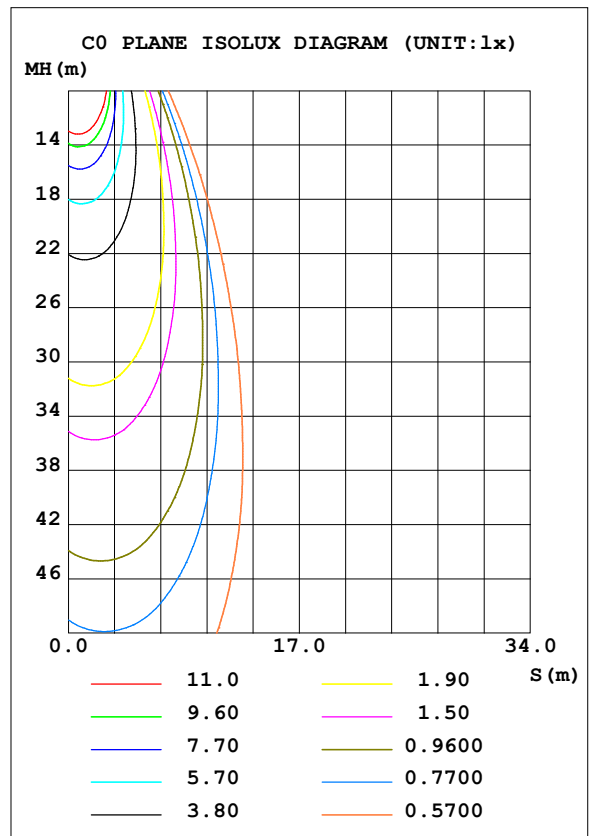
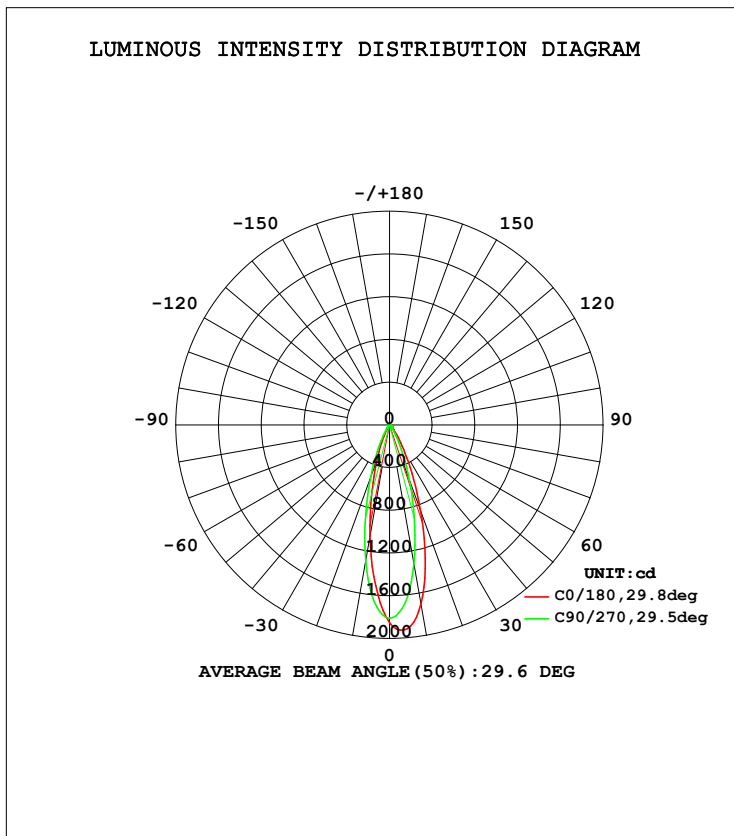


**LUMINAIRE PHOTOMETRIC TEST REPORT**

NAME: SD28AL3-7W	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: wanjia lighting	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 93.73 lm/W
MODEL	SS3535-3000K-30D	I <sub>max</sub> (cd)	1924	S/MH (C0/180)		0.61
NOMINAL POWER (W)	7	LOR (%)	100.0	S/MH (C90/270)		0.49
RATED VOLTAGE (V)	13	TOTAL FLUX (lm)	660.23	η UP, DN (C0-180)		0.0, 56.4
NOMINAL FLUX (lm)	660.235	CIE CLASS	DIRECT	η UP, DN (C180-360)		0.0, 43.6
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM		0.50
TEST VOLTAGE (V)	12.6	η down (%)	100.0	CIBSE SHR MAX		0.50



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2023-02-13

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.274  
 Humidity: 65.0%  
 Test Distance: 7.415m [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
10	1698	1596	1316	1122	1060	1070	1288	1543	0- 10	149.4	149.4	22.6,22.6
20	851.0	770.8	540.2	398.0	340.6	349.6	515.6	717.8	10- 20	252.5	402.0	60.9,60.9
30	266.5	238.1	140.9	91.62	73.20	77.48	126.7	205.4	20- 30	143.7	545.6	82.6,82.6
40	66.48	59.56	44.77	36.29	27.56	28.37	36.09	49.04	30- 40	50.94	596.6	90.4,90.4
50	33.81	32.01	27.59	23.60	17.39	17.99	20.37	24.75	40- 50	24.63	621.2	94.1,94.1
60	21.46	20.63	17.54	14.86	10.43	10.53	12.66	14.84	50- 60	17.71	638.9	96.8,96.8
70	12.87	12.48	10.37	8.727	5.185	5.428	6.824	8.046	60- 70	11.71	650.6	98.5,98.5
80	7.099	6.832	5.396	4.269	1.658	1.892	2.722	3.642	70- 80	6.671	657.3	99.6,99.6
90	3.248	3.064	2.497	2.270	0.6223	0.5557	0.5322	0.8492	80- 90	2.954	660.2	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

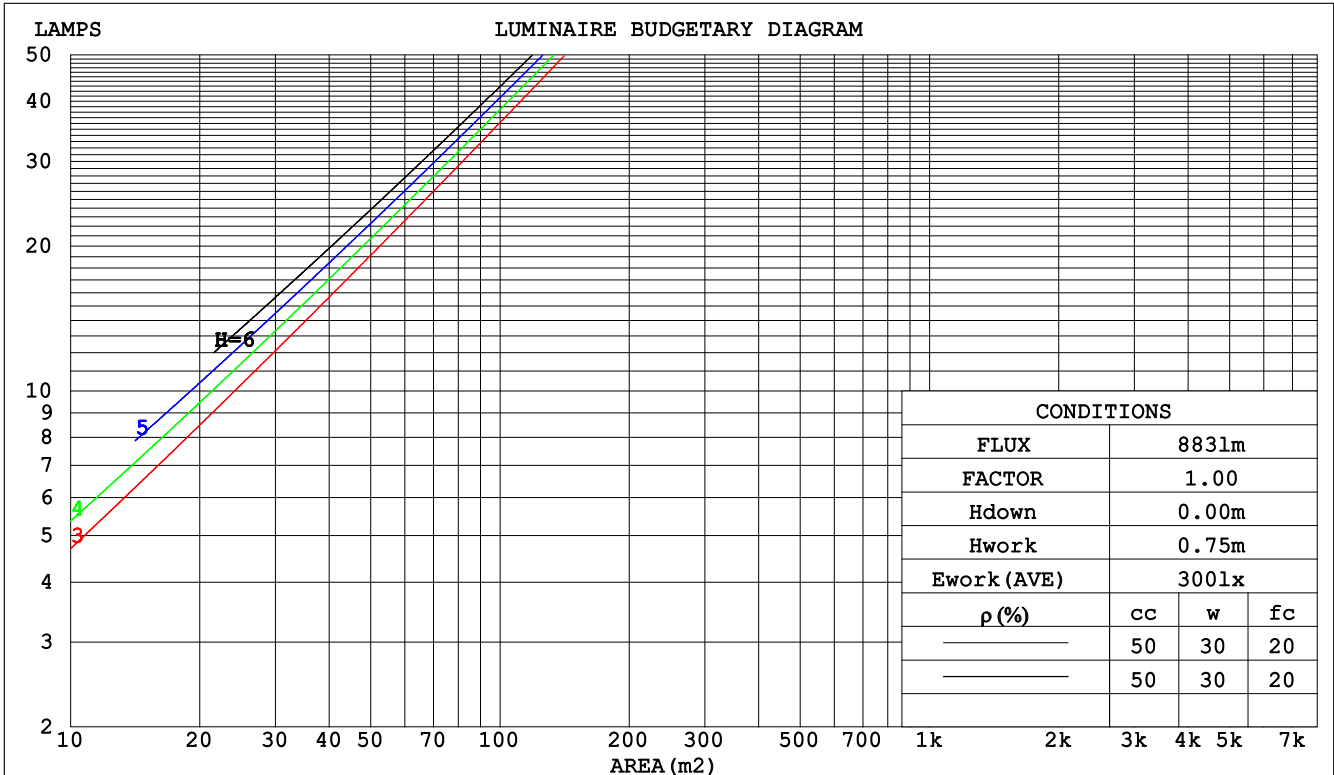
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2023-02-13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.274  
 Humidity:65.0%  
 Test Distance:7.415m [K=1.0000]  
 Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

NAME: SD28AL3-7W	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: wanjia lighting	SUR.:	PROTECTION ANGLE:

$\rho_{cc}$	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	1.11	1.09	1.07	1.09	1.07	1.05	1.05	1.03	1.02	1.01	.00	.99	.98	.97	.96	.94
2.0	1.04	1.00	.97	1.02	.99	.96	.99	.96	.94	.96	.94	.92	.94	.92	.90	.88
3.0	.98	.94	.90	.97	.93	.89	.94	.91	.88	.92	.89	.86	.90	.87	.85	.84
4.0	.93	.88	.84	.92	.87	.84	.90	.86	.83	.88	.84	.82	.86	.83	.81	.79
5.0	.88	.83	.79	.87	.82	.79	.86	.81	.78	.84	.80	.77	.82	.79	.77	.75
6.0	.84	.79	.75	.83	.78	.75	.82	.78	.74	.81	.77	.74	.79	.76	.73	.72
7.0	.80	.75	.71	.80	.75	.71	.78	.74	.71	.77	.73	.70	.76	.73	.70	.69
8.0	.77	.72	.68	.76	.71	.68	.75	.71	.68	.74	.70	.68	.74	.70	.67	.66
9.0	.74	.69	.65	.73	.69	.65	.73	.68	.65	.72	.68	.65	.71	.67	.65	.63
10.0	.71	.66	.63	.71	.66	.63	.70	.66	.63	.69	.65	.62	.69	.65	.62	.61



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2023-02-13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.274  
 Humidity: 65.0%  
 Test Distance: 7.415m [K=1.0000]  
 Remarks:

**WEC AND CCEC**

NAME: SD28AL3-7W	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: wanjia lighting	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	.172	.098	.031	.165	.094	.030	.153	.088	.028	.141	.081	.026	.130	.076	.024	
2.0	.160	.088	.027	.155	.085	.026	.144	.080	.025	.135	.076	.024	.126	.071	.022	
3.0	.150	.080	.024	.145	.078	.023	.136	.074	.022	.128	.070	.022	.120	.067	.021	
4.0	.140	.073	.021	.136	.071	.021	.129	.068	.020	.122	.065	.020	.115	.063	.019	
5.0	.132	.067	.020	.129	.066	.019	.122	.064	.019	.116	.061	.018	.110	.059	.018	
6.0	.125	.063	.018	.122	.062	.018	.116	.059	.017	.111	.058	.017	.106	.056	.017	
7.0	.118	.058	.017	.116	.058	.016	.111	.056	.016	.106	.054	.016	.101	.053	.015	
8.0	.112	.055	.015	.110	.054	.015	.106	.053	.015	.101	.051	.015	.098	.050	.015	
9.0	.107	.052	.014	.105	.051	.014	.101	.050	.014	.097	.049	.014	.094	.048	.014	
10.0	.102	.049	.014	.101	.049	.014	.097	.048	.013	.094	.047	.013	.090	.046	.013	

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.171	.157	.145	.146	.135	.125	.100	.093	.086	.058	.054	.050	.018	.017	.016	
2.0	.155	.133	.114	.133	.114	.098	.091	.079	.069	.052	.046	.040	.017	.015	.013	
3.0	.141	.113	.091	.121	.098	.079	.083	.068	.056	.048	.040	.033	.015	.013	.011	
4.0	.130	.099	.075	.112	.085	.065	.077	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.120	.087	.062	.103	.075	.054	.071	.052	.038	.041	.031	.023	.013	.010	.007	
6.0	.112	.077	.052	.096	.067	.045	.067	.047	.032	.039	.027	.019	.012	.009	.006	
7.0	.105	.069	.044	.090	.060	.039	.062	.042	.027	.036	.025	.016	.012	.008	.005	
8.0	.099	.063	.038	.085	.054	.033	.059	.038	.024	.034	.023	.014	.011	.007	.005	
9.0	.093	.057	.033	.080	.050	.029	.056	.035	.020	.032	.021	.012	.010	.007	.004	
10.0	.088	.053	.029	.076	.046	.025	.053	.032	.018	.031	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2023-02-13

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.274  
 Humidity: 65.0%  
 Test Distance: 7.415m [K=1.0000]  
 Remarks:

**Uncorrected UGR Table**

NAME: SD28AL3-7W					TYPE: SPOT LIGHT					WEIGHT:				
DIM.:					SPEC.:					SERIAL No.:				
MFR.: wanjia lighting					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	22.6	23.5	22.8	23.6	23.8	21.3	22.2	21.5	22.3	22.5				
3H	23.5	24.3	23.8	24.5	24.7	22.3	23.1	22.5	23.2	23.4				
4H	24.0	24.7	24.3	25.0	25.2	22.7	23.5	23.0	23.7	23.9				
6H	24.5	25.2	24.8	25.4	25.6	23.2	23.9	23.5	24.1	24.3				
8H	24.7	25.4	25.0	25.6	25.9	23.4	24.0	23.7	24.3	24.6				
12H	25.0	25.6	25.3	25.9	26.2	23.6	24.2	23.9	24.5	24.8				
4H 2H	22.9	23.7	23.2	23.9	24.1	21.8	22.6	22.1	22.8	23.0				
3H	24.0	24.7	24.4	25.0	25.2	23.0	23.7	23.3	23.9	24.2				
4H	24.7	25.3	25.0	25.5	25.9	23.6	24.2	24.0	24.5	24.8				
6H	25.3	25.8	25.7	26.2	26.5	24.2	24.7	24.6	25.1	25.4				
8H	25.6	26.1	26.0	26.5	26.8	24.5	25.0	24.9	25.3	25.7				
12H	26.0	26.4	26.4	26.8	27.2	24.8	25.2	25.2	25.6	26.0				
8H 4H	24.9	25.4	25.3	25.7	26.1	23.9	24.4	24.3	24.8	25.1				
6H	25.7	26.1	26.1	26.5	26.9	24.7	25.1	25.1	25.5	25.9				
8H	26.1	26.5	26.6	26.9	27.4	25.1	25.5	25.6	25.9	26.3				
12H	26.7	27.0	27.1	27.4	27.9	25.6	25.9	26.0	26.3	26.8				
12H 4H	24.9	25.3	25.3	25.7	26.1	24.0	24.4	24.4	24.8	25.2				
6H	25.8	26.1	26.2	26.5	27.0	24.8	25.2	25.3	25.6	26.1				
8H	26.3	26.6	26.7	27.0	27.5	25.3	25.6	25.8	26.1	26.5				
Variations with the observer position at spacings:														
S = 1.0H	+ 0.5 / - 0.4					+ 0.3 / - 0.4								
1.5H	+ 0.9 / - 0.3					+ 0.2 / - 0.3								
2.0H	+ 0.3 / - 0.3					+ 0.2 / - 0.4								

CIE Pub.117 Corrected 660.2 lm Total Lamp Luminous Flux. (8log(F/F0) = -1.4)

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2023-02-13

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.274  
Humidity: 65.0%  
Test Distance: 7.415m [K=1.0000]  
Remarks:

**UTILIZATION FACTORS TABLE**

NAME: SD28AL3-7W	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: wanjia lighting	SUR.:	PROTECTION ANGLE:

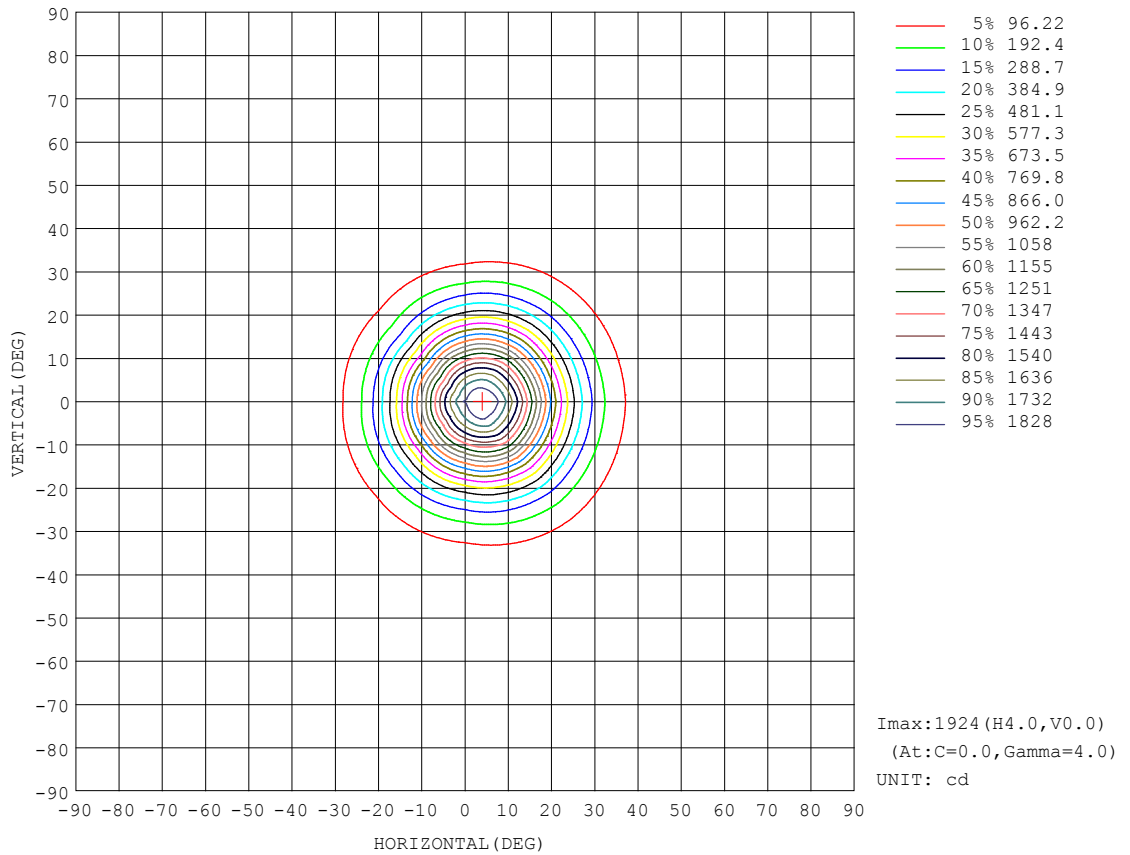
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	86	79	75	85	79	75	84	78	75	71
0.80	93	87	83	92	87	83	91	86	82	79
1.00	98	92	88	97	91	88	95	91	87	83
1.25	102	96	92	101	96	92	99	94	91	87
1.50	105	99	96	103	99	95	101	97	94	90
2.00	107	103	100	106	102	99	103	100	97	92
2.50	109	105	102	108	104	101	105	102	99	93
3.00	111	107	104	109	106	103	106	103	101	95
4.00	113	110	108	111	109	106	107	105	104	96
5.00	115	112	110	112	110	108	108	107	105	98
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: 2023-02-13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.274  
 Humidity: 65.0%  
 Test Distance: 7.415m [K=1.0000]  
 Remarks:

**ISOCANDELA DIAGRAM**

<b>NAME:</b> SD28AL3-7W	<b>TYPE:</b> SPOT LIGHT	<b>WEIGHT:</b>
<b>DIM.:</b>	<b>SPEC.:</b>	<b>SERIAL No.:</b>
<b>MFR.:</b> wanjia lighting	<b>SUR.:</b>	<b>PROTECTION ANGLE:</b>

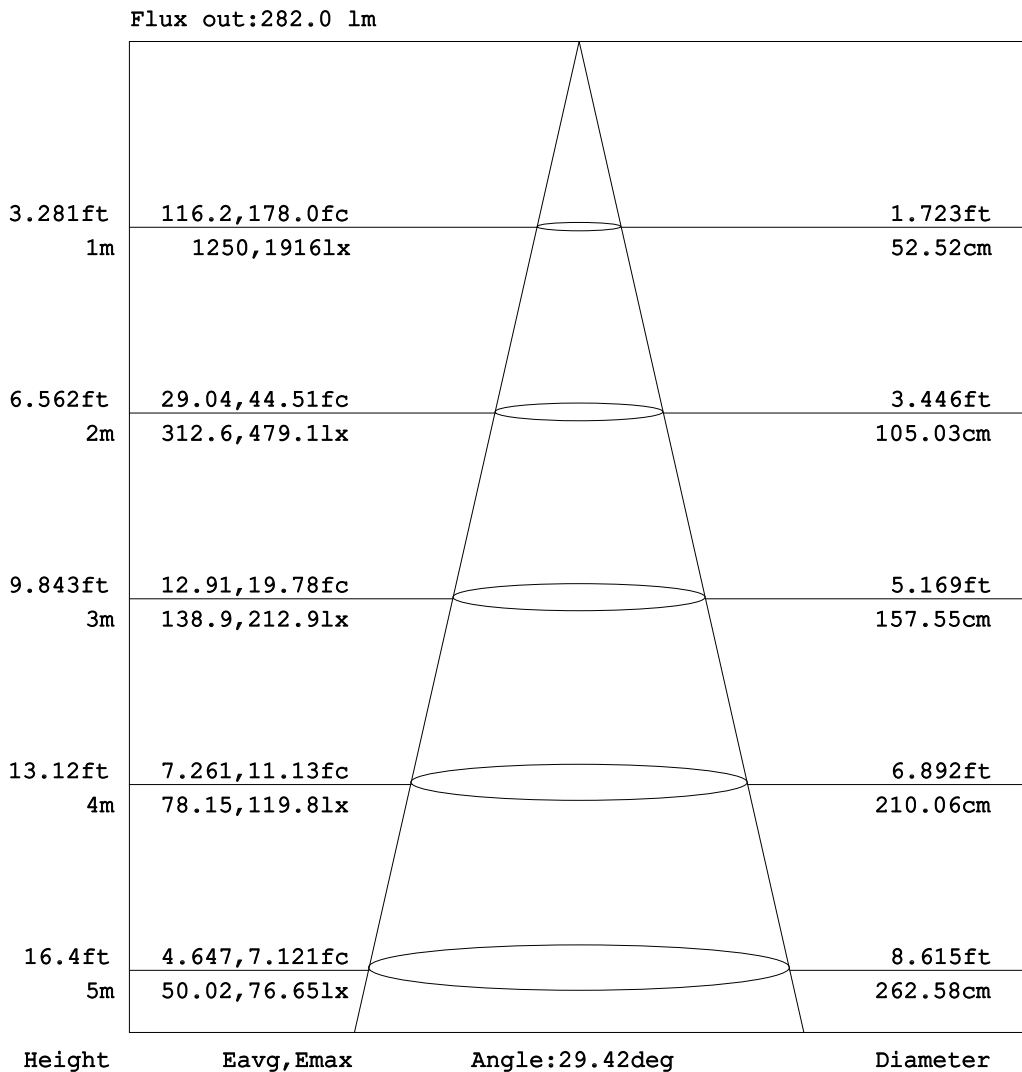


C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2023-02-13

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.274  
 Humidity:65.0%  
 Test Distance:7.415m [K=1.0000]  
 Remarks:

**AAI Figure**

NAME: SD28AL3-7W	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: wanjia lighting	SUR.:	PROTECTION ANGLE:



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

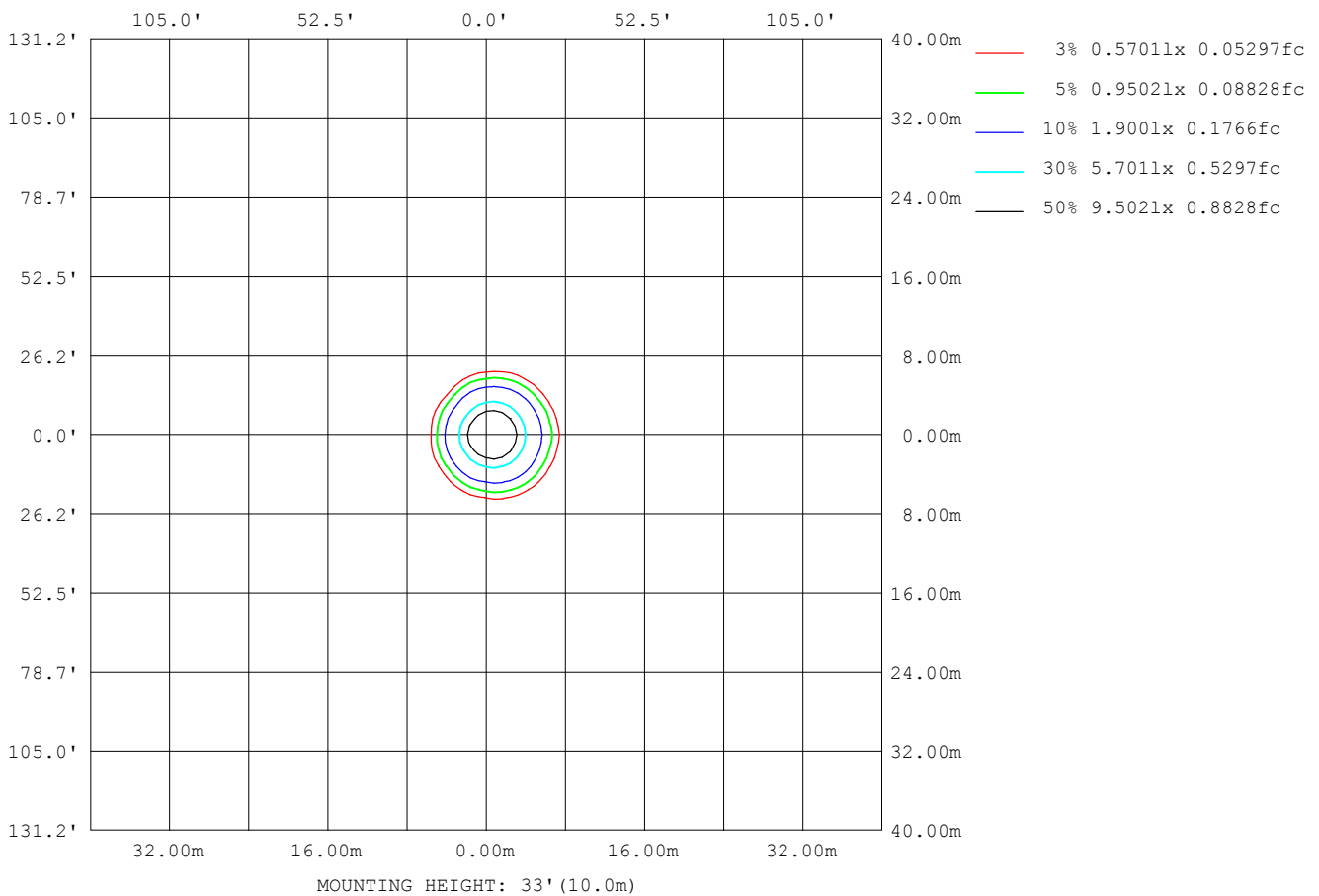
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2023-02-13

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.274  
Humidity: 65.0%  
Test Distance: 7.415m [K=1.0000]  
Remarks:



**ISOLUX DIAGRAM**

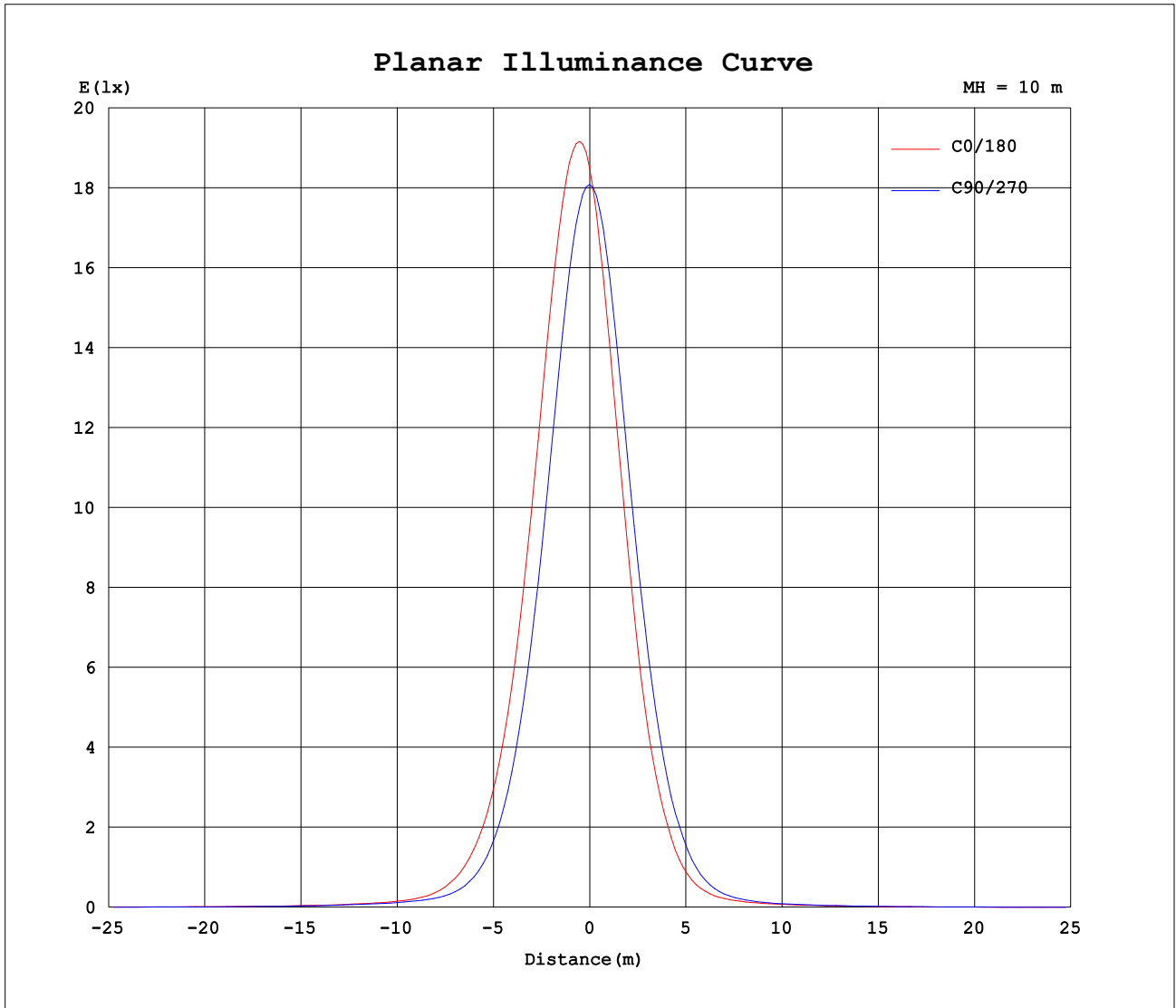
<b>NAME:</b> SD28AL3-7W	<b>TYPE:</b> SPOT LIGHT	<b>WEIGHT:</b>
<b>DIM.:</b>	<b>SPEC.:</b>	<b>SERIAL No.:</b>
<b>MFR.:</b> wanjia lighting	<b>SUR.:</b>	<b>PROTECTION ANGLE:</b>



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2023-02-13

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.274  
 Humidity: 65.0%  
 Test Distance: 7.415m [K=1.0000]  
 Remarks:

**Planar Illuminance Curve**



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2023-02-13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.274  
Humidity: 65.0%  
Test Distance: 7.415m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: SD28AL3-7W	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: wanjia lighting	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C (DEG) \ $\gamma$ (DEG)	0	45	90	135	180	225	270	315										
0	1851	1818	1808	1817	1851	1818	1808	1817										
5	1914	1852	1677	1537	1509	1504	1659	1815										
10	1698	1596	1316	1122	1060	1070	1288	1543										
15	1295	1208	900	708	635	654	871	1126										
20	851	771	540	398	341	350	516	718										
25	498	454	288	198	161	170	274	403										
30	266	238	141	91.6	73.2	77.5	127	205										
35	132	111	70.6	51.8	40.2	42.6	60.9	96.4										
40	66.5	59.6	44.8	36.3	27.6	28.4	36.1	49.0										
45	43.7	40.6	34.0	28.6	21.5	22.3	25.7	32.3										
50	33.8	32.0	27.6	23.6	17.4	18.0	20.4	24.8										
55	27.1	26.0	22.2	19.0	13.7	14.0	16.4	19.4										
60	21.5	20.6	17.5	14.9	10.4	10.5	12.7	14.8										
65	16.8	16.1	13.6	11.5	7.60	7.67	9.46	11.0										
70	12.9	12.5	10.4	8.73	5.18	5.43	6.82	8.05										
75	9.72	9.43	7.69	6.24	3.19	3.46	4.62	5.66										
80	7.10	6.83	5.40	4.27	1.66	1.89	2.72	3.64										
85	4.90	4.63	3.62	2.79	0.67	0.80	1.29	2.00										
90	3.25	3.06	2.50	2.27	0.62	0.56	0.53	0.85										

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2023-02-13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.274  
Humidity: 65.0%  
Test Distance: 7.415m [K=1.0000]  
Remarks: