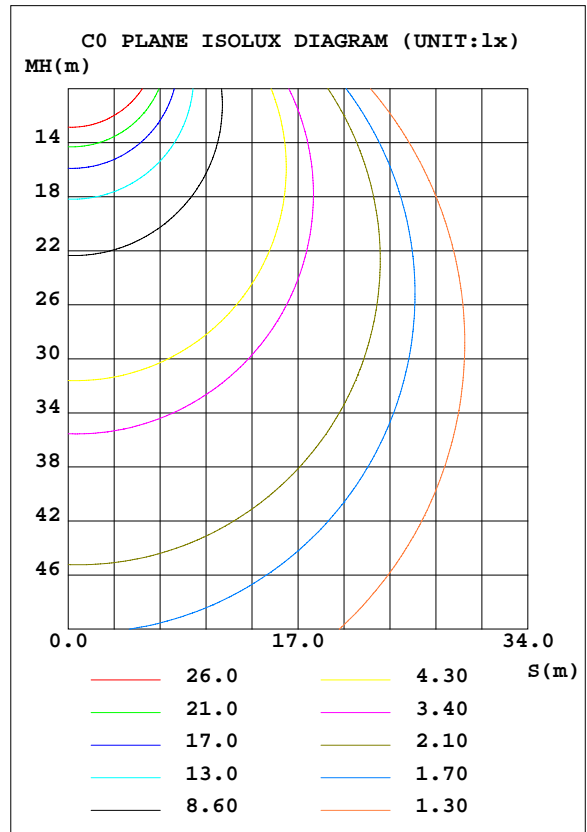
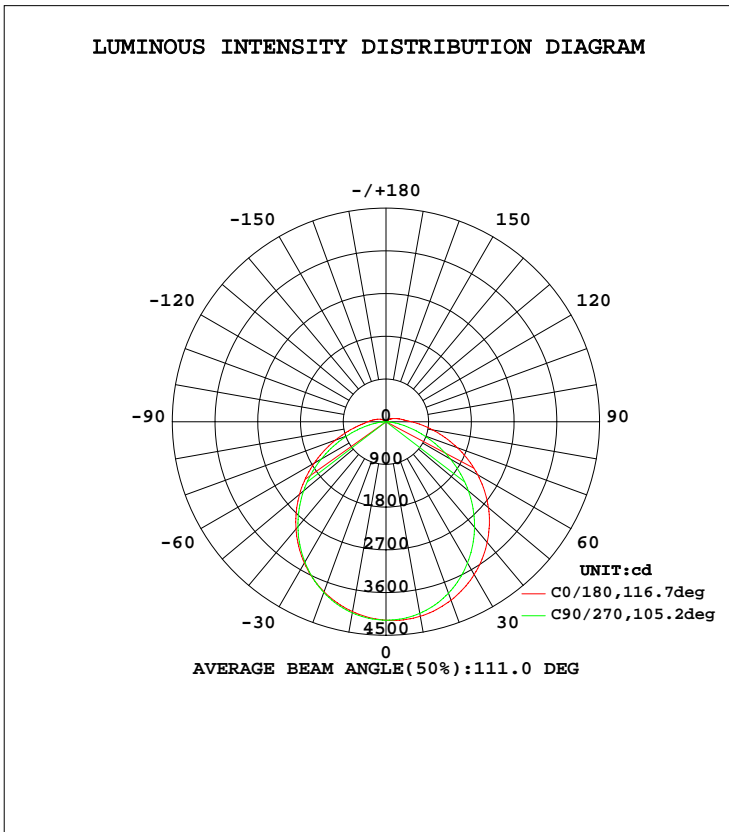


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.4V I:0.9042A P:108.5W PF:0.9966 Lamp Flux:12757.2x1 lm		
NAME: ASD Lighting Corp	TYPE:LED	WEIGHT:
DIM.: 2400*90*80mm	SPEC.:	SERIAL No.:
MFR.: ASD Lighting Corp	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 151.2 lm/W			
MODEL ASD-LVP2SM-8A120AC-20EM	I <sub>max</sub> (cd)	4216	S/MH(C0/180)	1.32	
NOMINAL POWER(W)	120	LOR(%)	100.0	S/MH(C90/270)	1.23
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	18144	η UP, DN(C0-180)	2.1, 48.8
NOMINAL FLUX(lm)	18144	CIE CLASS	DIRECT	η UP, DN(C180-360)	2.0, 47.1
LAMPS INSIDE	1	η up(%)	4.1	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120.4	η down(%)	95.9	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2022-04-07

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.100m [K=1.0000]  
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	ℓlum,lamp
10	4161	4203	4099	4023	4062	4005	4089	4212	0- 10	395.6	395.6	3.1,3.1
20	4002	4065	3845	3731	3814	3683	3829	4112	10- 20	1133	1528	12,12
30	3716	3779	3436	3298	3439	3230	3418	3878	20- 30	1715	3243	25.4,25.4
40	3318	3367	2902	2713	2952	2672	2888	3507	30- 40	2061	5304	41.6,41.6
50	2817	2848	2269	2036	2377	2040	2266	3000	40- 50	2127	7431	58.2,58.2
60	2230	2249	1565	1344	1749	1386	1578	2398	50- 60	1912	9343	73.2,73.2
70	1600	1604	858.7	741.9	1136	800.2	881.5	1746	60- 70	1474	10817	84.8,84.8
80	1002	987.2	294.8	319.8	648.0	365.3	315.0	1103	70- 80	937.6	11754	92.1,92.1
90	541.0	493.3	3.854	169.4	385.6	187.9	9.992	577.7	80- 90	485.3	12240	95.9,95.9
100	320.6	223.6	1.924	91.51	253.1	105.8	6.806	249.9	90-100	236.5	12476	97.8,97.8
110	204.9	132.5	2.873	47.90	161.6	59.21	6.835	135.9	100-110	131.0	12607	98.8,98.8
120	126.9	76.68	4.064	24.99	97.06	32.87	7.490	68.95	110-120	73.29	12680	99.4,99.4
130	72.93	37.91	5.089	14.72	54.60	19.59	8.481	36.88	120-130	38.16	12719	99.7,99.7
140	37.95	21.30	6.397	11.12	29.25	13.89	9.589	21.03	130-140	19.25	12738	99.8,99.8
150	18.83	12.95	7.913	9.844	17.10	11.74	10.45	13.13	140-150	9.752	12748	99.9,99.9
160	11.73	10.45	9.247	9.533	12.90	10.87	11.41	10.98	150-160	5.391	12753	100,100
170	10.76	9.823	10.31	10.96	11.70	10.68	12.24	10.74	160-170	3.065	12756	100,100
180	11.09	11.45	11.30	11.06	11.11	11.44	11.55	10.97	170-180	1.050	12757	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

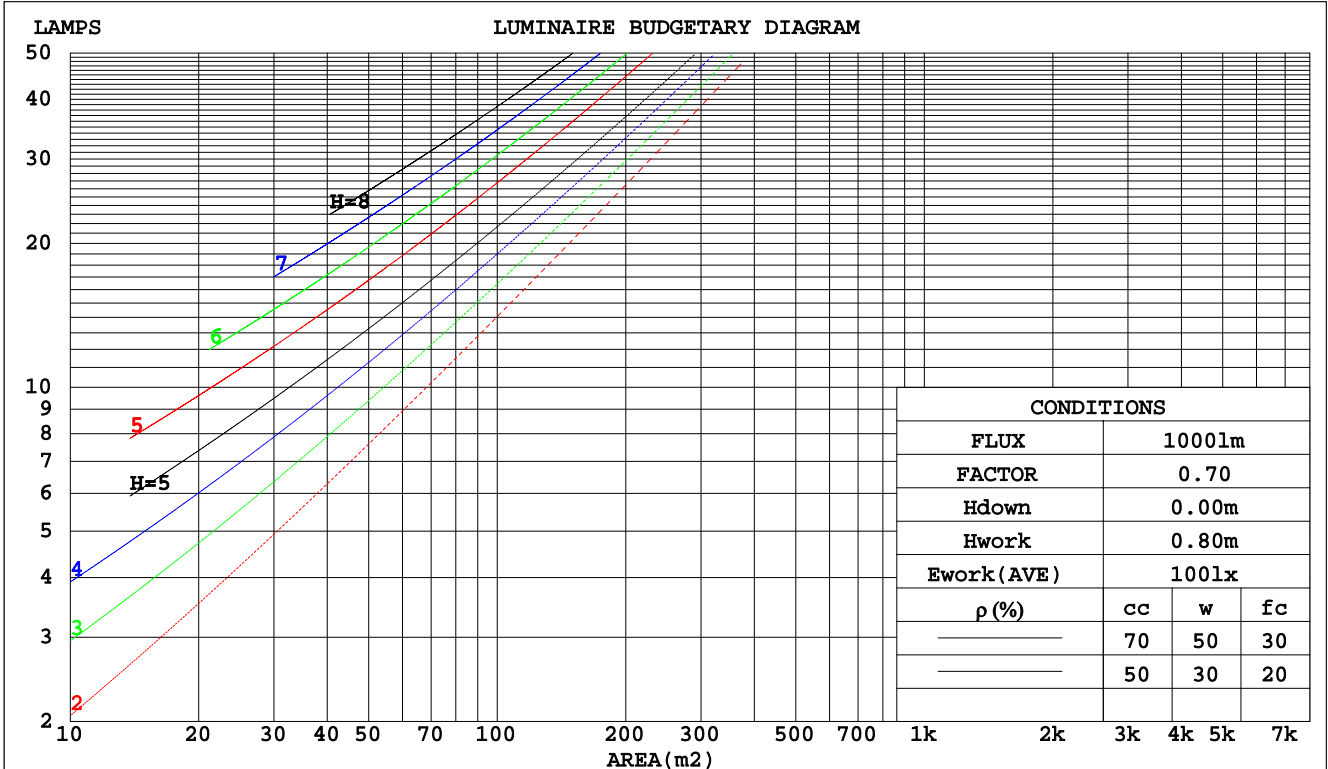
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2022-04-07

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.100m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:120.4V I:0.9042A P:108.5W PF:0.9966 Lamp Flux:12757.2x1 lm		
NAME: ASD Lighting Corp	TYPE:LED	WEIGHT:
DIM.: 2400*90*80mm	SPEC.:	SERIAL No.:
MFR.: ASD Lighting Corp	SUR.:	PROTECTION 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	1.18	1.18	1.18	1.15	1.15	1.15	1.09	1.09	1.09	1.03	1.03	1.03	.98	.98	.98	.96
1.0	1.02	.97	.93	.99	.95	.91	.94	.91	.88	.89	.87	.84	.85	.83	.81	.78
2.0	.88	.81	.75	.86	.80	.74	.82	.76	.72	.78	.73	.70	.74	.71	.67	.65
3.0	.78	.69	.62	.76	.68	.62	.72	.65	.60	.69	.63	.58	.66	.61	.57	.54
4.0	.69	.60	.53	.67	.59	.52	.64	.57	.51	.61	.55	.50	.58	.53	.49	.46
5.0	.61	.52	.45	.60	.51	.45	.57	.50	.44	.55	.48	.43	.53	.47	.42	.40
6.0	.55	.46	.40	.54	.45	.39	.52	.44	.39	.50	.43	.38	.48	.42	.37	.35
7.0	.50	.41	.35	.49	.41	.35	.47	.40	.34	.45	.39	.34	.43	.38	.33	.31
8.0	.46	.37	.31	.45	.37	.31	.43	.36	.30	.41	.35	.30	.40	.34	.30	.28
9.0	.42	.33	.28	.41	.33	.28	.40	.32	.27	.38	.32	.27	.37	.31	.27	.25
10.0	.39	.31	.25	.38	.30	.25	.37	.30	.25	.35	.29	.25	.34	.28	.24	.22



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2022-04-07

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:

WEC AND CCEC

Test:U:120.4V I:0.9042A P:108.5W PF:0.9966 Lamp Flux:12757.2x1 lm		
NAME: ASD Lighting Corp	TYPE:LED	WEIGHT:
DIM.: 2400*90*80mm	SPEC.:	SERIAL No.:
MFR.: ASD Lighting Corp	SUR.:	PROTECTION ANGLE:

ρcc	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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.331	.188	.060	.322	.184	.058	.307	.176	.056	.292	.169	.054	.279	.162	.052	
2.0	.302	.165	.051	.294	.162	.050	.280	.156	.048	.268	.150	.047	.256	.145	.046	
3.0	.276	.147	.044	.269	.144	.043	.257	.139	.042	.245	.134	.041	.234	.130	.040	
4.0	.253	.131	.039	.247	.129	.038	.236	.125	.037	.225	.121	.036	.216	.117	.036	
5.0	.232	.118	.034	.227	.117	.034	.217	.113	.033	.208	.110	.033	.199	.107	.032	
6.0	.215	.108	.031	.210	.106	.031	.201	.103	.030	.193	.100	.029	.185	.097	.029	
7.0	.200	.099	.028	.195	.097	.028	.187	.095	.027	.180	.092	.027	.173	.090	.026	
8.0	.186	.091	.026	.182	.090	.025	.175	.087	.025	.168	.085	.025	.162	.083	.024	
9.0	.174	.084	.024	.171	.083	.023	.164	.081	.023	.158	.079	.023	.152	.077	.022	
10.0	.164	.078	.022	.161	.078	.022	.155	.076	.021	.149	.074	.021	.144	.072	.021	

ρcc	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						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.221	.221	.221	.189	.189	.189	.129	.129	.129	.074	.074	.074	.024	.024	.024	
1.0	.213	.187	.164	.182	.161	.141	.125	.110	.098	.072	.064	.057	.023	.021	.018	
2.0	.205	.163	.128	.176	.141	.111	.120	.097	.077	.069	.057	.045	.022	.018	.015	
3.0	.197	.146	.105	.169	.126	.091	.116	.087	.064	.067	.051	.038	.022	.017	.012	
4.0	.189	.133	.089	.162	.115	.078	.112	.080	.055	.065	.047	.032	.021	.015	.011	
5.0	.182	.122	.079	.156	.106	.068	.108	.074	.048	.062	.043	.029	.020	.014	.009	
6.0	.175	.114	.071	.150	.099	.062	.104	.069	.044	.060	.041	.026	.019	.013	.009	
7.0	.168	.107	.065	.144	.093	.057	.100	.065	.040	.058	.038	.024	.019	.013	.008	
8.0	.161	.102	.061	.139	.088	.053	.096	.062	.038	.056	.036	.022	.018	.012	.007	
9.0	.155	.097	.057	.134	.084	.050	.093	.059	.035	.054	.035	.021	.017	.011	.007	
10.0	.149	.092	.055	.129	.080	.048	.089	.056	.034	.052	.033	.020	.017	.011	.007	

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2022-04-07

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.100m [K=1.0000]  
 Remarks:

Uncorrected UGR Table

Test:U:120.4V I:0.9042A P:108.5W PF:0.9966 Lamp Flux:12757.2x1 lm										
NAME: ASD Lighting Corp					TYPE:LED			WEIGHT:		
DIM.: 2400*90*80mm					SPEC.:			SERIAL No.:		
MFR.: ASD Lighting Corp					SUR.:			PROTECTION 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	23.1	24.5	23.4	24.8	25.1	21.8	23.3	22.2	23.6	23.9
3H	25.0	26.3	25.3	26.7	27.0	23.1	24.5	23.5	24.8	25.1
4H	25.9	27.2	26.3	27.5	27.9	23.5	24.8	23.9	25.2	25.5
6H	26.8	28.0	27.2	28.4	28.8	23.8	25.0	24.2	25.4	25.8
8H	27.3	28.5	27.7	28.8	29.2	23.9	25.1	24.3	25.4	25.8
12H	27.8	28.9	28.2	29.3	29.7	23.9	25.0	24.3	25.4	25.8
4H 2H	23.7	25.0	24.1	25.3	25.7	22.8	24.1	23.2	24.5	24.8
3H	25.9	27.0	26.3	27.4	27.8	24.4	25.5	24.8	25.9	26.3
4H	27.0	28.0	27.4	28.4	28.8	25.0	26.0	25.4	26.4	26.9
6H	28.0	29.0	28.5	29.4	29.9	25.4	26.4	25.9	26.8	27.3
8H	28.6	29.5	29.1	29.9	30.4	25.6	26.5	26.1	26.9	27.4
12H	29.2	30.0	29.7	30.5	31.0	25.7	26.5	26.2	26.9	27.4
8H 4H	27.3	28.2	27.8	28.6	29.1	25.7	26.6	26.2	27.0	27.5
6H	28.7	29.4	29.2	29.9	30.4	26.5	27.2	27.0	27.7	28.2
8H	29.4	30.0	29.9	30.5	31.1	26.8	27.4	27.3	27.9	28.5
12H	30.2	30.8	30.7	31.3	31.9	27.0	27.6	27.5	28.1	28.6
12H 4H	27.4	28.2	27.8	28.6	29.1	25.9	26.7	26.3	27.1	27.6
6H	28.8	29.4	29.3	29.9	30.5	26.8	27.4	27.3	27.9	28.5
8H	29.6	30.2	30.2	30.7	31.3	27.2	27.8	27.8	28.3	28.9
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.3 / - 0.4				
2.0H	+ 0.2 / - 0.4					+ 0.2 / - 0.6				

CIE Pub.117 Corrected 12757 lm Total Lamp Luminous Flux. (8log(F/F0) = 8.8)

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2022-04-07

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.100m [K=1.0000]  
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:120.4V I:0.9042A P:108.5W PF:0.9966 Lamp Flux:12757.2x1 lm		
NAME: ASD Lighting Corp	TYPE:LED	WEIGHT:
DIM.: 2400*90*80mm	SPEC.:	SERIAL No.:
MFR.: ASD Lighting Corp	SUR.:	PROTECTION ANGLE:

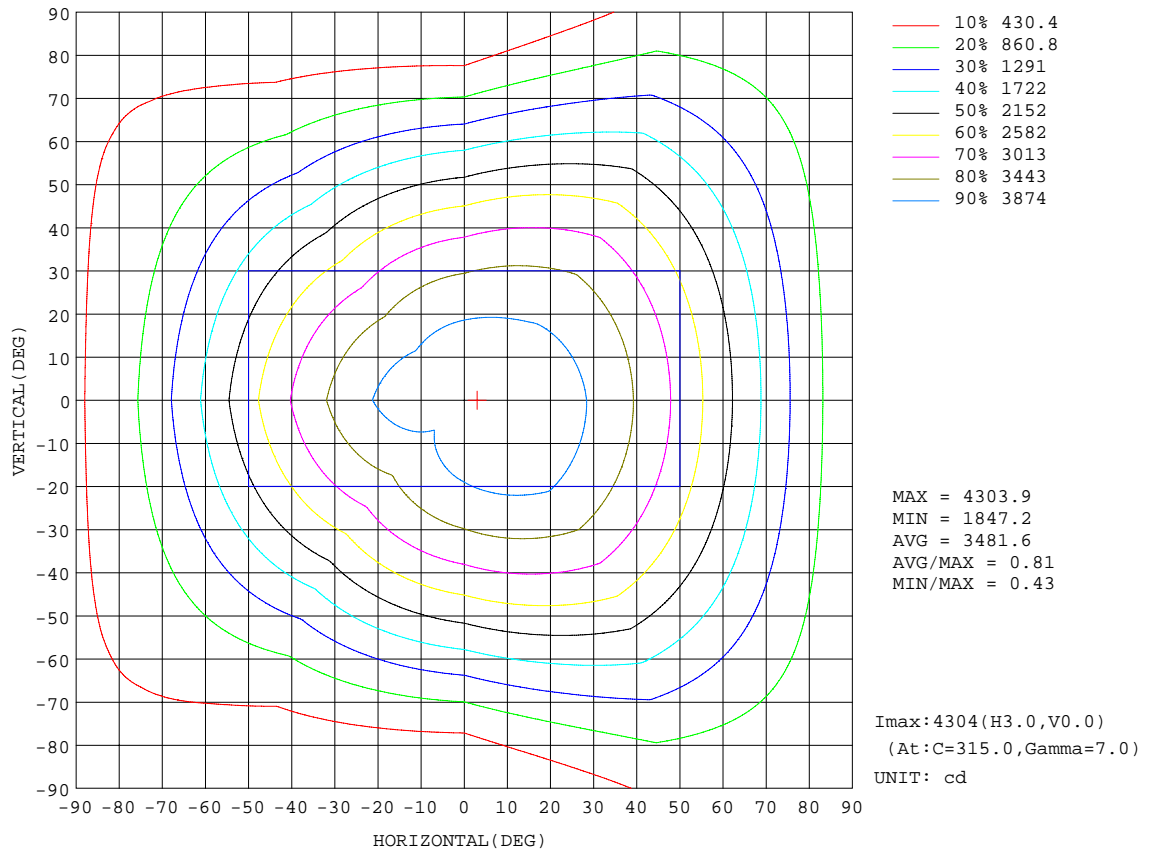
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	56	44	37	55	44	37	53	43	36	30
0.80	65	53	46	64	53	46	62	52	45	38
1.00	74	62	55	72	61	54	70	63	54	46
1.25	81	70	62	79	69	62	76	67	61	53
1.50	86	75	68	84	74	67	80	72	66	58
2.00	92	83	76	90	82	75	86	79	74	65
2.50	96	88	81	94	86	80	90	83	78	69
3.00	100	92	86	97	91	85	93	87	82	73
4.00	104	98	92	101	96	91	96	92	88	78
5.00	106	101	96	104	99	95	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: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2022-04-07

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.100m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

Test:U:120.4V I:0.9042A P:108.5W PF:0.9966 Lamp Flux:12757.2x1 lm		
NAME: ASD Lighting Corp	TYPE:LED	WEIGHT:
DIM.: 2400*90*80mm	SPEC.:	SERIAL No.:
MFR.: ASD Lighting Corp	SUR.:	PROTECTION ANGLE:

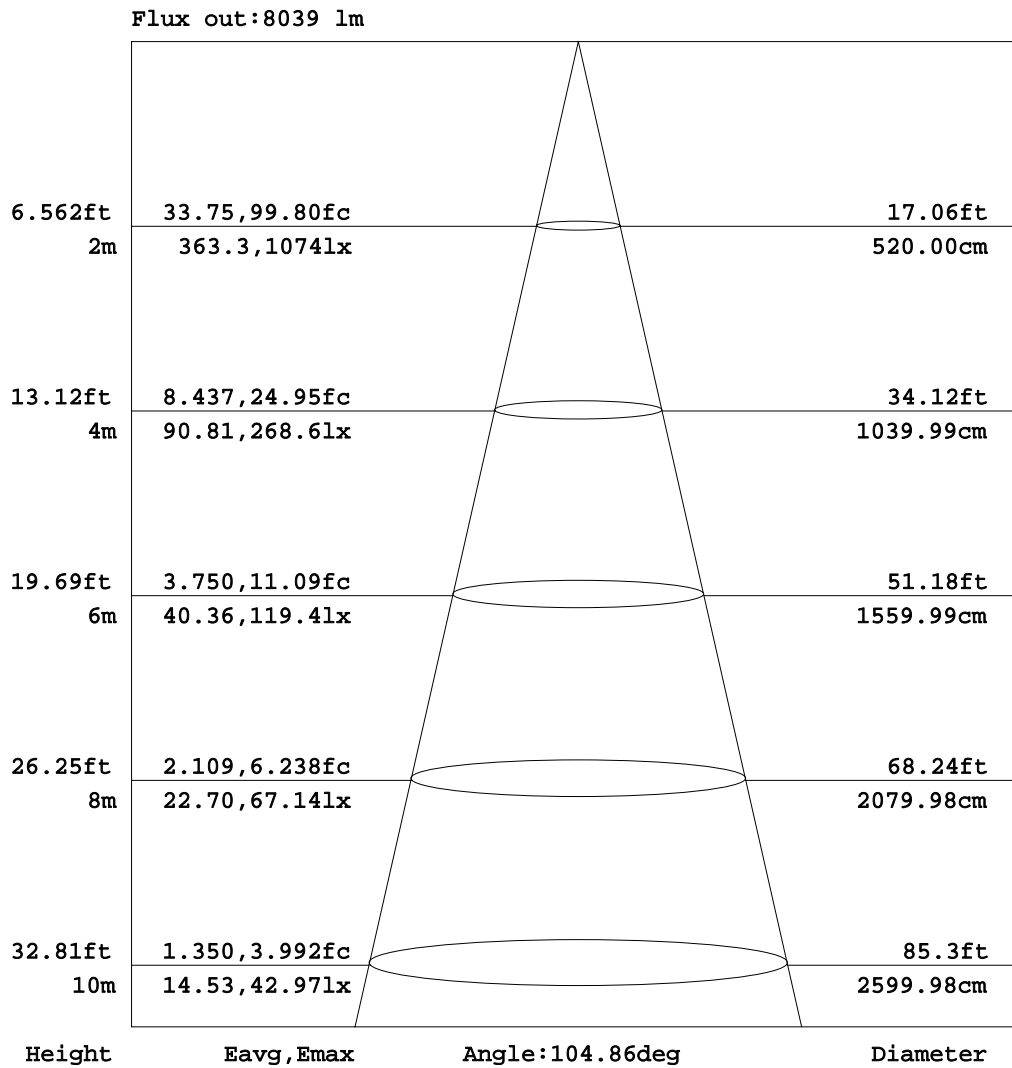


C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2022-04-07

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:

AAI Figure

Test:U:120.4V I:0.9042A P:108.5W PF:0.9966 Lamp Flux:12757.2x1 lm		
NAME: ASD Lighting Corp	TYPE:LED	WEIGHT:
DIM.: 2400*90*80mm	SPEC.:	SERIAL No.:
MFR.: ASD Lighting Corp	SUR.:	PROTECTION ANGLE:



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

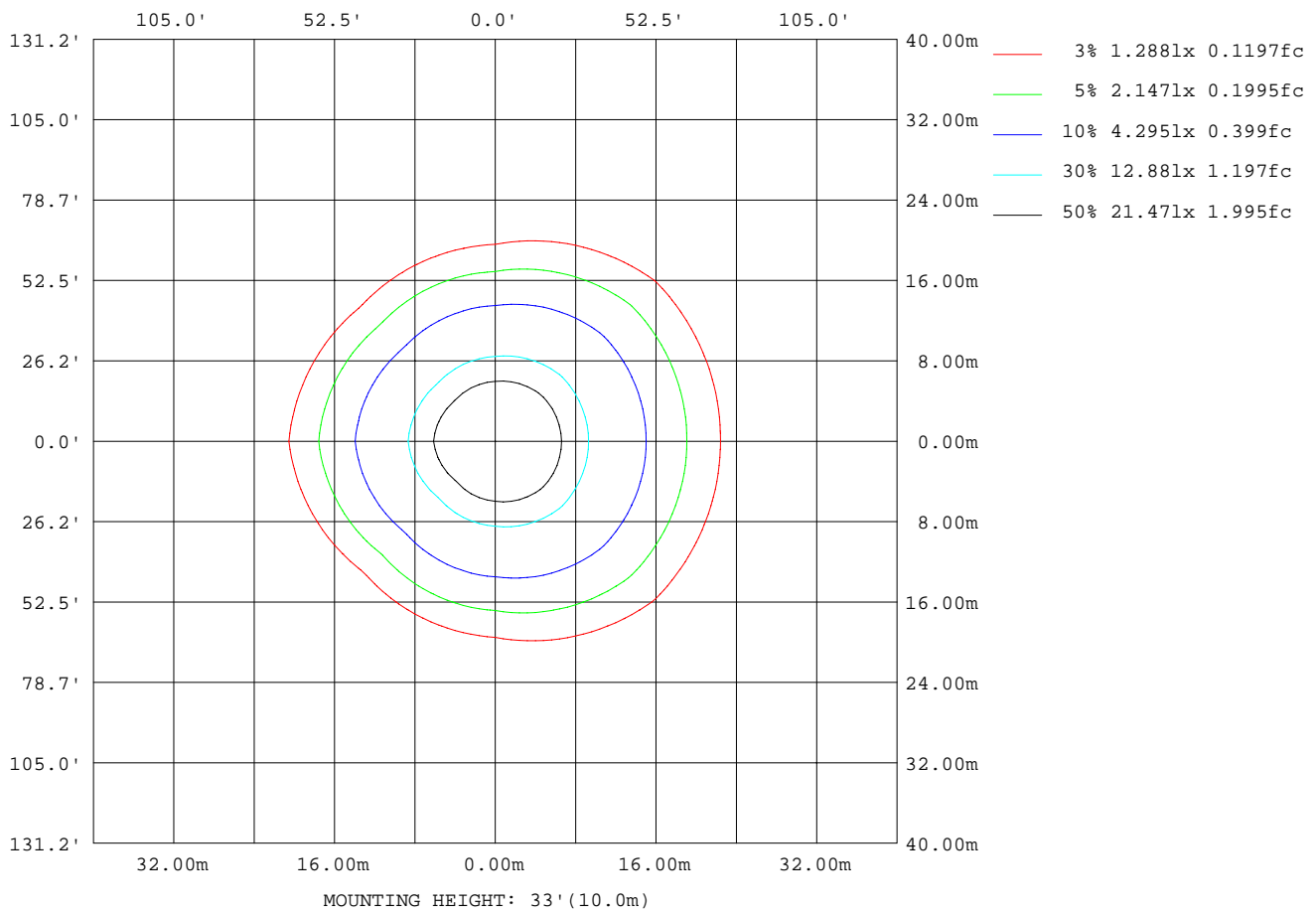
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2022-04-07

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.100m [K=1.0000]  
 Remarks:



**ISOLUX DIAGRAM**

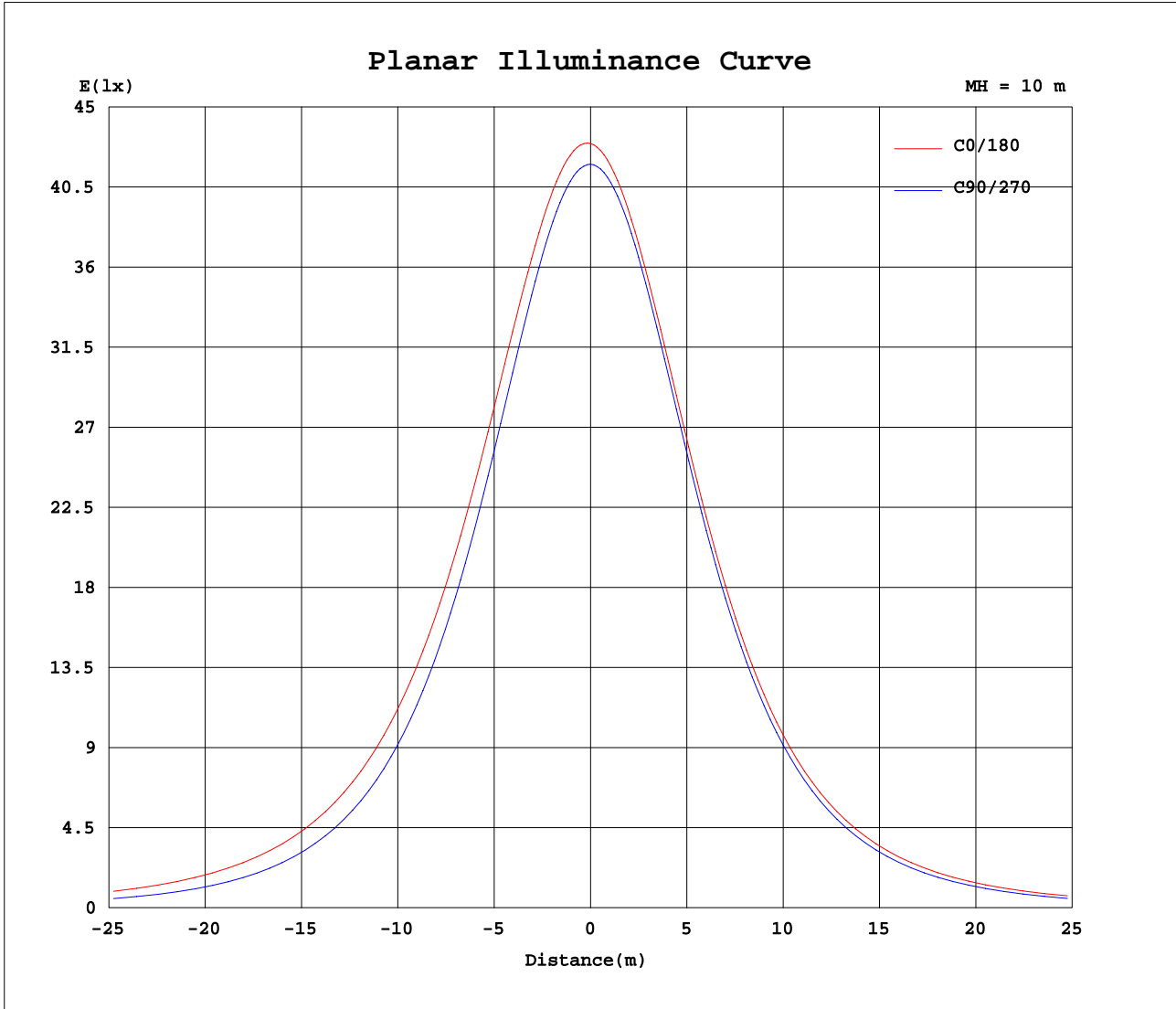
Test:U:120.4V I:0.9042A P:108.5W PF:0.9966 Lamp Flux:12757.2x1 lm		
NAME: ASD Lighting Corp	TYPE:LED	WEIGHT:
DIM.: 2400*90*80mm	SPEC.:	SERIAL No.:
MFR.: ASD Lighting Corp	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2022-04-07

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.100m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2022-04-07

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.4V I:0.9042A P:108.5W PF:0.9966 Lamp Flux:12757.2x1 lm		
NAME: ASD Lighting Corp	TYPE:LED	WEIGHT:
DIM.: 2400*90*80mm	SPEC.:	SERIAL No.:
MFR.: ASD Lighting Corp	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG)\γ (DEG)	0	45	90	135	180	225	270	315											
0	4181	4181	4181	4181	4181	4181	4181	4181											
5	4190	4212	4163	4117	4139	4113	4156	4213											
10	4161	4203	4099	4023	4062	4005	4089	4212											
15	4098	4154	3992	3892	3953	3860	3979	4177											
20	4002	4065	3845	3731	3814	3683	3829	4112											
25	3874	3939	3658	3534	3642	3472	3641	4012											
30	3716	3779	3436	3298	3439	3230	3418	3878											
35	3531	3585	3182	3020	3208	2961	3166	3710											
40	3318	3367	2902	2713	2952	2672	2888	3507											
45	3080	3117	2596	2382	2674	2362	2587	3268											
50	2817	2848	2269	2036	2377	2040	2266	3000											
55	2533	2561	1923	1686	2067	1711	1928	2708											
60	2230	2249	1565	1344	1749	1386	1578	2398											
65	1917	1934	1204	1025	1433	1079	1224	2077											
70	1600	1604	859	742	1136	800	882	1746											
75	1291	1286	549	504	871	560	572	1418											
80	1002	987	295	320	648	365	315	1103											
85	749	721	106	230	481	253	129	820											
90	541	493	3.85	169	386	188	9.99	578											
95	398	315	2.11	125	313	141	7.40	383											
100	321	224	1.92	91.5	253	106	6.81	250											
105	258	172	2.35	66.5	203	79.3	6.89	186											
110	205	133	2.87	47.9	162	59.2	6.83	136											
115	162	103	3.52	34.4	126	44.0	7.05	98.8											
120	127	76.7	4.06	25.0	97.1	32.9	7.49	68.9											
125	97.3	55.1	4.53	18.7	73.5	24.9	8.01	48.4											
130	72.9	37.9	5.09	14.7	54.6	19.6	8.48	36.9											
135	53.3	28.6	5.68	12.4	40.1	16.1	9.01	28.1											
140	37.9	21.3	6.40	11.1	29.3	13.9	9.59	21.0											
145	26.6	16.2	7.15	10.3	21.2	12.6	10.1	16.1											
150	18.8	13.0	7.91	9.84	17.1	11.7	10.4	13.1											
155	14.1	11.1	8.63	9.62	14.2	11.2	10.8	11.7											
160	11.7	10.4	9.25	9.53	12.9	10.9	11.4	11.0											
165	10.8	10.1	9.97	9.65	12.2	10.7	11.9	10.6											
170	10.8	9.82	10.3	11.0	11.7	10.7	12.2	10.7											
175	10.7	10.4	10.5	11.3	11.4	11.7	12.0	10.6											
180	11.1	11.5	11.3	11.1	11.1	11.4	11.6	11.0											

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2022-04-07

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.100m [K=1.0000]  
 Remarks: