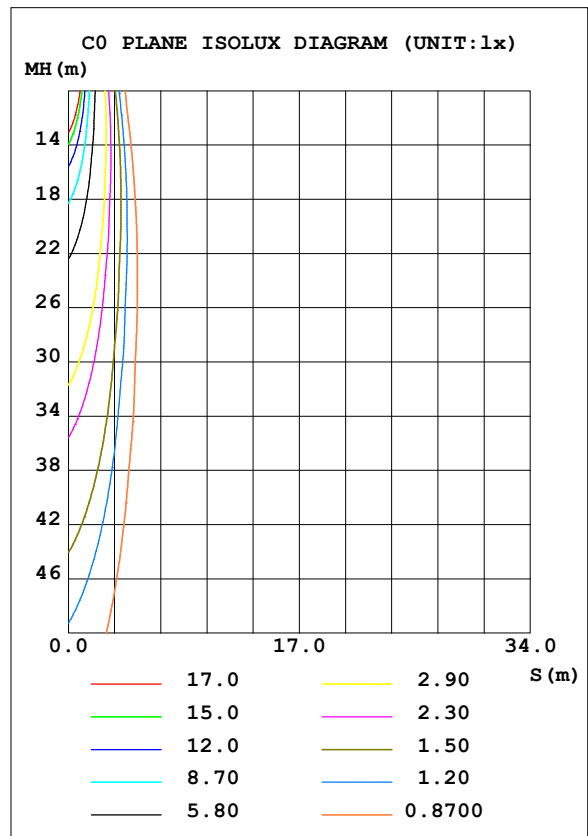
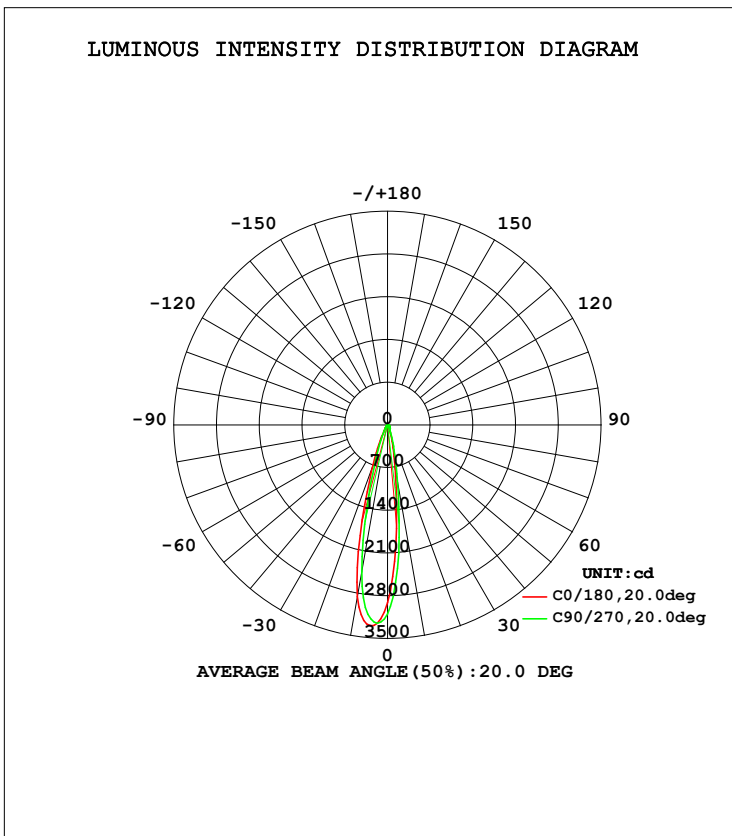


LUMINAIRE PHOTOMETRIC TEST REPORT

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

DATA OF LAMP		PHOTOMETRIC DATA Eff: 102.57 lm/W			
MODEL	SS3535-2700K-15D	Imax (cd)	3301	S/MH (C0/180)	0.21
NOMINAL POWER (W)	7	LOR (%)	100.0	S/MH (C90/270)	0.25
RATED VOLTAGE (V)	13	TOTAL FLUX (lm)	682.21	η UP, DN (C0-180)	1.8, 28.9
NOMINAL FLUX (lm)	682.205	CIE CLASS	DIRECT	η UP, DN (C180-360)	1.3, 68.0
LAMPS INSIDE	1	η up (%)	3.1	CIBSE SHR NOM	0.00
TEST VOLTAGE (V)	12.6	η down (%)	96.9	CIBSE SHR MAX	1.00



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-12-04

γ Range: 0 - 180DEG
 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

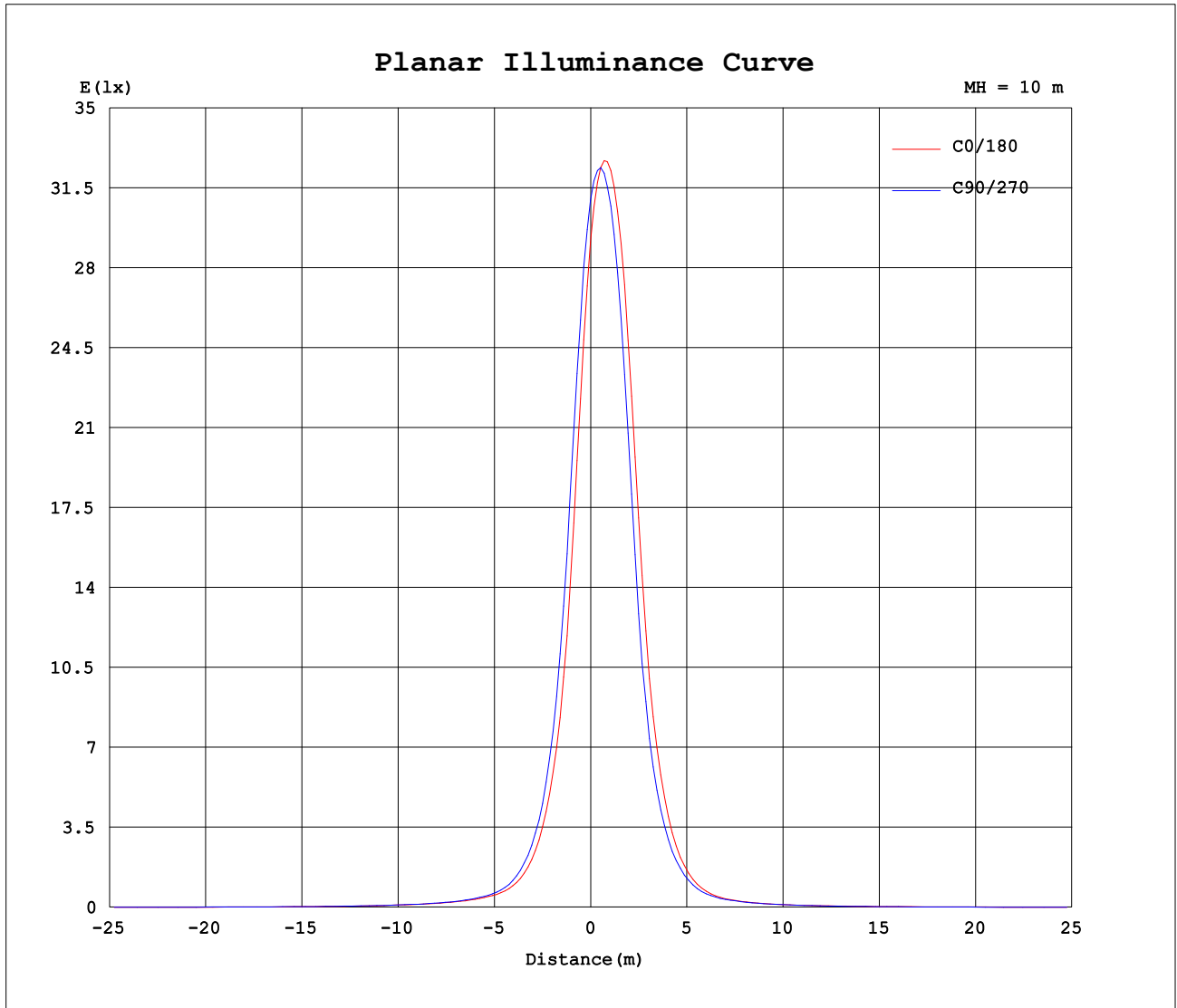
ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	732.4	966.8	2854	2442					0- 10	218.9	218.9	32.1,32.1
20	153.8	195.5	698.6	514.3					10- 20	249.6	468.5	68.7,68.7
30	60.11	67.08	129.8	108.0					20- 30	88.30	556.8	81.6,81.6
40	35.48	37.00	47.20	45.10					30- 40	36.88	593.7	87,87
50	23.31	24.43	27.94	25.82					40- 50	24.79	618.5	90.7,90.7
60	14.72	15.89	18.24	16.07					50- 60	18.35	636.8	93.4,93.4
70	8.658	9.998	11.18	9.506					60- 70	12.71	649.6	95.2,95.2
80	4.187	5.071	6.138	5.066					70- 80	7.742	657.3	96.3,96.3
90	2.204	2.242	2.610	1.697					80- 90	3.713	661.0	96.9,96.9
100	2.210	2.206	0.9707	0.8837					90-100	1.829	662.8	97.2,97.2
110	2.156	2.239	1.147	1.017					100-110	1.700	664.5	97.4,97.4
120	2.712	2.595	1.766	1.863					110-120	1.824	666.4	97.7,97.7
130	4.690	4.211	3.273	3.223					120-130	2.589	668.9	98.1,98.1
140	6.676	6.298	5.054	5.107					130-140	3.762	672.7	98.6,98.6
150	7.267	7.099	5.925	5.929					140-150	3.919	676.6	99.2,99.2
160	7.119	7.056	6.427	6.371					150-160	3.086	679.7	99.6,99.6
170	6.001	6.582	6.630	6.559					160-170	1.886	681.6	99.9,99.9
180	6.066	6.446	6.144	6.414					170-180	0.6029	682.2	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:2019-12-04

γ Range: 0 - 180DEG
 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



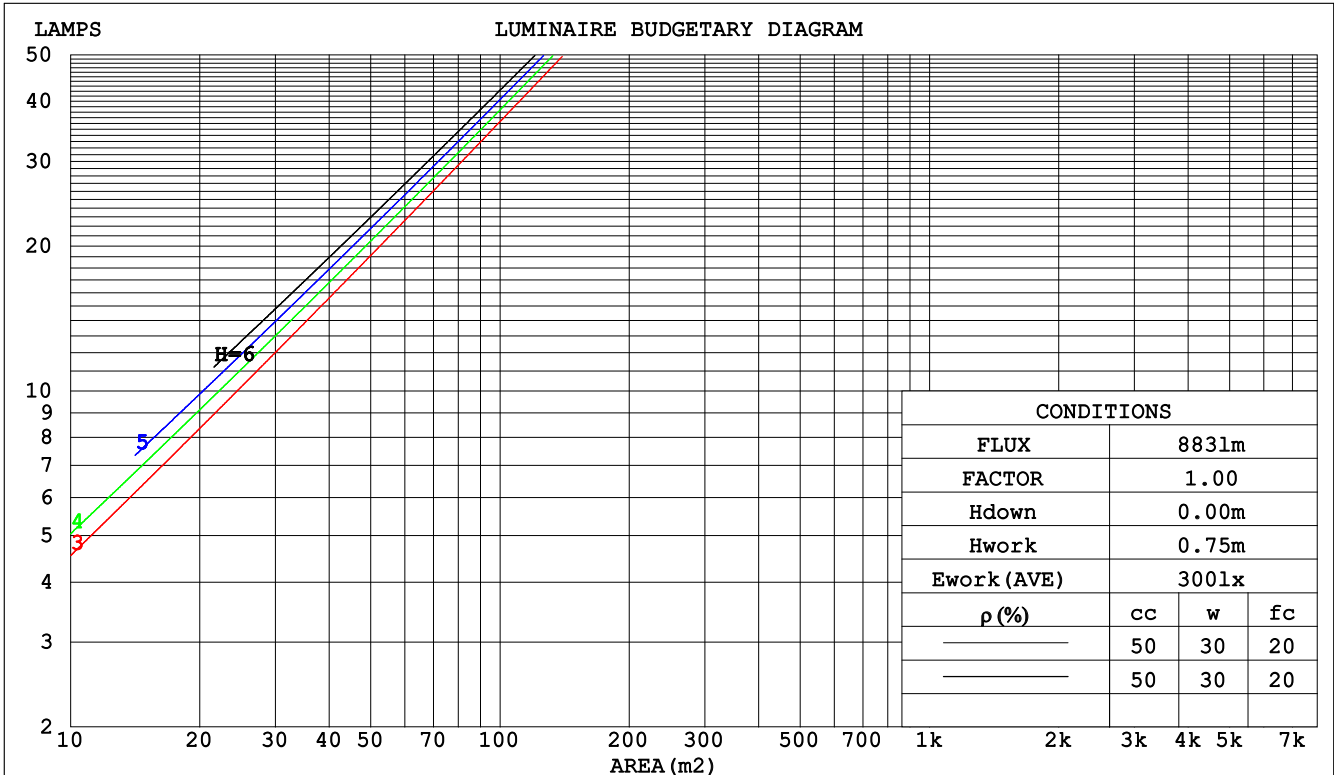
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-12-04

γ Range: 0 - 180DEG
 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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	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	1.04	1.04	1.04	.99	.99	.99	.97
1.0	1.11	1.08	1.06	1.08	1.06	1.04	1.04	1.02	1.00	.99	.98	.97	.95	.94	.94	.92
2.0	1.04	1.00	.97	1.02	.99	.96	.98	.96	.93	.95	.93	.91	.92	.90	.89	.87
3.0	.98	.94	.91	.97	.93	.90	.94	.91	.88	.91	.88	.86	.88	.86	.84	.83
4.0	.94	.89	.85	.92	.88	.85	.90	.86	.83	.88	.85	.82	.85	.83	.81	.79
5.0	.89	.85	.81	.88	.84	.80	.86	.82	.79	.84	.81	.79	.83	.80	.78	.76
6.0	.86	.81	.77	.85	.80	.77	.83	.79	.76	.82	.78	.75	.80	.77	.75	.73
7.0	.82	.78	.74	.82	.77	.74	.80	.76	.73	.79	.75	.73	.78	.75	.72	.71
8.0	.80	.75	.71	.79	.74	.71	.78	.74	.71	.77	.73	.70	.75	.72	.70	.69
9.0	.77	.72	.69	.76	.72	.69	.75	.71	.68	.74	.71	.68	.73	.70	.68	.67
10.0	.74	.70	.67	.74	.70	.67	.73	.69	.66	.72	.69	.66	.71	.68	.66	.65



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-12-04

γ Range: 0 - 180DEG
 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:

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	.167	.095	.030	.160	.091	.029	.145	.083	.027	.132	.076	.024	.120	.070	.022	
2.0	.155	.085	.026	.148	.082	.025	.136	.076	.023	.125	.070	.022	.115	.065	.020	
3.0	.143	.076	.023	.138	.074	.022	.127	.069	.021	.118	.065	.020	.109	.060	.019	
4.0	.133	.069	.020	.128	.067	.020	.119	.063	.019	.111	.060	.018	.103	.056	.017	
5.0	.124	.063	.018	.120	.062	.018	.113	.059	.017	.105	.056	.017	.099	.053	.016	
6.0	.117	.059	.017	.113	.057	.016	.106	.055	.016	.100	.052	.015	.094	.050	.015	
7.0	.110	.054	.015	.107	.053	.015	.101	.051	.015	.095	.049	.014	.090	.047	.014	
8.0	.104	.051	.014	.101	.050	.014	.096	.048	.014	.091	.046	.013	.086	.044	.013	
9.0	.099	.048	.013	.096	.047	.013	.092	.045	.013	.087	.044	.012	.083	.042	.012	
10.0	.094	.045	.013	.092	.044	.012	.088	.043	.012	.083	.041	.012	.080	.040	.011	

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	.214	.214	.214	.183	.183	.183	.125	.125	.125	.072	.072	.072	.023	.023	.023	
1.0	.194	.181	.170	.166	.156	.146	.114	.107	.101	.065	.062	.059	.021	.020	.019	
2.0	.178	.157	.139	.152	.135	.120	.104	.093	.084	.060	.054	.049	.019	.018	.016	
3.0	.164	.138	.116	.141	.119	.101	.097	.082	.071	.056	.048	.042	.018	.016	.014	
4.0	.153	.123	.100	.131	.106	.087	.090	.074	.061	.052	.043	.036	.017	.014	.012	
5.0	.143	.111	.087	.122	.096	.076	.084	.067	.054	.049	.039	.032	.016	.013	.010	
6.0	.134	.101	.077	.115	.088	.067	.079	.061	.048	.046	.036	.028	.015	.012	.009	
7.0	.126	.093	.070	.109	.081	.061	.075	.057	.043	.044	.033	.026	.014	.011	.008	
8.0	.120	.087	.064	.103	.075	.055	.071	.053	.039	.042	.031	.023	.013	.010	.008	
9.0	.114	.081	.059	.098	.070	.051	.068	.049	.036	.040	.029	.022	.013	.010	.007	
10.0	.109	.076	.055	.094	.066	.048	.065	.047	.034	.038	.028	.020	.012	.009	.007	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-12-04

γ Range: 0 - 180DEG
 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	19.0	19.8	19.3	20.0	20.2	19.3	20.0	19.5	20.2	20.4					
3H	20.2	20.9	20.5	21.1	21.4	20.5	21.3	20.8	21.5	21.7					
4H	20.7	21.4	21.0	21.6	21.9	21.1	21.8	21.5	22.1	22.3					
6H	21.1	21.8	21.5	22.0	22.3	21.7	22.3	22.0	22.6	22.9					
8H	21.3	21.9	21.6	22.2	22.5	21.9	22.5	22.3	22.8	23.1					
12H	21.4	22.0	21.8	22.4	22.7	22.1	22.7	22.5	23.0	23.4					
4H 2H	19.5	20.2	19.9	20.5	20.7	19.7	20.4	20.1	20.7	20.9					
3H	20.9	21.5	21.3	21.8	22.1	21.2	21.8	21.6	22.1	22.5					
4H	21.5	22.1	21.9	22.4	22.8	21.9	22.5	22.3	22.8	23.2					
6H	22.1	22.6	22.5	23.0	23.4	22.6	23.1	23.0	23.5	23.9					
8H	22.3	22.8	22.8	23.2	23.6	22.9	23.4	23.4	23.8	24.2					
12H	22.5	23.0	23.0	23.4	23.8	23.2	23.6	23.6	24.0	24.5					
8H 4H	21.8	22.2	22.2	22.6	23.1	22.2	22.6	22.6	23.0	23.4					
6H	22.5	22.9	23.0	23.4	23.8	23.0	23.4	23.5	23.8	24.3					
8H	22.9	23.2	23.4	23.7	24.2	23.4	23.7	23.9	24.2	24.7					
12H	23.2	23.5	23.7	24.0	24.5	23.8	24.1	24.3	24.6	25.1					
12H 4H	21.8	22.2	22.3	22.7	23.1	22.2	22.6	22.6	23.0	23.5					
6H	22.6	22.9	23.1	23.4	23.9	23.0	23.4	23.5	23.8	24.4					
8H	23.0	23.3	23.5	23.8	24.3	23.5	23.8	24.0	24.3	24.8					
Variations with the observer position at spacings:															
S = 1.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3									
1.5H	+ 0.1 / - 0.2					+ 0.1 / - 0.1									
2.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.3									

CIE Pub.117 Corrected 682.2 lm Total Lamp Luminous Flux. (8log(F/F0) = -1.3)

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-12-04

γ Range: 0 - 180DEG
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:

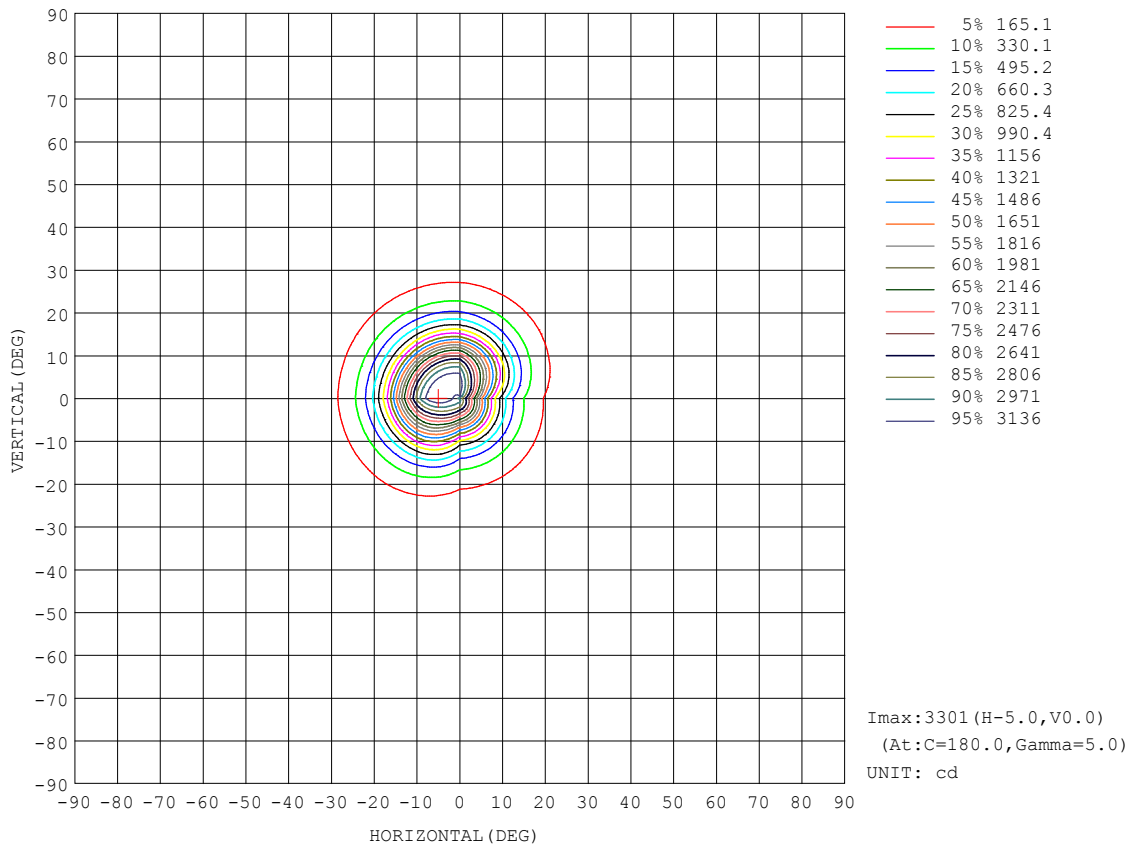
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	84	77	73	83	77	73	82	76	72	68
0.80	91	85	81	90	84	80	89	83	80	76
1.00	96	90	85	95	89	85	93	89	84	80
1.25	100	94	90	99	93	90	96	92	89	84
1.50	103	97	94	101	97	93	99	95	92	86
2.00	106	101	98	104	100	97	101	98	95	89
2.50	108	104	100	106	102	99	102	99	97	90
3.00	110	106	103	108	104	101	104	101	99	91
4.00	112	109	106	110	107	105	105	103	101	93
5.00	113	111	109	111	109	107	106	105	103	94
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: 2019-12-04

γ Range: 0 - 180DEG
 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:

ISOCANDELA DIAGRAM

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

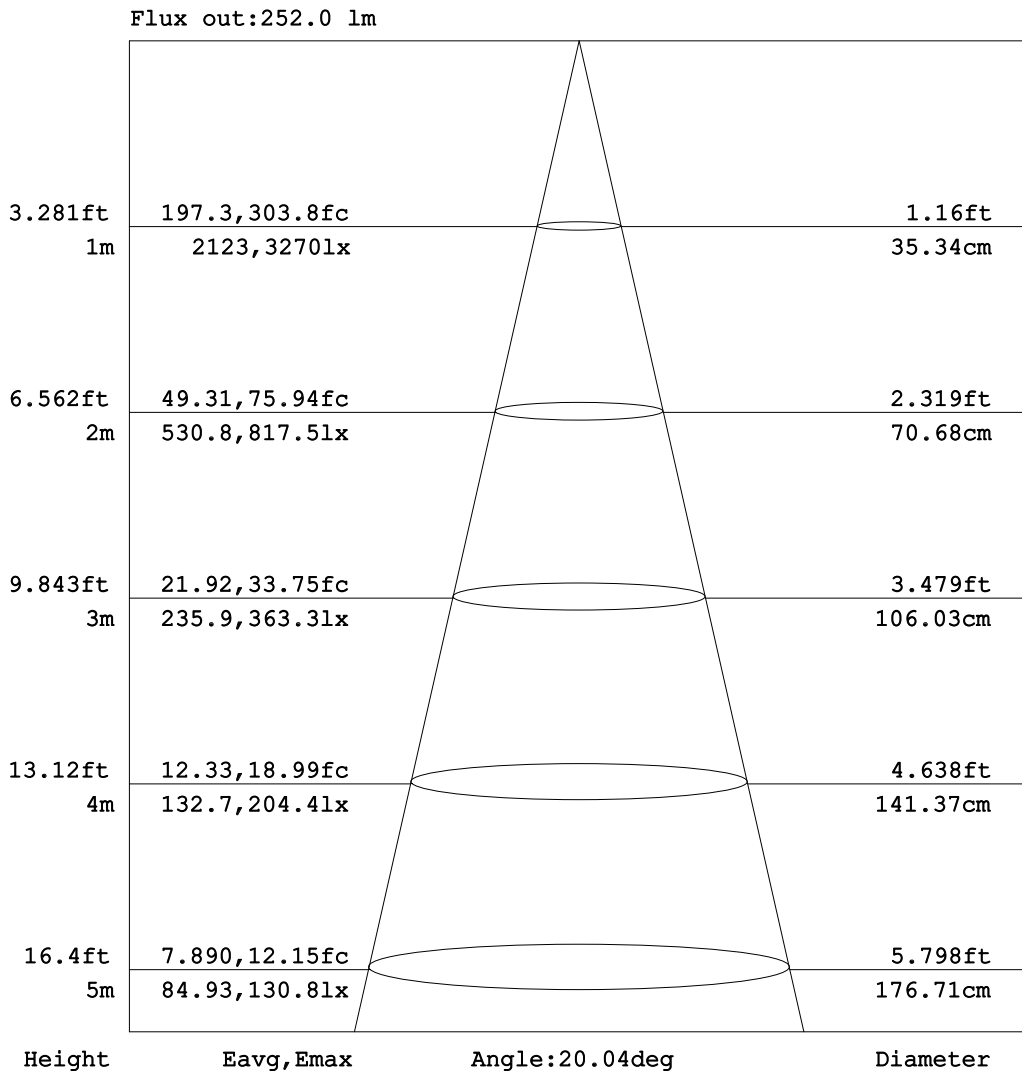


C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-12-04

γ Range: 0 - 180DEG
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:



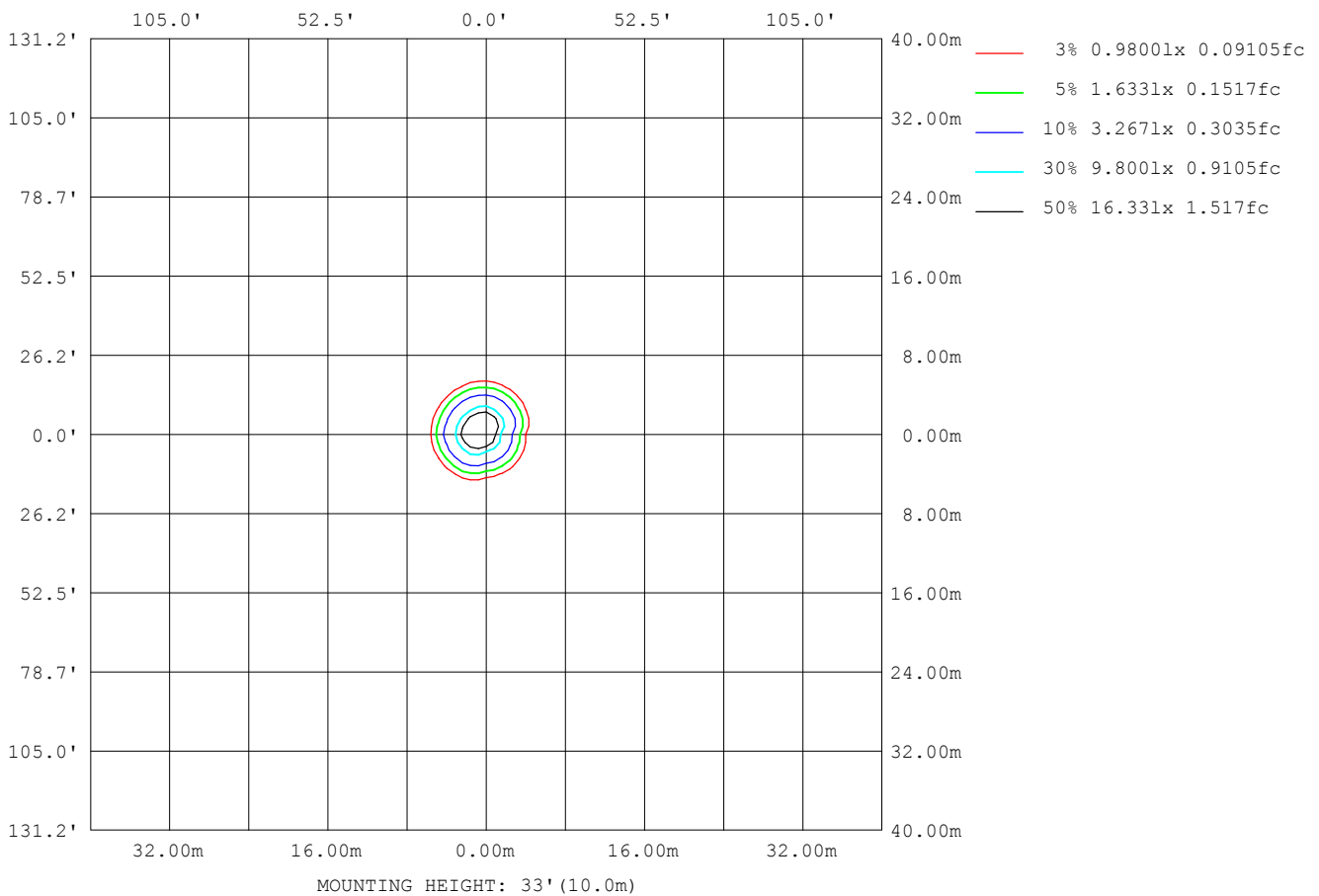
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-12-04

γ Range: 0 - 180DEG
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

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



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-12-04

γ Range: 0 - 180DEG
 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:

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) \ γ (DEG)	0	90	180	270															
0	2913	3096	2913	3096															
5	1703	2116	3301	3191															
10	732	967	2854	2442															
15	328	424	1612	1184															
20	154	196	699	514															
25	86.1	103	295	230															
30	60.1	67.1	130	108															
35	44.7	47.8	68.8	63.9															
40	35.5	37.0	47.2	45.1															
45	28.9	30.1	34.6	33.1															
50	23.3	24.4	27.9	25.8															
55	18.7	19.8	22.8	20.5															
60	14.7	15.9	18.2	16.1															
65	11.5	12.5	14.4	12.5															
70	8.66	10.00	11.2	9.51															
75	6.23	7.36	8.43	7.13															
80	4.19	5.07	6.14	5.07															
85	2.50	3.00	4.22	3.28															
90	2.20	2.24	2.61	1.70															
95	2.12	2.22	0.95	0.89															
100	2.21	2.21	0.97	0.88															
105	2.38	2.22	1.03	0.92															
110	2.16	2.24	1.15	1.02															
115	2.29	2.33	1.38	1.21															
120	2.71	2.60	1.77	1.86															
125	3.54	3.21	2.38	2.24															
130	4.69	4.21	3.27	3.22															
135	5.84	5.35	4.24	4.26															
140	6.68	6.30	5.05	5.11															
145	7.12	6.86	5.60	5.62															
150	7.27	7.10	5.93	5.93															
155	7.27	7.10	6.20	6.17															
160	7.12	7.06	6.43	6.37															
165	6.68	6.89	6.58	6.49															
170	6.00	6.58	6.63	6.56															
175	5.67	6.36	6.46	6.50															
180	6.07	6.45	6.14	6.41															

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-12-04

γ Range: 0 - 180DEG
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