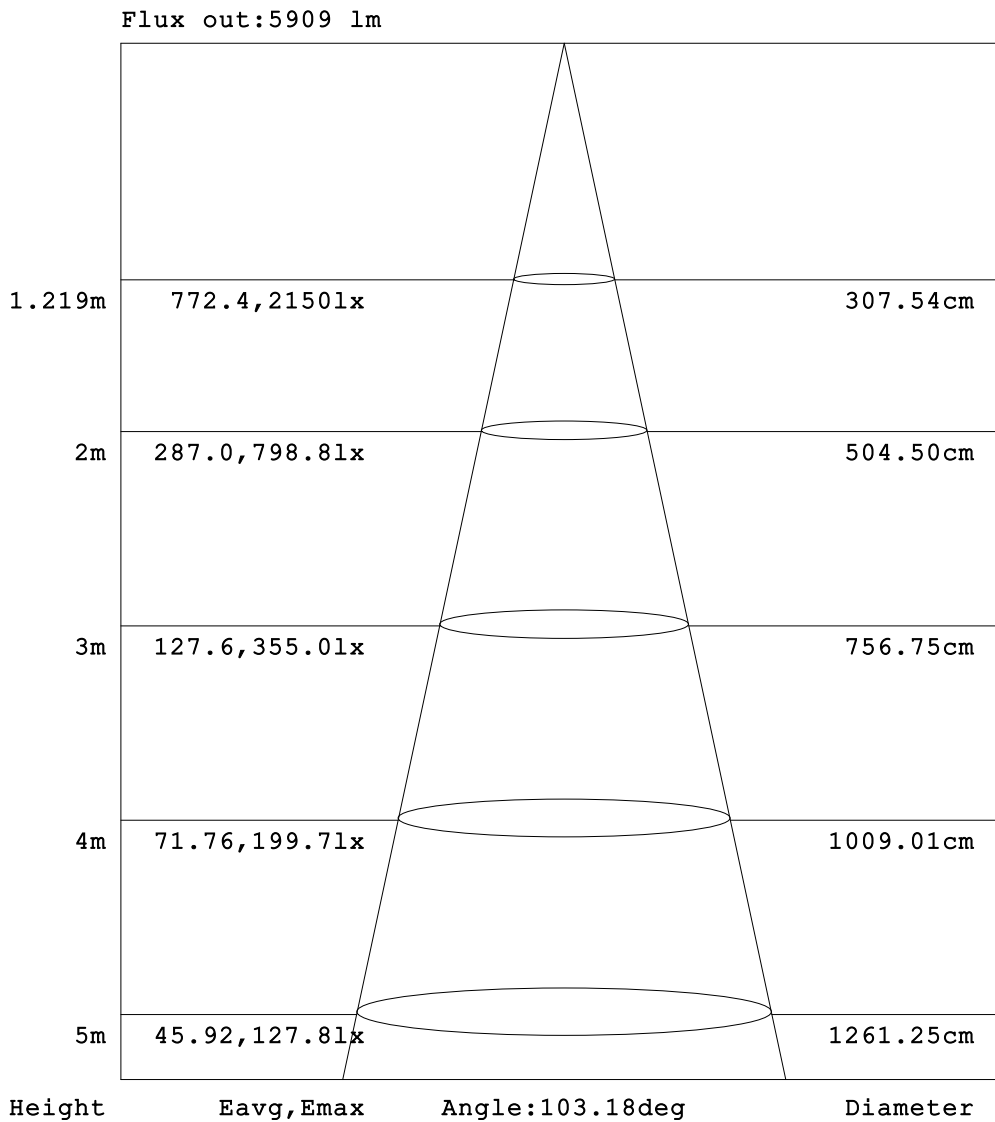
7107 lm  
 %lum = 71.0%  
 %lamp = 71.0%



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2019-07-01

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**



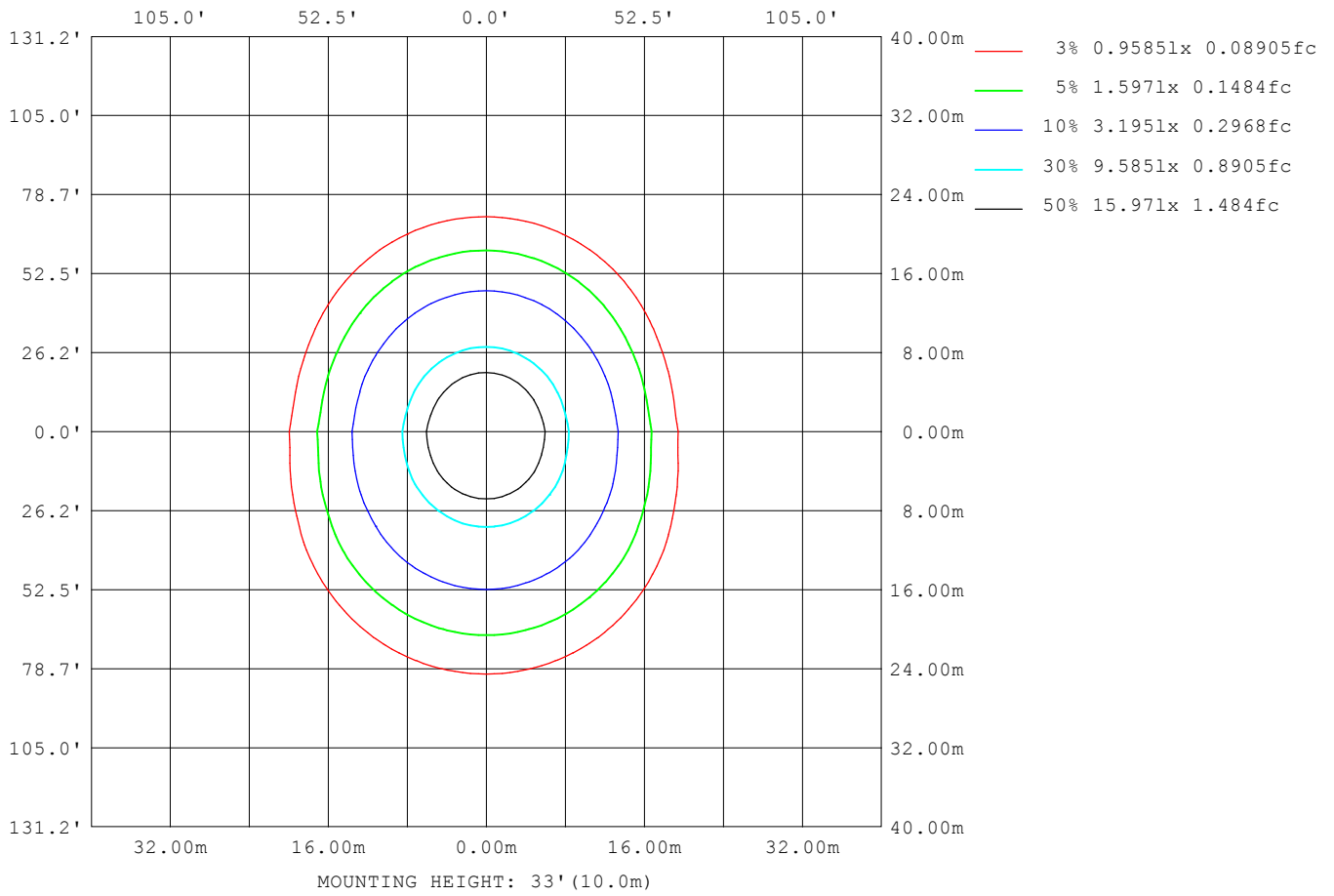
**Note:**The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:  
 Test Date:2019-07-01

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  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2019-07-01

$\gamma$  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:

## LED Avg.L Report

Test:U:120.4V I:0.6667A P:80 W PF:0.9954 Lamp Flux:10811x1 lm		
NAME: ASD-LVP-FS-4D8050	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD lighting corp.	SUR.:	PROTECTION ANGLE:

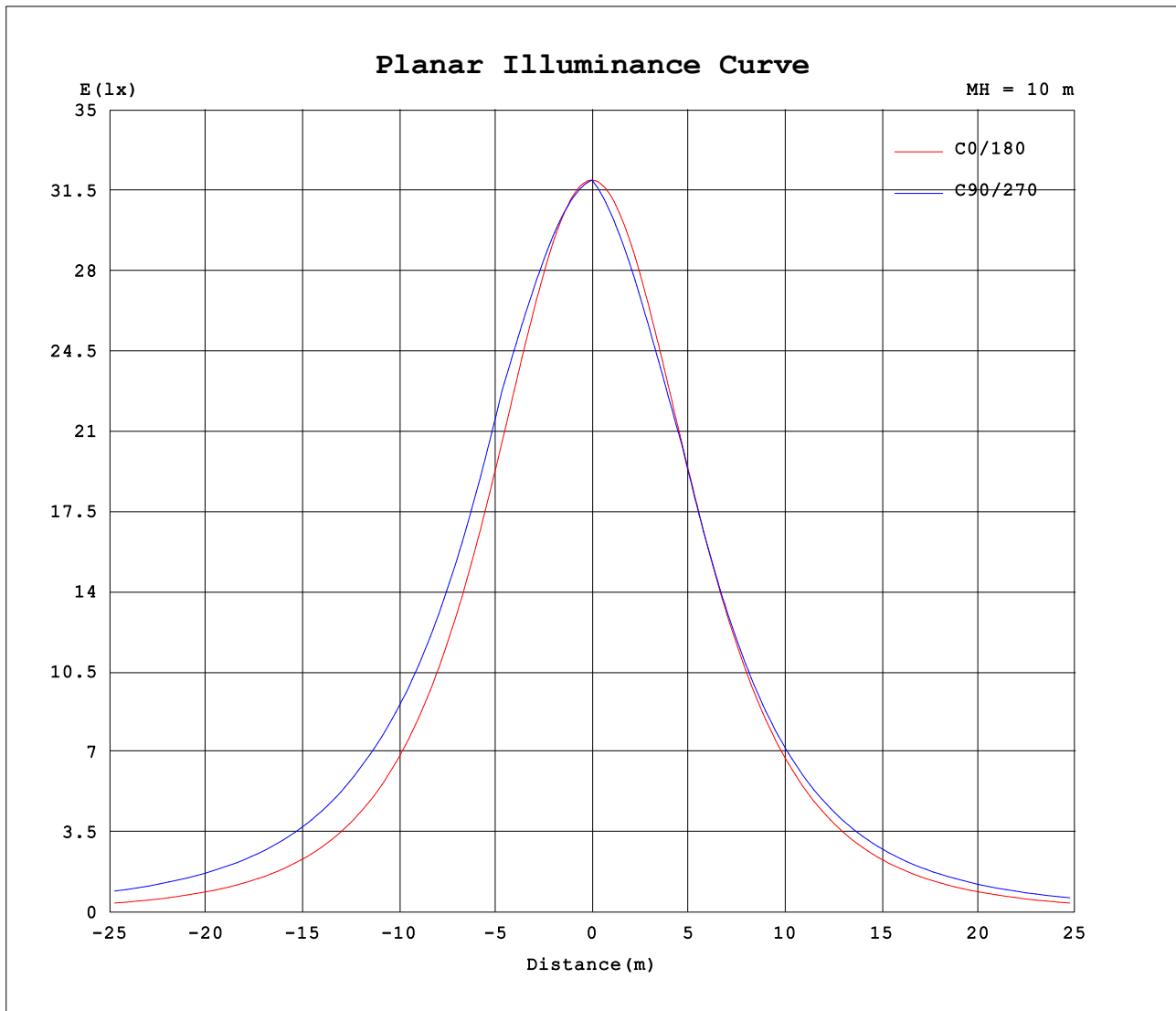
AvgL	cd/m2
L_0~180 (65) av	7648
L_0~180 (75) av	6202
L_0~180 (85) av	3771
L_90~270 (65) av	13090
L_90~270 (75) av	16610
L_90~270 (85) av	37833
L_45 (65) av	10693
L_45 (75) av	12722
L_45 (85) av	26297

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25DEG  
Operators:  
Test Date:2019-07-01

$\gamma$  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:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators:  
 Test Date: 2019-07-01

$\gamma$  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:







