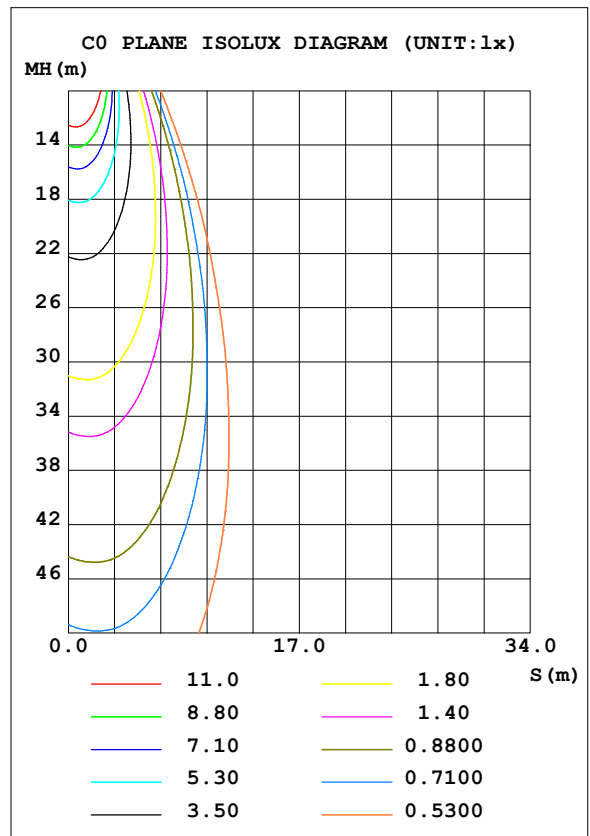
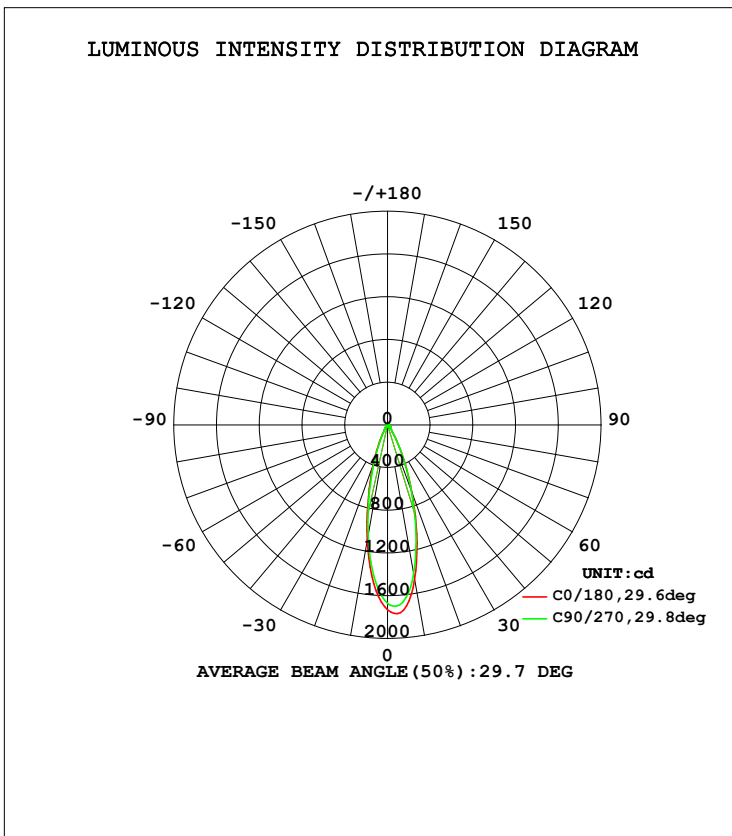


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: SD28AL3-7W-30D	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	SS3535-2700K	Imax (cd)	1770	S/MH (C0/180)	0.57
NOMINAL POWER (W)	7	LOR (%)	100.0	S/MH (C90/270)	0.57
RATED VOLTAGE (V)	12	TOTAL FLUX (lm)	627.82	η UP, DN (C0-180)	1.7, 58.0
NOMINAL FLUX (lm)	627.822	CIE CLASS	DIRECT	η UP, DN (C180-360)	1.6, 38.7
LAMPS INSIDE	1	η up (%)	3.3	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	12.1	η down (%)	96.7	CIBSE SHR MAX	0.50



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2022-03-31

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

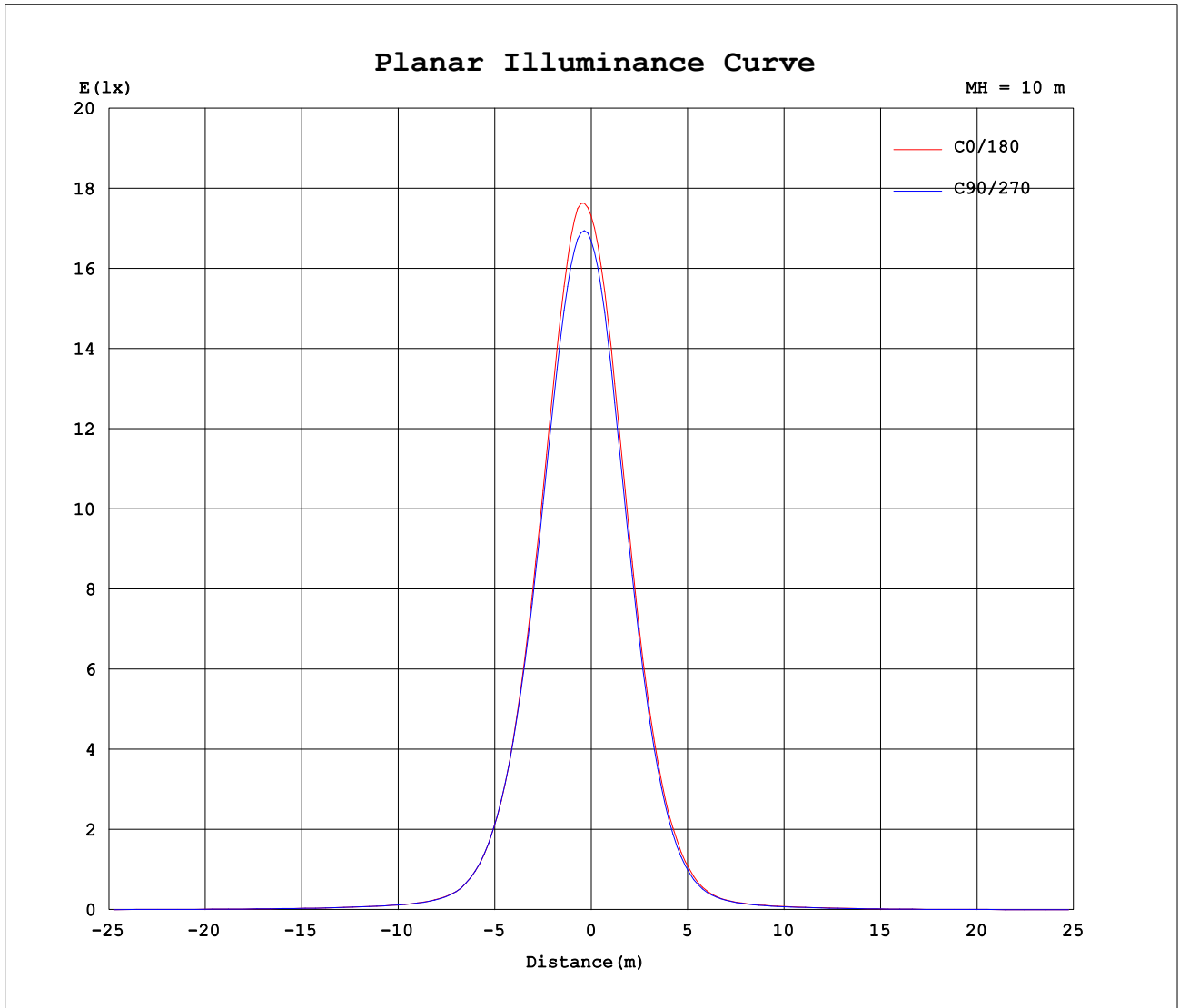
ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1466	1544	1413	1206	1095	1006	1052	1187	0- 10	139.1	139.1	22.2,22.2
20	664.8	745.9	654.6	493.6	387.4	334.9	367.0	465.9	10- 20	234.0	373.1	59.4,59.4
30	178.1	220.9	179.1	130.4	86.87	73.86	80.59	109.3	20- 30	129.6	502.8	80.1,80.1
40	48.68	53.45	47.34	40.99	30.09	28.38	28.46	32.25	30- 40	43.61	546.4	87,87
50	27.67	29.40	28.25	26.29	19.37	18.07	18.20	19.25	40- 50	22.68	569.0	90.6,90.6
60	18.42	19.48	18.35	17.09	11.41	10.81	11.18	12.07	50- 60	16.93	586.0	93.3,93.3
70	11.28	11.66	11.06	10.38	6.116	5.710	6.026	6.641	60- 70	11.41	597.4	95.1,95.1
80	6.105	6.589	6.019	5.478	2.472	2.107	2.288	2.773	70- 80	6.652	604.0	96.2,96.2
90	2.675	2.929	2.769	2.574	0.5794	0.5949	0.5991	0.5838	80- 90	2.975	607.0	96.7,96.7
100	2.082	2.055	2.070	2.044	0.9710	1.010	1.069	0.9156	90-100	1.624	608.6	96.9,96.9
110	2.077	2.047	2.041	2.105	1.660	1.862	1.953	1.768	100-110	1.805	610.4	97.2,97.2
120	2.426	2.368	2.411	2.619	2.823	3.225	3.226	3.021	110-120	2.292	612.7	97.6,97.6
130	3.439	3.295	3.431	3.789	4.215	4.433	4.521	4.355	120-130	2.973	615.7	98.1,98.1
140	4.887	4.744	4.895	5.257	5.221	5.283	5.331	5.170	130-140	3.497	619.2	98.6,98.6
150	6.104	6.031	6.089	6.293	5.788	5.765	5.769	5.612	140-150	3.474	622.7	99.2,99.2
160	6.602	6.618	6.555	6.516	6.007	5.923	5.876	5.799	150-160	2.835	625.5	99.6,99.6
170	6.442	6.399	6.313	6.089	5.913	5.831	5.780	5.714	160-170	1.753	627.3	99.9,99.9
180	6.160	6.105	5.960	5.831	6.156	6.054	5.984	5.804	170-180	0.5723	627.8	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:2022-03-31

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



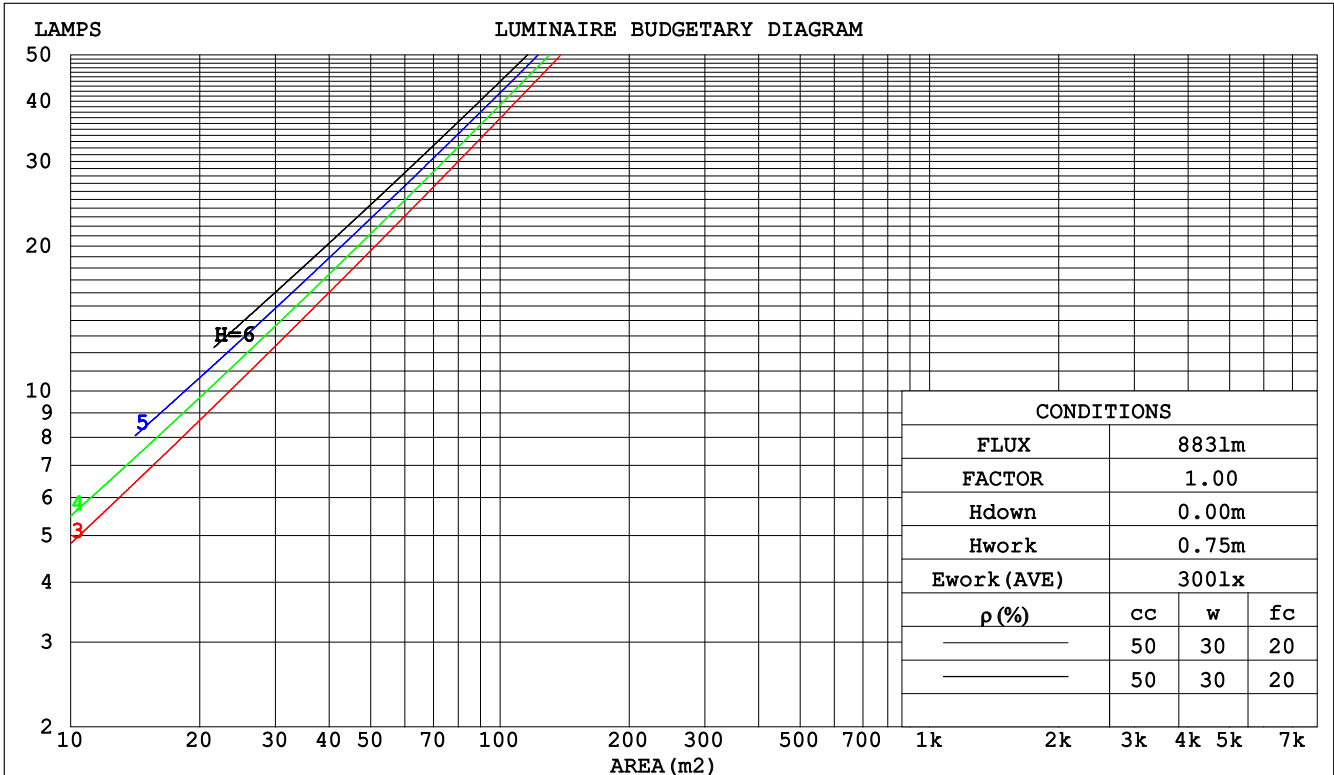
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2022-03-31

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-30D	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	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	1.10	1.08	1.05	1.08	1.05	1.03	1.03	1.01	.00	.99	.97	.96	.95	.94	.93	.91
2.0	1.03	.99	.96	1.01	.98	.95	.97	.94	.92	.94	.92	.90	.91	.89	.87	.85
3.0	.97	.92	.89	.95	.91	.88	.92	.89	.86	.89	.87	.84	.87	.84	.82	.81
4.0	.92	.87	.83	.90	.86	.82	.88	.84	.81	.85	.82	.79	.83	.80	.78	.77
5.0	.87	.82	.78	.86	.81	.77	.84	.80	.76	.82	.78	.75	.80	.77	.74	.73
6.0	.83	.77	.74	.82	.77	.73	.80	.76	.72	.78	.75	.72	.77	.74	.71	.70
7.0	.79	.74	.70	.78	.73	.70	.77	.72	.69	.75	.71	.69	.74	.71	.68	.67
8.0	.76	.70	.67	.75	.70	.67	.74	.69	.66	.72	.69	.66	.71	.68	.65	.64
9.0	.73	.67	.64	.72	.67	.64	.71	.66	.63	.70	.66	.63	.69	.65	.63	.62
10.0	.70	.65	.61	.69	.65	.61	.68	.64	.61	.67	.63	.61	.66	.63	.60	.59



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2022-03-31

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-30D	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	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	.176	.100	.032	.168	.096	.030	.153	.088	.028	.140	.081	.026	.128	.074	.024	
2.0	.163	.090	.027	.157	.086	.027	.145	.080	.025	.133	.075	.023	.123	.069	.022	
3.0	.152	.081	.024	.147	.079	.024	.136	.074	.022	.126	.069	.021	.117	.065	.020	
4.0	.143	.074	.022	.138	.072	.021	.129	.068	.020	.120	.064	.019	.112	.061	.019	
5.0	.134	.068	.020	.130	.067	.019	.122	.063	.019	.114	.060	.018	.107	.057	.017	
6.0	.126	.063	.018	.123	.062	.018	.116	.059	.017	.109	.057	.017	.103	.054	.016	
7.0	.120	.059	.017	.116	.058	.017	.110	.056	.016	.104	.053	.016	.099	.051	.015	
8.0	.114	.055	.016	.111	.054	.015	.105	.052	.015	.100	.050	.015	.095	.049	.014	
9.0	.108	.052	.015	.105	.051	.014	.100	.050	.014	.096	.048	.014	.091	.046	.013	
10.0	.103	.049	.014	.101	.049	.014	.096	.047	.013	.092	.046	.013	.088	.044	.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	.216	.216	.216	.184	.184	.184	.126	.126	.126	.072	.072	.072	.023	.023	.023	
1.0	.196	.183	.170	.168	.157	.147	.115	.108	.101	.066	.062	.059	.021	.020	.019	
2.0	.181	.158	.139	.155	.136	.120	.106	.094	.084	.061	.055	.049	.020	.018	.016	
3.0	.168	.139	.117	.144	.120	.101	.099	.083	.071	.057	.049	.042	.018	.016	.014	
4.0	.156	.125	.100	.134	.108	.087	.092	.075	.061	.053	.044	.036	.017	.014	.012	
5.0	.147	.113	.087	.126	.098	.076	.087	.068	.054	.050	.040	.032	.016	.013	.011	
6.0	.139	.103	.078	.119	.089	.068	.082	.063	.048	.048	.037	.028	.015	.012	.009	
7.0	.132	.095	.070	.113	.083	.061	.078	.058	.043	.045	.034	.026	.015	.011	.009	
8.0	.125	.089	.064	.108	.077	.056	.075	.054	.040	.043	.032	.024	.014	.010	.008	
9.0	.120	.084	.059	.103	.073	.052	.072	.051	.037	.042	.030	.022	.014	.010	.007	
10.0	.115	.079	.055	.099	.069	.048	.069	.048	.034	.040	.029	.020	.013	.009	.007	

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2022-03-31

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-30D					TYPE: SPOT LIGHT					WEIGHT:					
DIM.:					SPEC.:					SERIAL No.:					
MFR.:					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	21.5	22.3	21.7	22.5	22.7	21.5	22.3	21.7	22.5	22.7					
3H	22.5	23.2	22.8	23.5	23.7	22.4	23.2	22.7	23.5	23.7					
4H	23.0	23.7	23.3	24.0	24.3	22.9	23.7	23.3	23.9	24.2					
6H	23.5	24.2	23.8	24.5	24.8	23.4	24.1	23.8	24.4	24.7					
8H	23.7	24.4	24.1	24.7	25.0	23.7	24.3	24.0	24.6	25.0					
12H	24.0	24.6	24.3	24.9	25.3	23.9	24.6	24.3	24.9	25.2					
4H 2H	21.9	22.6	22.2	22.9	23.1	21.9	22.6	22.2	22.9	23.1					
3H	23.1	23.7	23.5	24.1	24.4	23.1	23.7	23.4	24.0	24.4					
4H	23.8	24.3	24.2	24.7	25.1	23.7	24.3	24.1	24.7	25.0					
6H	24.4	24.9	24.8	25.3	25.7	24.4	24.9	24.8	25.3	25.7					
8H	24.7	25.2	25.2	25.6	26.1	24.7	25.2	25.1	25.6	26.0					
12H	25.1	25.5	25.5	25.9	26.4	25.0	25.5	25.5	25.9	26.4					
8H 4H	24.0	24.5	24.5	24.9	25.3	24.0	24.5	24.4	24.9	25.3					
6H	24.9	25.3	25.4	25.7	26.2	24.8	25.2	25.3	25.7	26.2					
8H	25.3	25.7	25.8	26.1	26.7	25.3	25.6	25.8	26.1	26.6					
12H	25.8	26.1	26.3	26.6	27.2	25.8	26.1	26.3	26.6	27.1					
12H 4H	24.0	24.5	24.5	24.9	25.4	24.0	24.4	24.5	24.9	25.3					
6H	25.0	25.3	25.5	25.8	26.3	24.9	25.3	25.4	25.8	26.3					
8H	25.5	25.8	26.0	26.3	26.8	25.5	25.8	26.0	26.3	26.8					
Variations with the observer position at spacings:															
S = 1.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.3									
1.5H	+ 0.3 / - 0.2					+ 0.2 / - 0.2									
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3									

CIE Pub.117 Corrected 627.8 lm Total Lamp Luminous Flux. (8log(F/F0) = -1.6)

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2022-03-31

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-30D	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

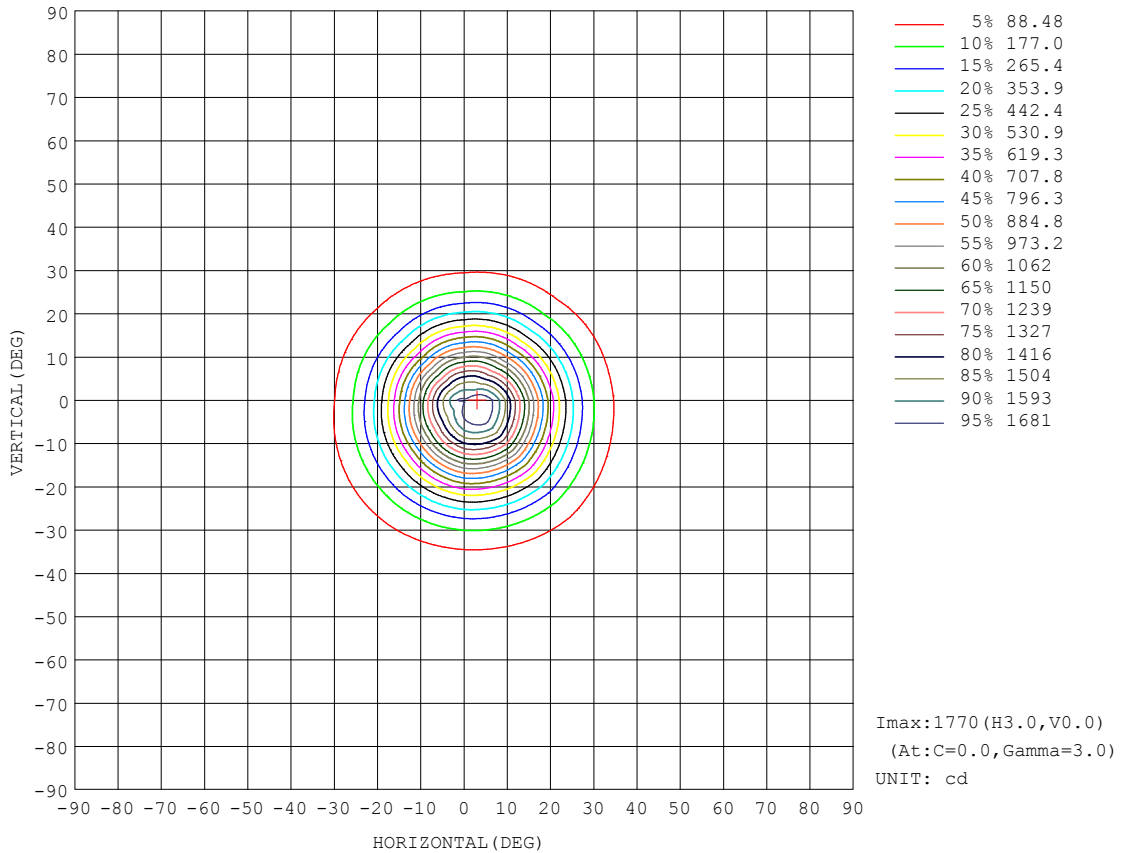
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	84	77	73	83	76	73	82	76	72	68
0.80	91	85	81	90	84	80	89	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: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2022-03-31

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-30D	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

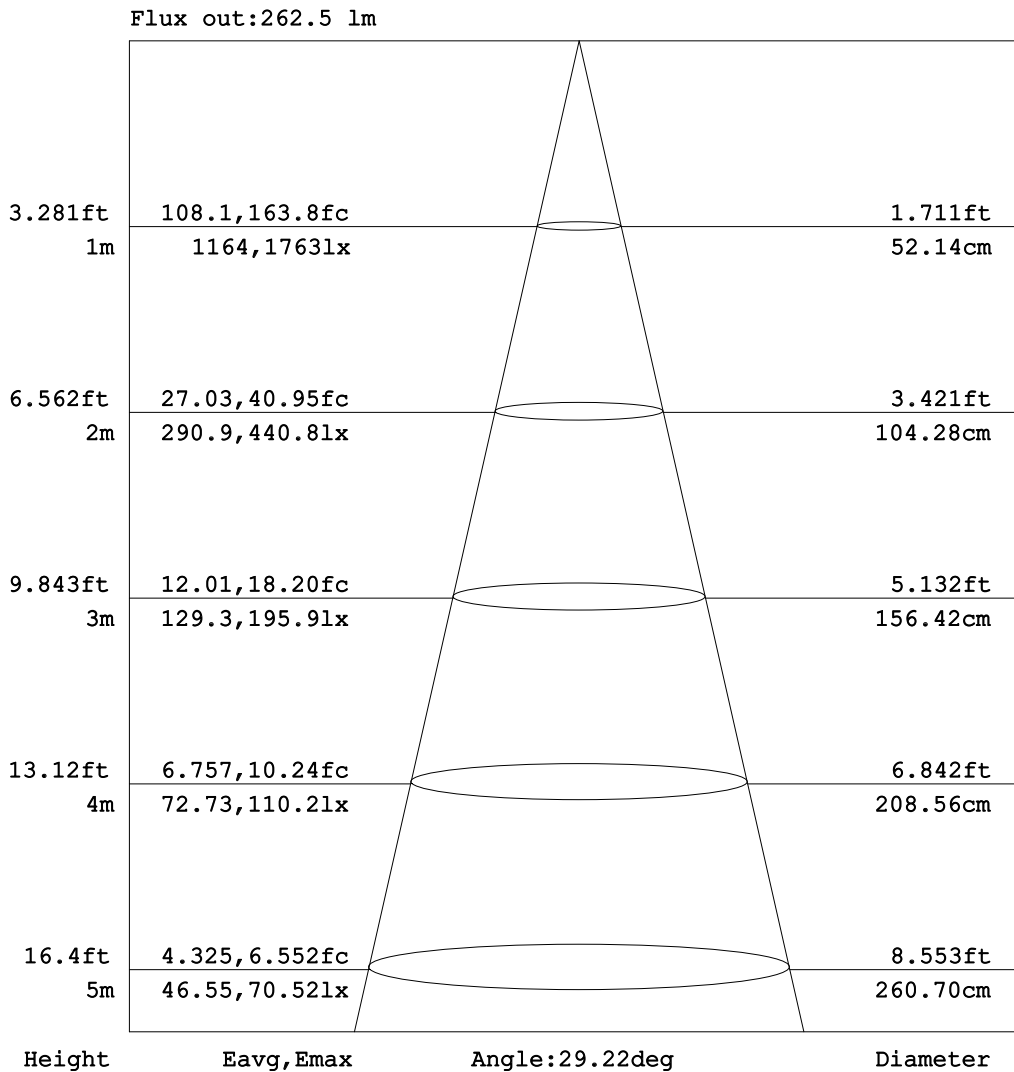


C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2022-03-31

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-30D	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



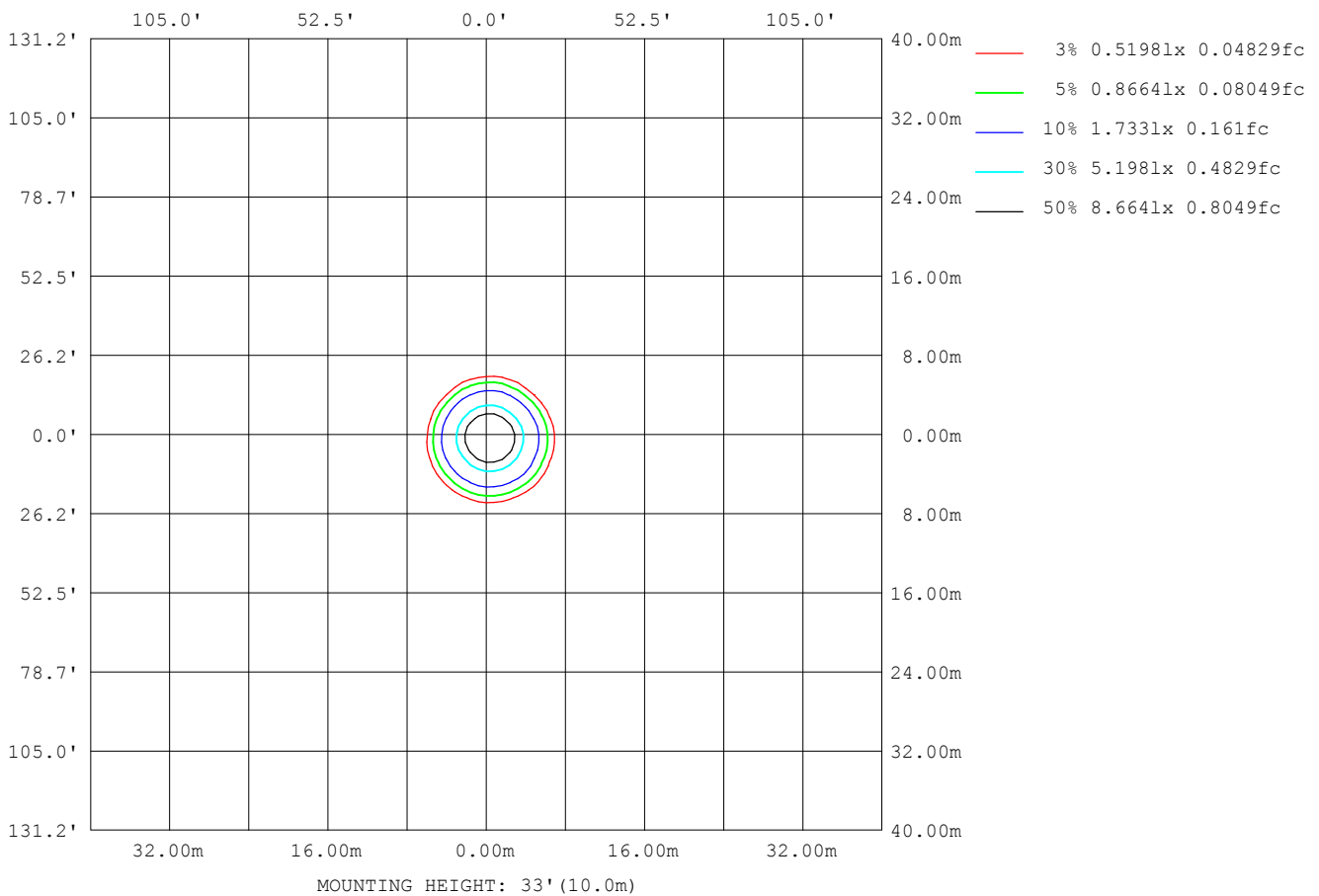
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2022-03-31

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-30D	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2022-03-31

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-30D	TYPE: SPOT LIGHT	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	45	90	135	180	225	270	315										
0	1732	1697	1670	1644	1732	1697	1670	1644										
5	1740	1756	1664	1524	1490	1408	1438	1521										
10	1466	1544	1413	1206	1095	1006	1052	1187										
15	1061	1159	1030	825	695	618	667	805										
20	665	746	655	494	387	335	367	466										
25	364	433	366	270	194	164	178	235										
30	178	221	179	130	86.9	73.9	80.6	109										
35	83.6	101	82.4	64.5	44.5	40.7	43.0	52.8										
40	48.7	53.4	47.3	41.0	30.1	28.4	28.5	32.3										
45	34.7	37.0	34.6	32.0	23.7	22.3	22.0	23.6										
50	27.7	29.4	28.3	26.3	19.4	18.1	18.2	19.2										
55	22.9	24.2	23.1	21.4	15.1	14.2	14.6	15.6										
60	18.4	19.5	18.3	17.1	11.4	10.8	11.2	12.1										
65	14.5	15.2	14.3	13.4	8.47	8.03	8.34	9.17										
70	11.3	11.7	11.1	10.4	6.12	5.71	6.03	6.64										
75	8.52	8.94	8.36	7.78	4.10	3.75	4.00	4.55										
80	6.10	6.59	6.02	5.48	2.47	2.11	2.29	2.77										
85	4.10	4.54	4.14	3.70	1.19	0.96	1.04	1.34										
90	2.68	2.93	2.77	2.57	0.58	0.59	0.60	0.58										
95	2.16	2.16	2.19	2.11	0.72	0.74	0.78	0.66										
100	2.08	2.05	2.07	2.04	0.97	1.01	1.07	0.92										
105	2.05	2.04	2.03	2.04	1.26	1.38	1.46	1.28										
110	2.08	2.05	2.04	2.11	1.66	1.86	1.95	1.77										
115	2.17	2.14	2.15	2.29	2.19	2.54	2.56	2.36										
120	2.43	2.37	2.41	2.62	2.82	3.22	3.23	3.02										
125	2.85	2.74	2.84	3.12	3.53	3.82	3.91	3.71										
130	3.44	3.30	3.43	3.79	4.22	4.43	4.52	4.35										
135	4.15	3.98	4.15	4.53	4.78	4.92	4.99	4.83										
140	4.89	4.74	4.90	5.26	5.22	5.28	5.33	5.17										
145	5.56	5.44	5.56	5.86	5.55	5.55	5.57	5.40										
150	6.10	6.03	6.09	6.29	5.79	5.76	5.77	5.61										
155	6.45	6.43	6.42	6.51	5.97	5.89	5.86	5.75										
160	6.60	6.62	6.56	6.52	6.01	5.92	5.88	5.80										
165	6.59	6.56	6.51	6.36	5.98	5.92	5.82	5.80										
170	6.44	6.40	6.31	6.09	5.91	5.83	5.78	5.71										
175	6.25	6.18	6.07	5.87	6.02	5.86	5.80	5.67										
180	6.16	6.11	5.96	5.83	6.16	6.05	5.98	5.80										

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2022-03-31

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: