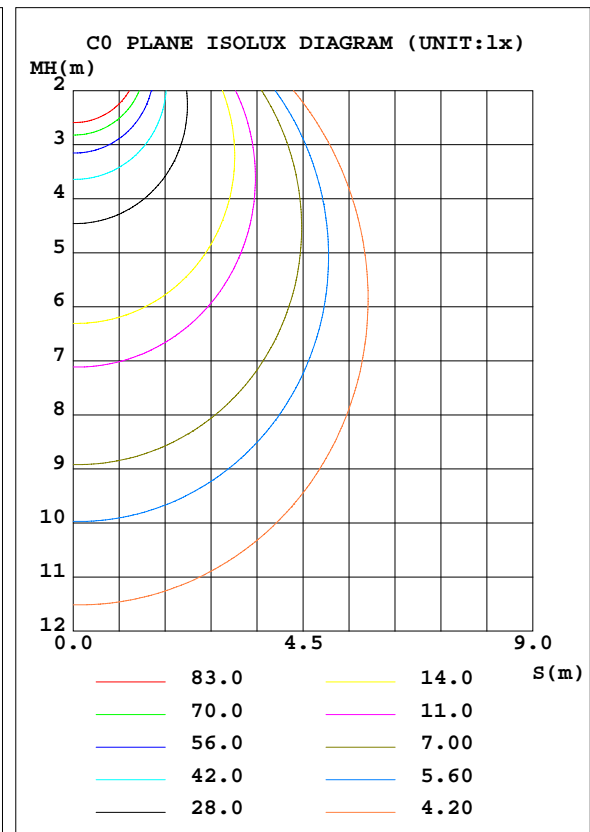
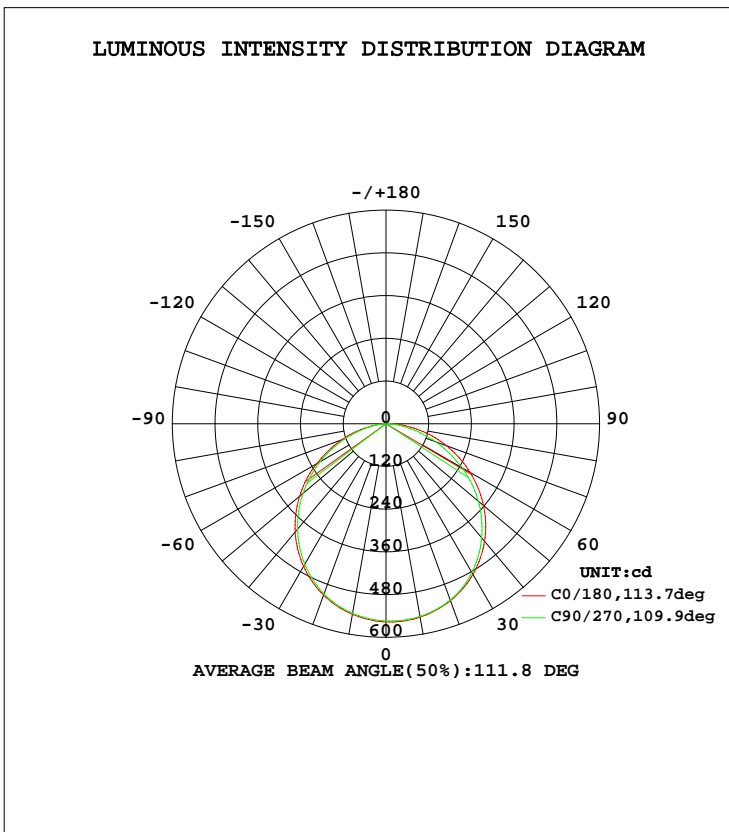


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:121.8V I:0.1600A P:18.00W PF:0.9230 Lamp Flux:1577x1 lm		
NAME: led panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 87.61 lm/W			
MODEL	ASD-MNPR-9D1830-W	I <sub>max</sub> (cd)	557.2	S/MH(C0/180)	1.24
NOMINAL POWER(W)	18W	LOR(%)	100.0	S/MH(C90/270)	1.23
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	1577.0	η UP, DN(C0-180)	0.0,53.1
NOMINAL FLUX(lm)	1577	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,46.9
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: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2017-04-22

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.600m [K=1.0000]  
 Remarks: 18W panel light

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

$\gamma$	C0	C90	C180	C270				$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum,lamp
10	551.5	549.4	543.6	540.7				0- 10	52.58	52.58	3.33,3.33
20	529.0	527.2	512.4	509.1				10- 20	151.1	203.7	12.9,12.9
30	488.4	482.3	462.8	456.0				20- 30	229.6	433.2	27.5,27.5
40	430.6	418.3	396.8	386.5				30- 40	276.6	709.8	45,45
50	357.7	338.9	316.8	304.3				40- 50	285.5	995.3	63.1,63.1
60	272.5	247.6	223.8	213.9				50- 60	255.2	1251	79.3,79.3
70	180.8	148.7	132.4	121.5				60- 70	190.2	1441	91.4,91.4
80	88.39	59.11	47.85	42.79				70- 80	106.6	1547	98.1,98.1
90	8.023	0.0079	0	0				80- 90	29.08	1576	100,100
100	0	0	0	0				90-100	0.1704	1577	100,100
110	0	0	0.0318	0				100-110	0.0020	1577	100,100
120	0	0	0.0517	0				110-120	0.0118	1577	100,100
130	0.0040	0	0.1430	0				120-130	0.0204	1577	100,100
140	0.0516	0	0.1987	0.1071				130-140	0.0476	1577	100,100
150	0.1231	0.0319	0.2781	0.2065				140-150	0.0752	1577	100,100
160	0.2342	0.1668	0.3536	0.2900				150-160	0.0959	1577	100,100
170	0.3692	0.3020	0.4131	0.3415				160-170	0.0865	1577	100,100
180	0.4250	0.3654	0.4250	0.3615				170-180	0.0355	1577	100,100
DEG	LUMINOUS INTENSITY:cd								UNIT:lm		

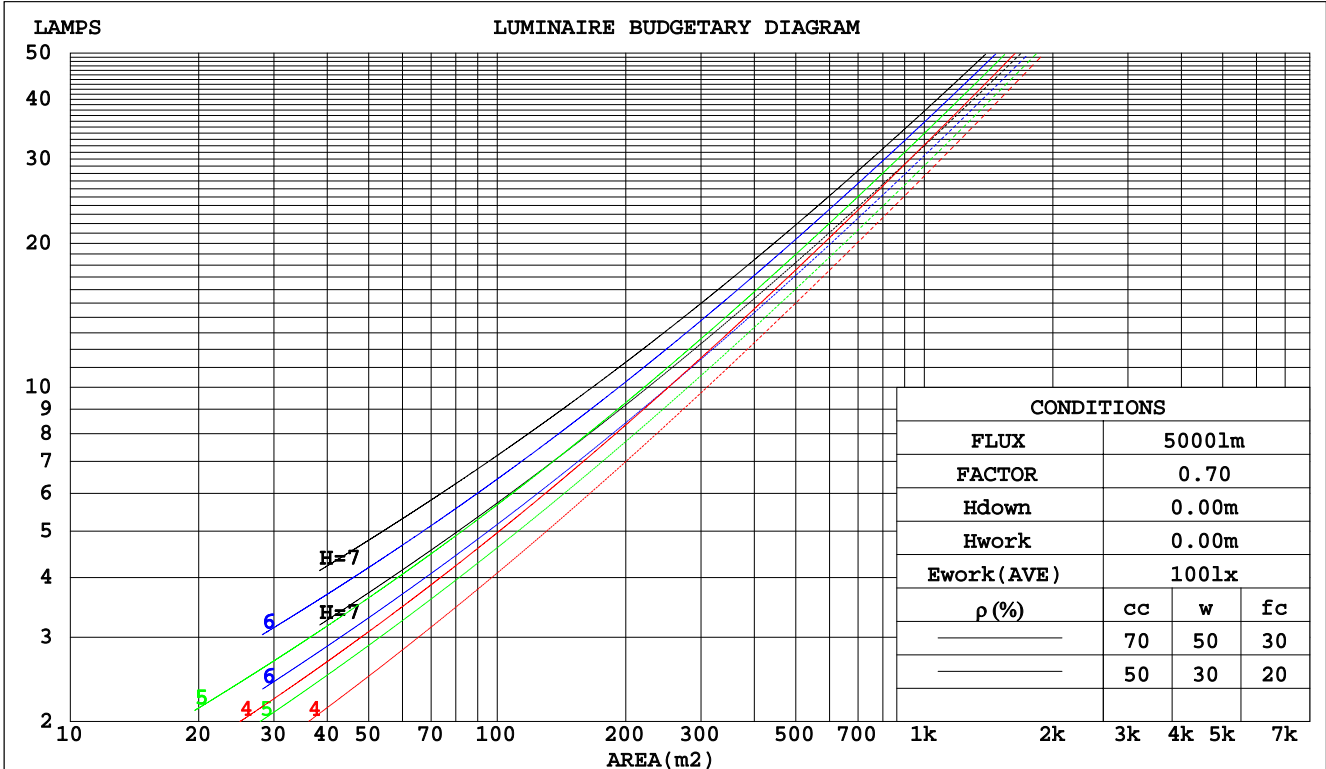
C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2017-04-22

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.600m [K=1.0000]  
 Remarks: 18W panel light

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:121.8V I:0.1600A P:18.00W PF:0.9230 Lamp Flux:1577x1 lm		
NAME: led panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																0
pfc																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	1.04	.00	.96	1.02	.98	.94	.97	.94	.91	.94	.91	.88	.90	.88	.86	.84
2.0	.91	.84	.78	.89	.82	.77	.85	.80	.75	.82	.77	.74	.79	.75	.72	.70
3.0	.80	.71	.65	.78	.70	.64	.75	.68	.63	.72	.67	.62	.70	.65	.61	.59
4.0	.70	.62	.55	.69	.61	.55	.67	.59	.54	.64	.58	.53	.62	.57	.52	.50
5.0	.63	.54	.47	.62	.53	.47	.60	.52	.46	.58	.51	.46	.56	.50	.45	.43
6.0	.57	.48	.41	.56	.47	.41	.54	.46	.41	.52	.45	.40	.51	.45	.40	.38
7.0	.51	.43	.36	.51	.42	.36	.49	.41	.36	.48	.41	.36	.46	.40	.35	.33
8.0	.47	.38	.32	.46	.38	.32	.45	.37	.32	.44	.37	.32	.42	.36	.32	.30
9.0	.43	.35	.29	.42	.35	.29	.41	.34	.29	.40	.34	.29	.39	.33	.29	.27
10.0	.40	.32	.26	.39	.32	.26	.38	.31	.26	.37	.31	.26	.36	.30	.26	.24



C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2017-04-22

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity: 65.0%  
 Test Distance: 8.600m [K=1.0000]  
 Remarks: 18W panel light

WEC AND CCEC

Test:U:121.8V I:0.1600A P:18.00W PF:0.9230 Lamp Flux:1577x1 lm		
NAME: led panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:	Shielding 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	.307	.175	.055	.300	.171	.054	.287	.165	.053	.275	.159	.051	.264	.153	.049	
2.0	.290	.159	.049	.284	.156	.048	.272	.151	.047	.261	.146	.046	.251	.142	.045	
3.0	.269	.143	.043	.263	.141	.042	.253	.137	.042	.243	.133	.041	.234	.130	.040	
4.0	.248	.129	.038	.243	.127	.038	.234	.124	.037	.226	.121	.037	.218	.118	.036	
5.0	.229	.117	.034	.225	.116	.034	.217	.113	.033	.209	.111	.033	.202	.108	.032	
6.0	.213	.107	.031	.209	.106	.030	.202	.103	.030	.195	.101	.030	.189	.099	.030	
7.0	.198	.098	.028	.195	.097	.028	.188	.095	.027	.182	.093	.027	.177	.092	.027	
8.0	.185	.091	.025	.182	.090	.025	.176	.088	.025	.171	.087	.025	.166	.085	.025	
9.0	.174	.084	.023	.171	.083	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023	
10.0	.163	.078	.022	.161	.078	.022	.156	.077	.022	.152	.075	.021	.148	.074	.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	.191	.191	.191	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.180	.156	.135	.154	.134	.116	.106	.092	.080	.061	.053	.047	.019	.017	.015	
2.0	.172	.132	.099	.148	.114	.085	.101	.079	.059	.058	.046	.035	.019	.015	.011	
3.0	.164	.115	.075	.141	.099	.065	.097	.069	.045	.056	.040	.027	.018	.013	.009	
4.0	.157	.101	.059	.135	.087	.051	.093	.061	.036	.054	.036	.021	.017	.012	.007	
5.0	.149	.091	.048	.128	.079	.041	.088	.055	.029	.051	.032	.017	.017	.011	.006	
6.0	.142	.082	.040	.122	.071	.034	.084	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.135	.076	.034	.117	.065	.029	.081	.046	.021	.047	.027	.012	.015	.009	.004	
8.0	.129	.070	.029	.111	.061	.025	.077	.042	.018	.045	.025	.011	.014	.008	.004	
9.0	.123	.065	.026	.106	.056	.022	.073	.040	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.061	.023	.101	.053	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2017-04-22

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.600m [K=1.0000]  
 Remarks: 18W panel light

## UGR(Unified Glare Rating) Table

Test:U:121.8V I:0.1600A P:18.00W PF:0.9230 Lamp Flux:1577x1 lm										
NAME: led panel light					TYPE:LED			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: ASD LIGHTING CORP					SUR.:			Shielding 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	19.1	20.6	19.3	20.8	21.0	18.7	20.3	19.0	20.5	20.7
3H	20.8	22.2	21.1	22.4	22.6	20.2	21.6	20.5	21.8	22.1
4H	21.5	22.8	21.8	23.1	23.3	20.7	22.1	21.1	22.3	22.6
6H	22.1	23.3	22.4	23.6	23.9	21.1	22.4	21.4	22.6	22.9
8H	22.3	23.5	22.7	23.8	24.1	21.2	22.4	21.6	22.7	23.0
12H	22.5	23.7	22.9	24.0	24.3	21.3	22.5	21.7	22.8	23.1
4H 2H	19.7	21.0	20.0	21.2	21.5	19.4	20.7	19.7	21.0	21.2
3H	21.5	22.7	21.9	23.0	23.3	21.0	22.2	21.4	22.5	22.8
4H	22.4	23.5	22.8	23.8	24.1	21.7	22.8	22.1	23.1	23.5
6H	23.1	24.1	23.5	24.4	24.8	22.2	23.2	22.6	23.5	23.9
8H	23.4	24.3	23.8	24.7	25.1	22.4	23.3	22.8	23.7	24.0
12H	23.7	24.5	24.1	24.9	25.3	22.5	23.3	23.0	23.7	24.1
8H 4H	22.7	23.5	23.1	23.9	24.3	22.1	22.9	22.5	23.3	23.7
6H	23.5	24.3	24.0	24.7	25.1	22.7	23.5	23.2	23.9	24.3
8H	24.0	24.6	24.4	25.0	25.5	23.0	23.6	23.5	24.1	24.5
12H	24.3	24.9	24.8	25.3	25.8	23.2	23.8	23.7	24.2	24.7
12H 4H	22.7	23.5	23.1	23.9	24.3	22.1	22.9	22.5	23.3	23.7
6H	23.6	24.3	24.1	24.7	25.1	22.8	23.5	23.3	23.9	24.3
8H	24.1	24.6	24.5	25.1	25.5	23.1	23.7	23.6	24.1	24.6
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117 Corrected 1577 lm Total Lamp Luminous Flux.(8log(F/F0) = 1.6)

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2017-04-22

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:8.600m [K=1.0000]  
Remarks: 18W panel light

## UTILIZATION FACTORS TABLE

Test:U:121.8V I:0.1600A P:18.00W PF:0.9230 Lamp Flux:1577x1 lm		
NAME: led panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:	Shielding Angle:

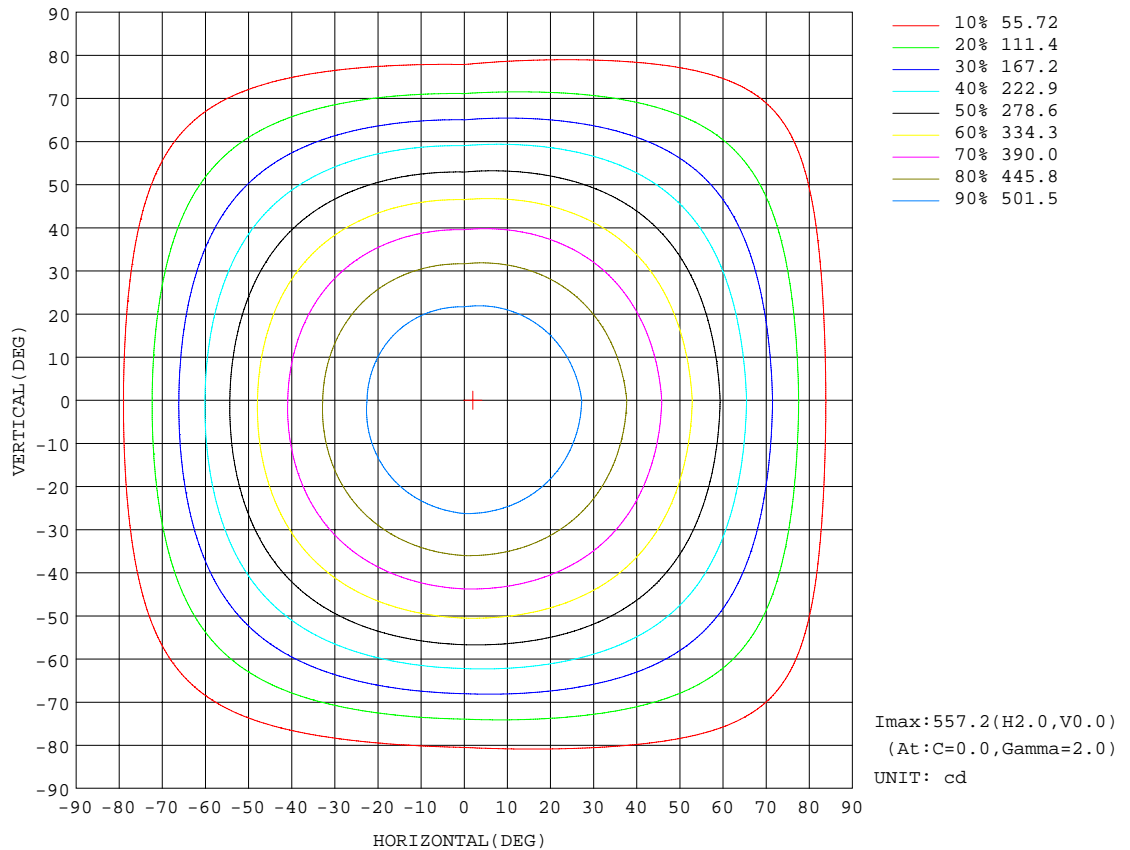
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	58	46	39	57	46	39	56	45	39	32
0.80	68	56	49	67	56	49	65	55	48	41
1.00	76	65	58	75	65	58	73	66	57	50
1.25	83	73	66	82	72	65	79	71	65	57
1.50	88	78	72	87	78	71	84	76	70	62
2.00	95	87	80	93	85	79	90	83	78	70
2.50	99	91	85	97	90	84	93	87	83	74
3.00	102	96	90	100	94	89	96	91	87	78
4.00	106	101	96	104	99	95	100	96	92	83
5.00	109	104	100	106	102	98	102	98	95	86
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2017-04-22

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.600m [K=1.0000]  
 Remarks: 18W panel light

ISOCANDELA DIAGRAM

Test:U:121.8V I:0.1600A P:18.00W PF:0.9230 Lamp Flux:1577x1 lm		
NAME: led panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:	Shielding Angle:

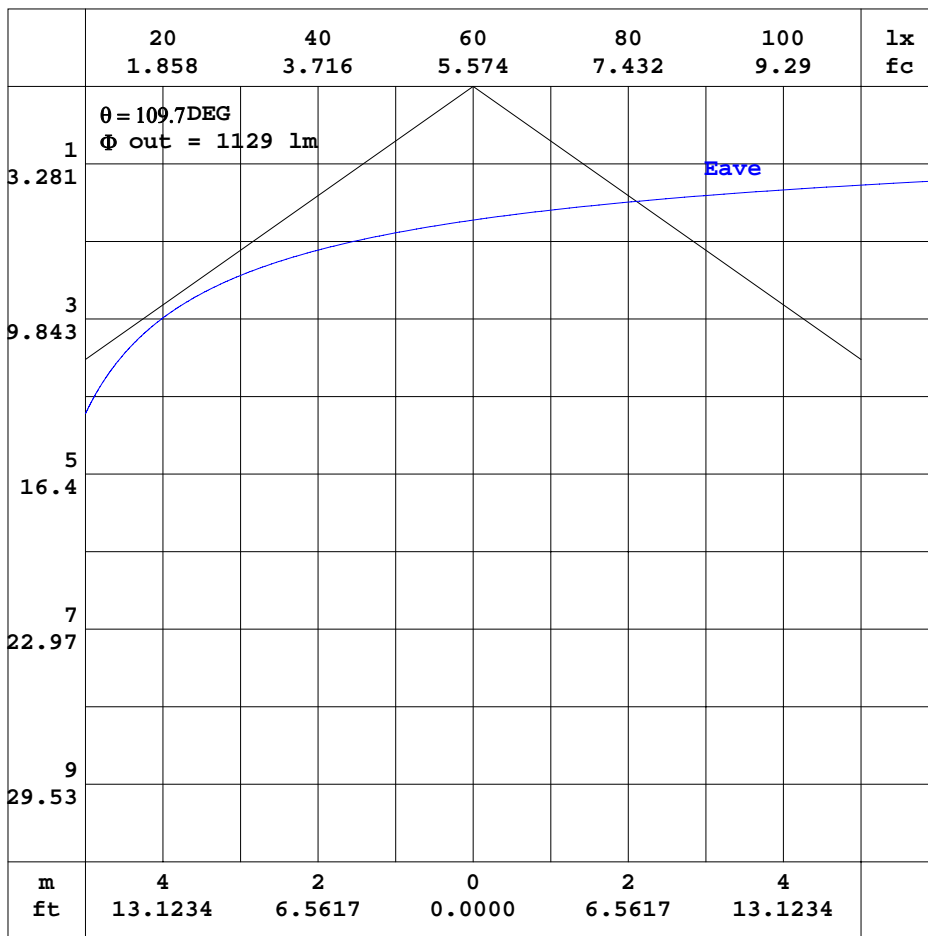


C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2017-04-22

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity: 65.0%  
 Test Distance: 8.600m [K=1.0000]  
 Remarks: 18W panel light

AAI CURVES

Test:U:121.8V I:0.1600A P:18.00W PF:0.9230 Lamp Flux:1577x1 lm		
NAME: led panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:	Shielding Angle:



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

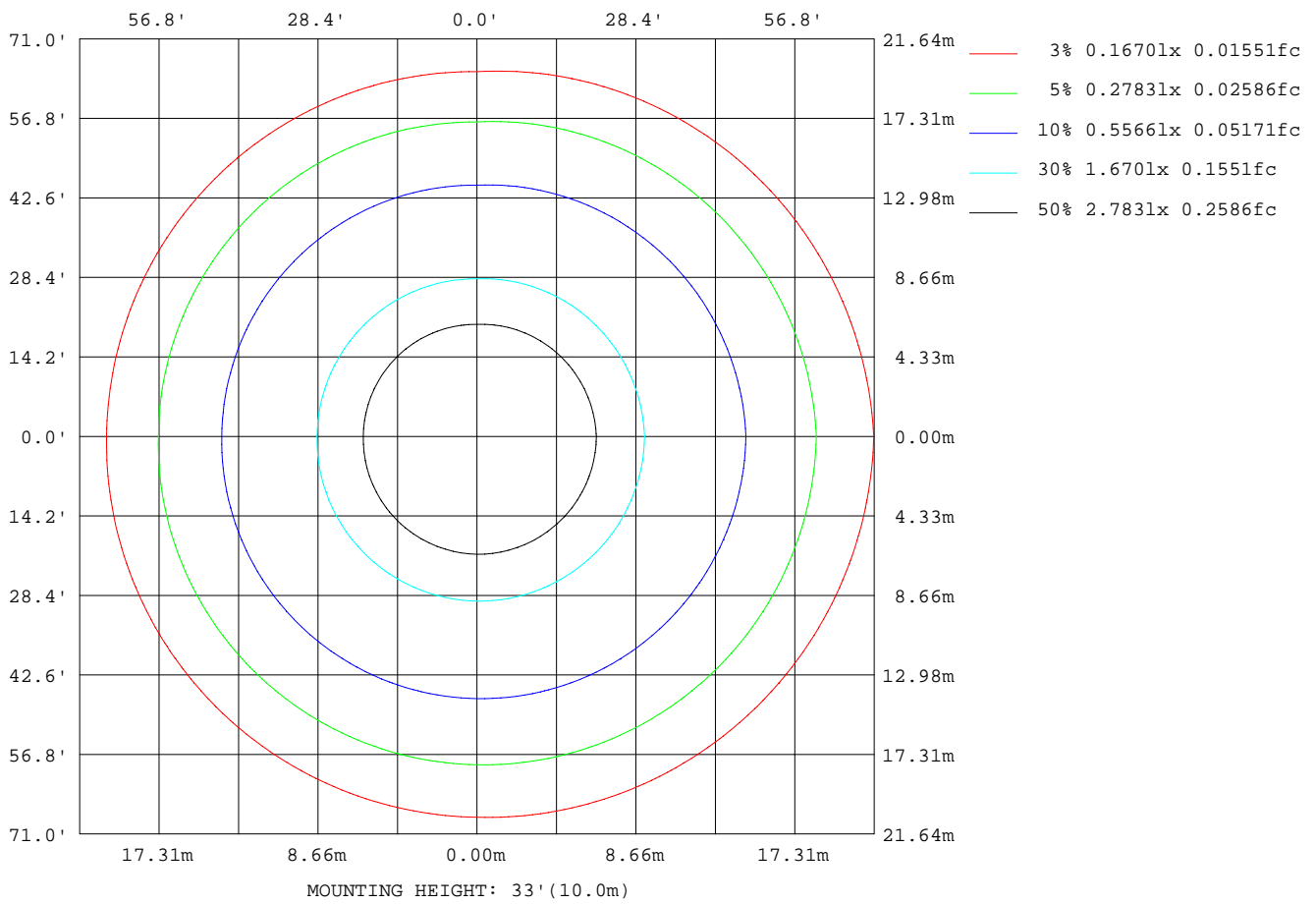
C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2017-04-22

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity: 65.0%  
 Test Distance: 8.600m [K=1.0000]  
 Remarks: 18W panel light



ISOLUX DIAGRAM

Test:U:121.8V I:0.1600A P:18.00W PF:0.9230 Lamp Flux:1577x1 lm		
NAME: led panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:	Shielding Angle:



C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2017-04-22

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.600m [K=1.0000]  
 Remarks: 18W panel light

## LED Avg.L Report

Test:U:121.8V I:0.1600A P:18.00W PF:0.9230 Lamp Flux:1577x1 lm		
NAME: led panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:	Shielding Angle:

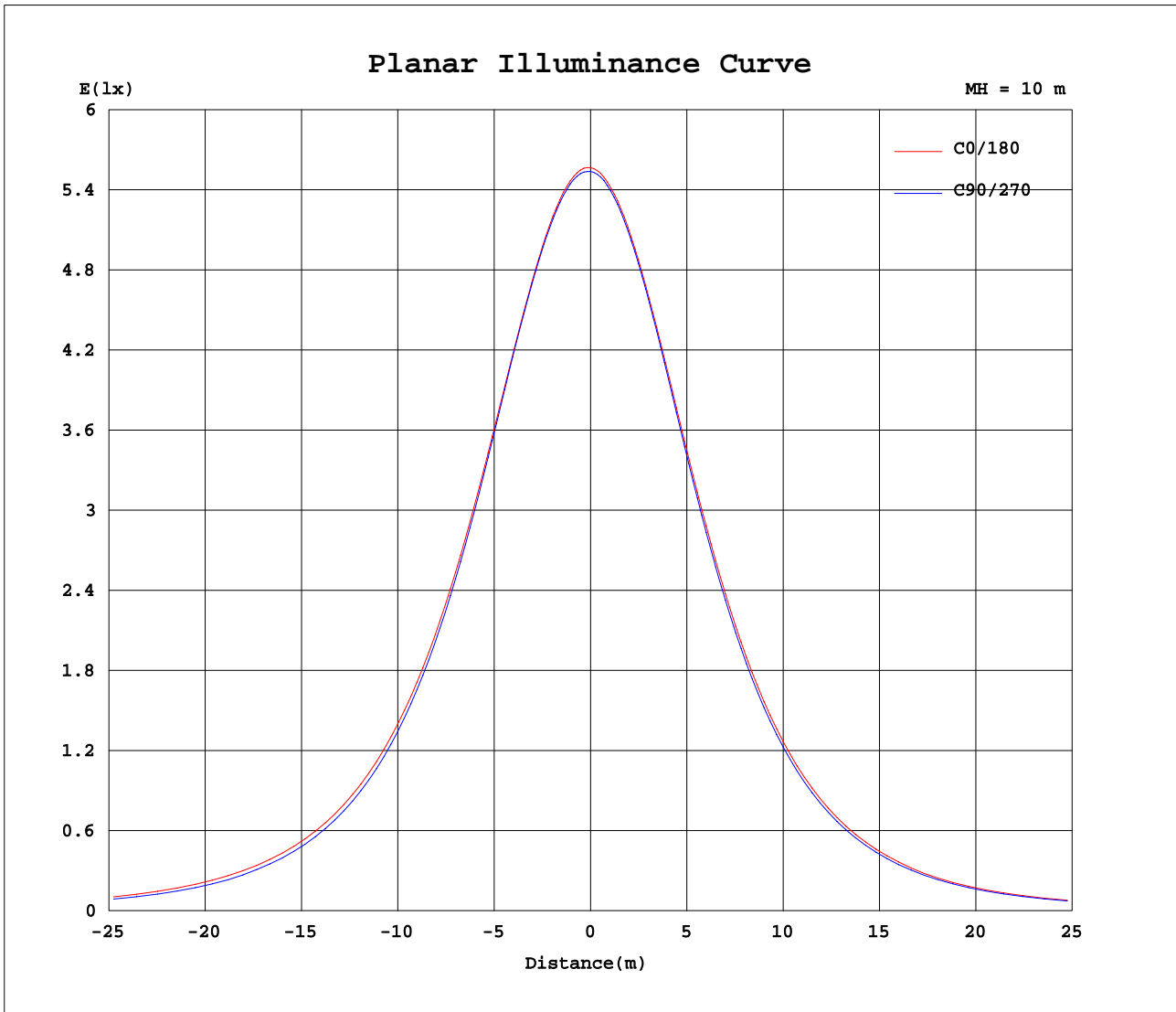
AvgL	cd/m2
L_0~180(65)av	4790
L_0~180(75)av	4318
L_0~180(85)av	3243
L_90~270(65)av	4304
L_90~270(75)av	3436
L_90~270(85)av	2440
L_45(65)av	4450
L_45(75)av	3711
L_45(85)av	2612

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2017-04-22

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:8.600m [K=1.0000]  
Remarks: 18W panel light

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2017-04-22

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity: 65.0%  
 Test Distance: 8.600m [K=1.0000]  
 Remarks: 18W panel light

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:121.8V I:0.1600A P:18.00W PF:0.9230 Lamp Flux:1577x1 lm		
NAME: led panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C( DEG) γ (DEG)	0	90	180	270															
0	557	554	557	554															
5	556	554	552	549															
10	552	549	544	541															
15	542	541	530	527															
20	529	527	512	509															
25	511	507	490	485															
30	488	482	463	456															
35	461	453	432	423															
40	431	418	397	386															
45	396	380	358	347															
50	358	339	317	304															
55	316	294	273	260															
60	273	248	224	214															
65	227	196	178	167															
70	181	149	132	122															
75	135	102	88.7	76.1															
80	88.4	59.1	47.8	42.8															
85	46.2	26.9	10.3	15.6															
90	8.02	0.01	0.00	0.00															
95	0.00	0.00	0.00	0.00															
100	0.00	0.00	0.00	0.00															
105	0.00	0.00	0.00	0.00															
110	0.00	0.00	0.03	0.00															
115	0.00	0.00	0.05	0.00															
120	0.00	0.00	0.05	0.00															
125	0.00	0.00	0.08	0.00															
130	0.00	0.00	0.14	0.00															
135	0.03	0.00	0.17	0.05															
140	0.05	0.00	0.20	0.11															
145	0.08	0.00	0.23	0.17															
150	0.12	0.03	0.28	0.21															
155	0.17	0.10	0.31	0.25															
160	0.23	0.17	0.35	0.29															
165	0.30	0.24	0.39	0.32															
170	0.37	0.30	0.41	0.34															
175	0.40	0.34	0.43	0.35															
180	0.43	0.37	0.43	0.36															

C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2017-04-22

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.600m [K=1.0000]  
 Remarks: 18W panel light