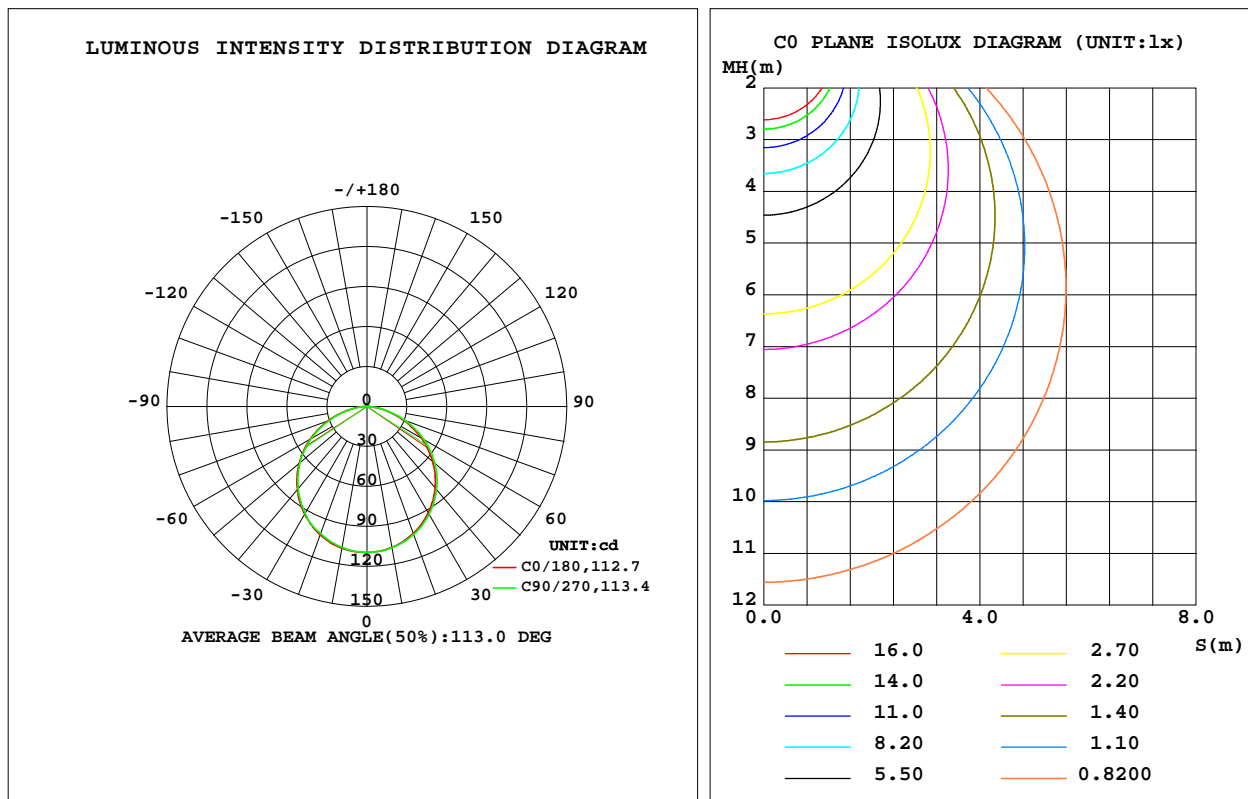


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.00V I:0.2714A P:6.514W PF:1.000 Freq:0Hz Lamp Flux:318.487x1 lm		
NAME: ALS-LR1613FDXSS1000	TYPE:	WEIGHT:
SPEC.:ALS-LR1613FDXSS1000-F7NW9X-DC	DIM.: 1000*16*13mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*16	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 48.89 lm/W			
MODEL	ALS-LR1613FDXSS1000	I _{max} (cd)	109.6	S/MH(C0/180)	1.25
NOMINAL POWER(W)	7	LOR(%)	100.0	S/MH(C90/270)	1.26
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	318.49	h UP,DN(C0-180)	0.8,49.3
NOMINAL FLUX(lm)	318.487	CIE CLASS	DIRECT	h UP,DN(C180-360)	0.7,49.2
LAMPS INSIDE	1	h up(%)	1.5	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	h down(%)	98.5	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2021-03-28

g Range: 0 - 180DEG
Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

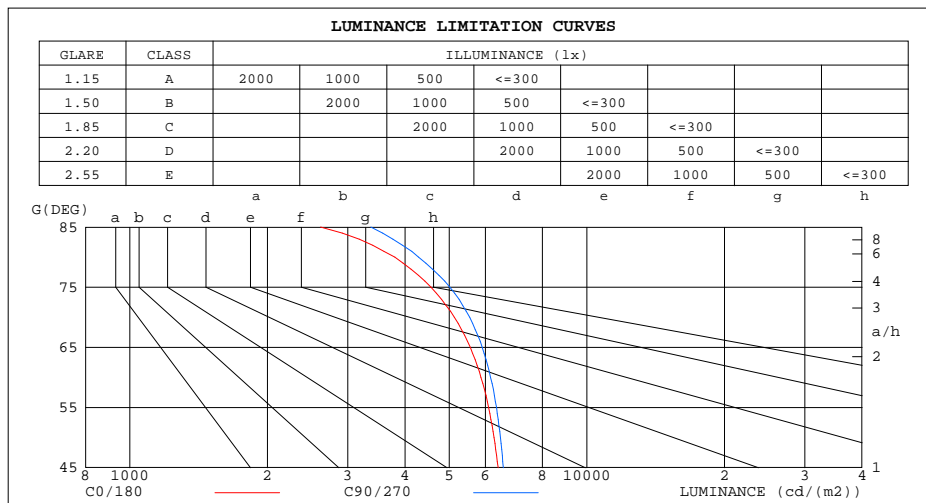
g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum,lamp
10	107.4	107.7	107.7	108.0	108.0	107.7	107.4	107.3	0- 10	10.37	10.37	3.25,3.25
20	101.5	102.0	102.3	102.7	102.5	102.1	101.6	101.4	10- 20	29.72	40.09	12.6,12.6
30	92.10	93.00	93.40	94.15	93.50	93.04	92.71	92.06	20- 30	45.15	85.24	26.8,26.8
40	79.67	80.75	81.35	82.09	81.36	80.91	80.36	79.58	30- 40	54.58	139.8	43.9,43.9
50	64.45	65.62	66.55	67.25	66.54	65.96	65.67	64.37	40- 50	56.75	196.6	61.7,61.7
60	46.94	48.20	49.28	50.06	49.38	48.76	48.35	46.94	50- 60	51.29	247.9	77.8,77.8
70	28.08	29.23	30.33	31.17	30.67	30.11	29.62	28.15	60- 70	38.74	286.6	90,90
80	10.56	11.24	11.91	12.86	12.72	12.26	11.70	10.61	70- 80	21.56	308.2	96.8,96.8
90	0.3259	0.3605	0.6415	0.8300	0.7134	0.6048	0.3598	0.3440	80- 90	5.571	313.7	98.5,98.5
100	0.2874	0.3882	0.3411	0.3678	0.2338	0.3005	0.1942	0.3005	90-100	0.3490	314.1	98.6,98.6
110	0.5343	0.5481	0.5273	0.4753	0.4415	0.4140	0.4544	0.4604	100-110	0.4021	314.5	98.7,98.7
120	0.7806	0.7886	0.7667	0.6956	0.6615	0.6061	0.6816	0.6078	110-120	0.5773	315.1	98.9,98.9
130	1.028	1.036	0.9681	0.9358	0.8823	0.8282	0.8552	0.8283	120-130	0.7238	315.8	99.1,99.1
140	1.249	1.209	1.136	1.136	1.089	1.042	0.9688	0.9681	130-140	0.7829	316.6	99.4,99.4
150	1.409	1.289	1.242	1.330	1.229	1.256	1.136	1.062	140-150	0.7339	317.3	99.6,99.6
160	1.569	1.369	1.476	1.503	1.389	1.462	1.409	1.235	150-160	0.6127	317.9	99.8,99.8
170	1.636	1.577	1.690	1.657	1.416	1.590	1.657	1.496	160-170	0.4231	318.3	100,100
180	1.576	1.797	1.817	1.830	1.556	1.797	1.857	1.810	170-180	0.1574	318.5	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JYH
 Test Date:2021-03-28

g Range: 0 - 180DEG
 Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:10.950m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:24.00V I:0.2714A P:6.514W PF:1.000 Freq:0Hz Lamp Flux:318.487x1 lm		
NAME: ALS-LR1613FDXSS1000	TYPE:	WEIGHT:
SPEC.:ALS-LR1613FDXSS1000-F7NW9X-DC	DIM.: 1000*16*13mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*16	Shielding Angle:



LUMINANCE cd/(m2)		
G(180)	C0/180	C90/270
85	2616	3368
80	3802	4286
75	4563	5019
70	5131	5542
65	5559	5904
60	5868	6160
55	6095	6344
50	6266	6470
45	6397	6568

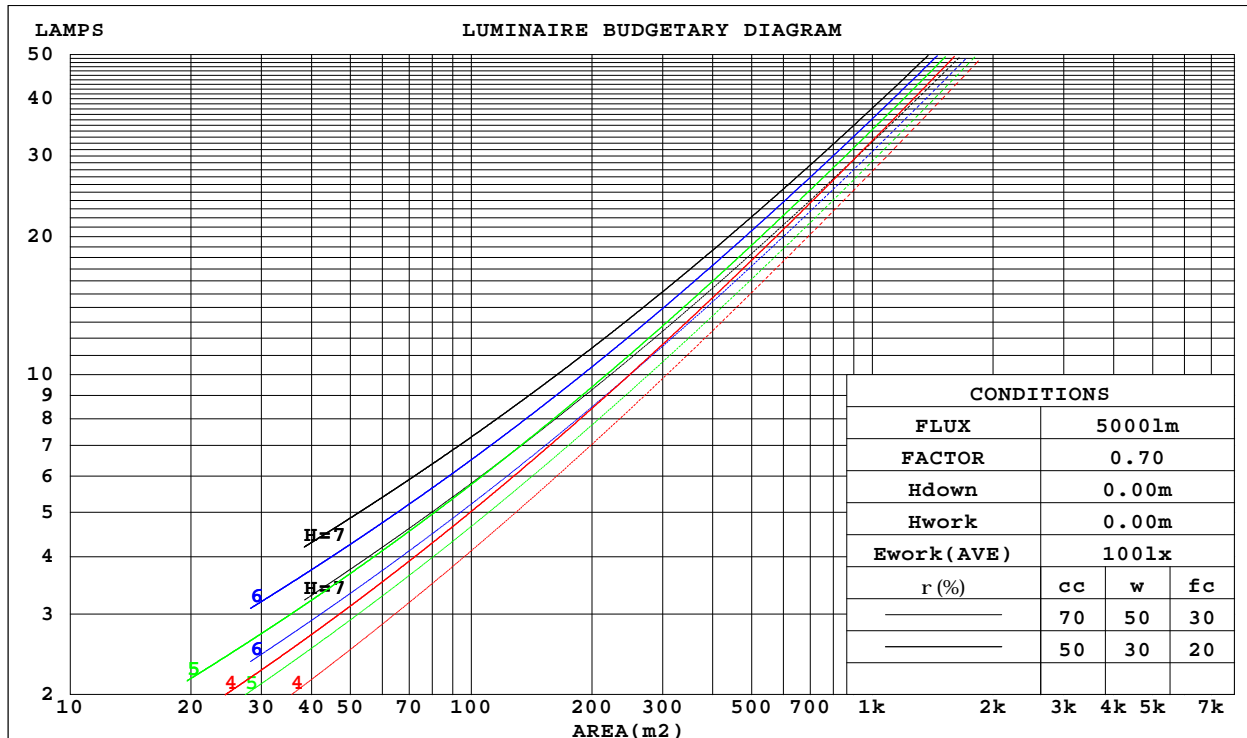
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2021-03-28

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.00V I:0.2714A P:6.514W PF:1.000 Freq:0Hz Lamp Flux:318.487x1 lm		
NAME: ALS-LR1613FDXSS1000	TYPE:	WEIGHT:
SPEC.:ALS-LR1613FDXSS1000-F7NW9X-DC	DIM.: 1000*16*13mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*16	Shielding Angle:

r _{cc}	80%			70%			50%			30%			10%			0
r _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r _{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	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	.99
1.0	1.04	.99	.96	1.01	.97	.94	.97	.93	.91	.93	.90	.88	.89	.87	.85	.82
2.0	.90	.83	.78	.88	.82	.77	.84	.79	.75	.81	.77	.73	.78	.74	.71	.69
3.0	.79	.71	.64	.77	.70	.64	.74	.68	.62	.71	.66	.61	.69	.64	.60	.58
4.0	.70	.61	.55	.69	.60	.54	.66	.59	.53	.63	.57	.52	.61	.56	.51	.49
5.0	.63	.54	.47	.61	.53	.47	.59	.52	.46	.57	.50	.45	.55	.49	.45	.42
6.0	.56	.47	.41	.55	.47	.41	.53	.46	.40	.51	.45	.40	.50	.44	.39	.37
7.0	.51	.42	.36	.50	.42	.36	.48	.41	.35	.47	.40	.35	.45	.39	.35	.33
8.0	.46	.38	.32	.46	.38	.32	.44	.37	.32	.43	.36	.31	.42	.36	.31	.29
9.0	.43	.34	.29	.42	.34	.29	.41	.34	.28	.40	.33	.28	.38	.32	.28	.26
10.0	.39	.31	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.25	.24



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2021-03-28

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:24.00V I:0.2714A P:6.514W PF:1.000 Freq:0Hz Lamp Flux:318.487x1 lm		
NAME: ALS-LR1613FDXSS1000	TYPE:	WEIGHT:
SPEC.:ALS-LR1613FDXSS1000-F7NW9X-DC	DIM.: 1000*16*13mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*16	Shielding Angle:

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															

rcc	80%			70%			50%			30%			10%			0	
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
rfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)										
0.0	.202	.202	.202	.173	.173	.173	.118	.118	.118	.068	.068	.068	.022	.022	.022		
1.0	.192	.168	.146	.164	.144	.126	.112	.099	.087	.065	.057	.051	.021	.018	.016		
2.0	.184	.143	.110	.157	.124	.095	.108	.085	.066	.062	.050	.039	.020	.016	.013		
3.0	.176	.126	.086	.151	.109	.075	.104	.075	.052	.060	.044	.031	.019	.014	.010		
4.0	.168	.113	.070	.144	.097	.061	.099	.068	.043	.057	.040	.025	.018	.013	.008		
5.0	.161	.102	.059	.138	.088	.051	.095	.062	.036	.055	.036	.021	.018	.012	.007		
6.0	.154	.094	.051	.132	.081	.044	.091	.057	.031	.053	.033	.019	.017	.011	.006		
7.0	.147	.087	.045	.126	.075	.039	.087	.053	.028	.051	.031	.017	.016	.010	.005		
8.0	.141	.081	.041	.121	.071	.035	.084	.050	.025	.049	.029	.015	.016	.010	.005		
9.0	.135	.076	.037	.116	.066	.032	.080	.047	.023	.047	.028	.014	.015	.009	.005		
10.0	.129	.072	.034	.111	.063	.030	.077	.044	.021	.045	.026	.013	.015	.009	.004		

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2021-03-28

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:24.00V I:0.2714A P:6.514W PF:1.000 Freq:0Hz Lamp Flux:318.487x1 lm											
NAME: ALS-LR1613FDXSS1000						TYPE:		WEIGHT:			
SPEC.:ALS-LR1613FDXSS1000-F7NW9X-DC						DIM.: 1000*16*13mm		SERIAL No.:			
MFR.: COLORS						SUR.:1000*16		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	23.0	24.5	23.3	24.8	25.0	23.2	24.7	23.5	24.9	25.2	
	3H	24.5	25.8	24.8	26.1	26.4	24.7	26.1	25.0	26.3	26.6
	4H	25.0	26.3	25.3	26.6	26.9	25.3	26.6	25.6	26.9	27.1
	6H	25.3	26.5	25.7	26.8	27.1	25.6	26.9	26.0	27.2	27.5
	8H	25.4	26.6	25.7	26.9	27.2	25.7	26.9	26.1	27.2	27.6
	12H	25.4	26.6	25.8	26.9	27.2	25.8	26.9	26.2	27.3	27.6
4H	2H	23.6	25.0	24.0	25.2	25.5	23.8	25.1	24.1	25.4	25.7
	3H	25.2	26.4	25.6	26.7	27.0	25.4	26.6	25.8	26.9	27.3
	4H	25.9	26.9	26.3	27.3	27.6	26.1	27.2	26.5	27.5	27.9
	6H	26.3	27.2	26.7	27.6	28.0	26.6	27.5	27.0	27.9	28.3
	8H	26.4	27.3	26.9	27.7	28.1	26.8	27.6	27.2	28.0	28.4
	12H	26.5	27.3	26.9	27.7	28.1	26.8	27.6	27.3	28.1	28.5
8H	4H	26.1	27.0	26.6	27.4	27.8	26.3	27.2	26.8	27.6	28.0
	6H	26.7	27.4	27.1	27.8	28.3	27.0	27.7	27.4	28.1	28.6
	8H	26.9	27.5	27.4	28.0	28.4	27.2	27.8	27.7	28.3	28.8
	12H	27.0	27.5	27.5	28.0	28.5	27.3	27.9	27.8	28.3	28.9
12H	4H	26.1	26.9	26.6	27.3	27.8	26.3	27.1	26.8	27.5	28.0
	6H	26.7	27.4	27.2	27.8	28.3	27.0	27.6	27.5	28.1	28.6
	8H	26.9	27.5	27.4	28.0	28.5	27.2	27.8	27.7	28.3	28.8
Variations with the observer position at spacings:											
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					

CIE Pub.117, 318.5 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -4.0)

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2021-03-28

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:24.00V I:0.2714A P:6.514W PF:1.000 Freq:0Hz Lamp Flux:318.487x1 lm		
NAME: ALS-LR1613FDXSS1000	TYPE:	WEIGHT:
SPEC.:ALS-LR1613FDXSS1000-F7NW9X-DC	DIM.: 1000*16*13mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*16	Shielding Angle:

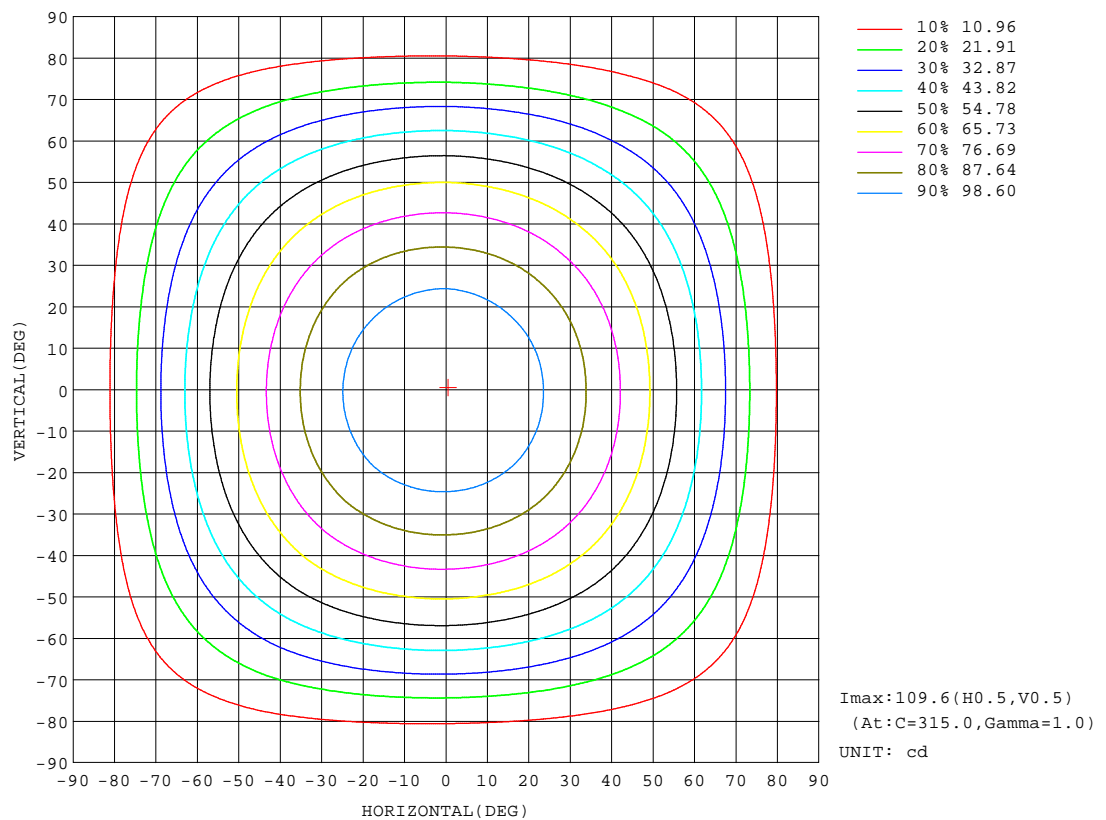
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	57	45	38	56	45	38	55	45	38	32
0.80	67	55	48	66	55	48	64	54	47	40
1.00	76	64	57	74	64	57	72	65	56	49
1.25	83	72	65	81	71	65	78	70	64	56
1.50	88	78	71	86	77	70	83	75	69	61
2.00	95	86	80	93	85	79	89	82	77	69
2.50	98	91	85	96	89	84	92	86	82	73
3.00	102	95	89	100	93	88	95	90	86	77
4.00	106	100	96	103	98	94	99	95	91	82
5.00	108	103	99	106	101	98	101	98	94	85
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:JYH
Test Date:2021-03-28

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:24.00V I:0.2714A P:6.514W PF:1.000 Freq:0Hz Lamp Flux:318.487x1 lm		
NAME: ALS-LR1613FDXSS1000	TYPE:	WEIGHT:
SPEC.:ALS-LR1613FDXSS1000-F7NW9X-DC	DIM.: 1000*16*13mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*16	Shielding Angle:



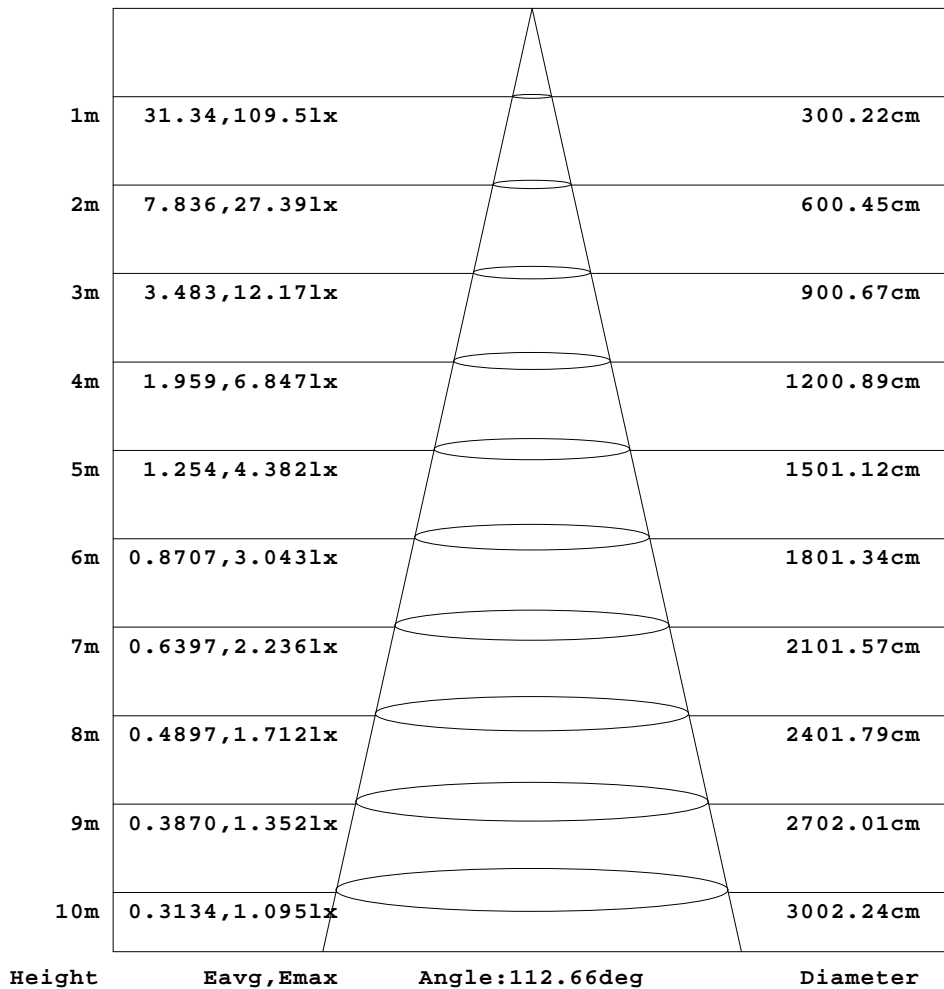
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2021-03-28

Range: 0 - 180DEG
Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

AAI Figure

Test:U:24.00V I:0.2714A P:6.514W PF:1.000 Freq:0Hz Lamp Flux:318.487x1 lm		
NAME: ALS-LR1613FDXSS1000	TYPE:	WEIGHT:
SPEC.:ALS-LR1613FDXSS1000-F7NW9X-DC	DIM.: 1000*16*13mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*16	Shielding Angle:

Flux out:233.5 lm



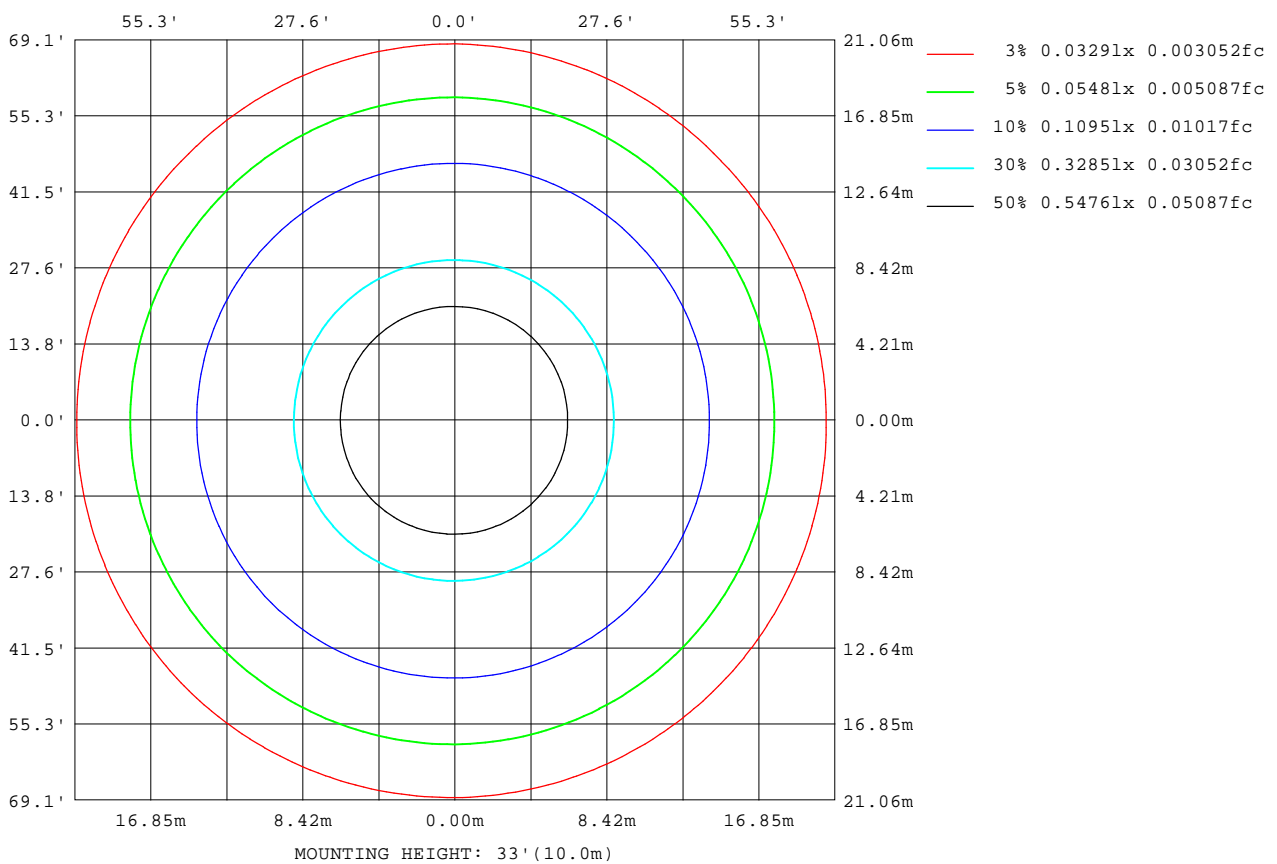
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2021-03-28

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

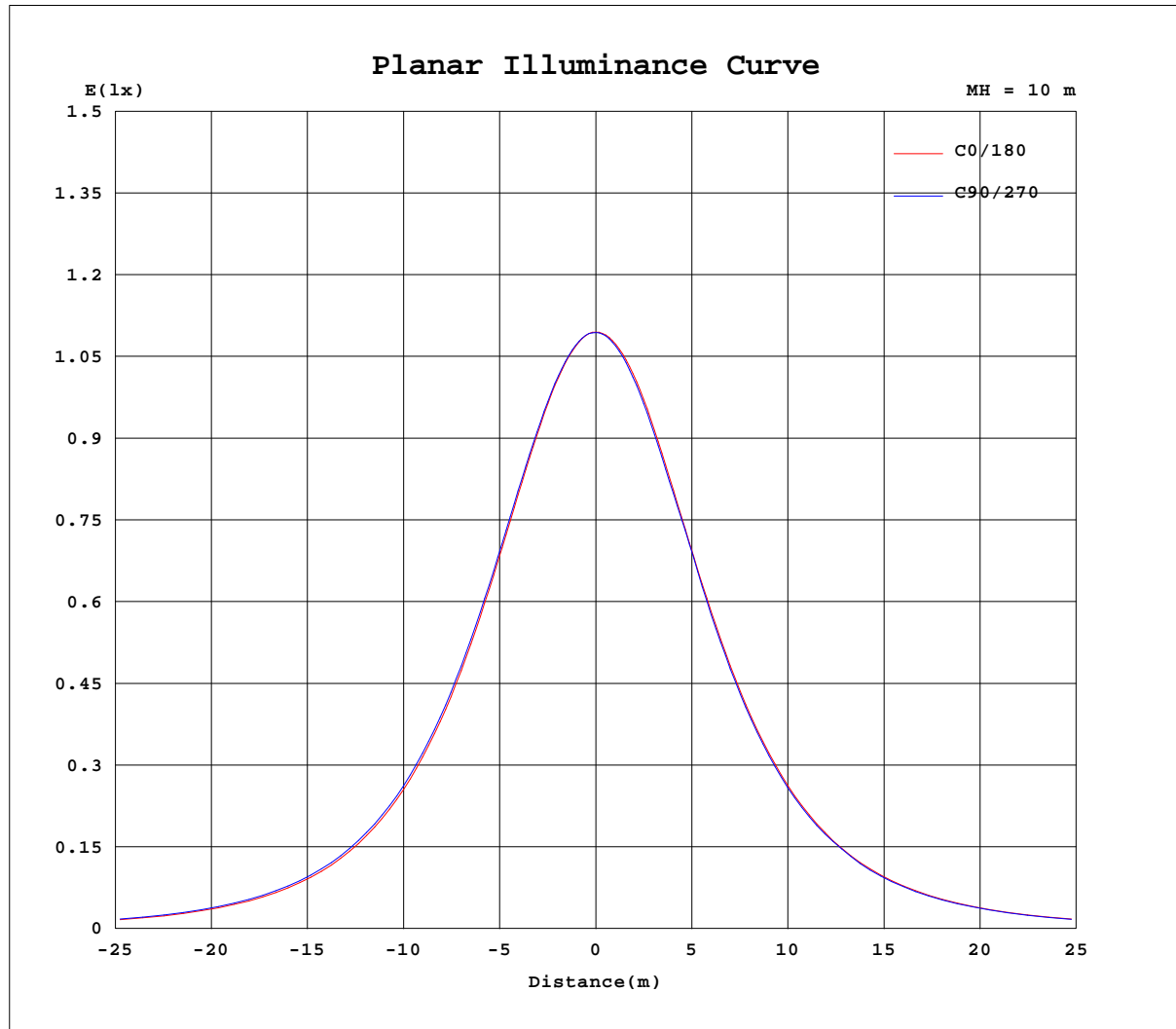
Test:U:24.00V I:0.2714A P:6.514W PF:1.000 Freq:0Hz Lamp Flux:318.487x1 lm		
NAME: ALS-LR1613FDXSS1000	TYPE:	WEIGHT:
SPEC.:ALS-LR1613FDXSS1000-F7NW9X-DC	DIM.: 1000*16*13mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*16	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JYH
 Test Date: 2021-03-28

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 10.950m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JYH
Test Date: 2021-03-28

deg Range: 0 - 180DEG
deg Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 10.950m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.00V I:0.2714A P:6.514W PF:1.000 Freq:0Hz Lamp Flux:318.487x1 lm		
NAME: ALS-LR1613FDXSS1000	TYPE:	WEIGHT:
SPEC.:ALS-LR1613FDXSS1000-F7NW9X-DC	DIM.: 1000*16*13mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*16	Shielding Angle:

Table--1

UNIT: cd

C(DEG) g (DEG)	0	45	90	135	180	225	270	315										
0	110	110	109	110	110	110	109	110										
5	109	109	109	109	109	109	109	109										
10	107	108	108	108	108	108	107	107										
15	105	105	105	106	106	105	105	105										
20	102	102	102	103	103	102	102	101										
25	97.2	97.9	98.3	98.8	98.5	98.0	98.1	97.1										
30	92.1	93.0	93.4	94.1	93.5	93.0	92.7	92.1										
35	86.2	87.2	87.7	88.4	87.8	87.8	86.9	86.2										
40	79.7	80.8	81.3	82.1	81.4	80.9	80.4	79.6										
45	72.4	73.5	74.3	75.0	74.3	73.8	73.3	72.3										
50	64.4	65.6	66.5	67.3	66.5	66.0	65.7	64.4										
55	55.9	57.2	58.2	59.0	58.2	57.6	57.2	55.9										
60	46.9	48.2	49.3	50.1	49.4	48.8	48.4	46.9										
65	37.6	38.8	39.9	40.7	40.1	39.5	39.2	37.6										
70	28.1	29.2	30.3	31.2	30.7	30.1	29.6	28.1										
75	18.9	19.9	20.8	21.7	21.3	20.8	20.3	19.0										
80	10.6	11.2	11.9	12.9	12.7	12.3	11.7	10.6										
85	3.65	4.15	4.70	5.52	5.47	5.11	4.80	3.84										
90	0.33	0.36	0.64	0.83	0.71	0.60	0.36	0.34										
95	0.27	0.35	0.60	0.36	0.14	0.26	0.18	0.29										
100	0.29	0.39	0.34	0.37	0.23	0.30	0.19	0.30										
105	0.39	0.45	0.36	0.41	0.33	0.33	0.32	0.39										
110	0.53	0.55	0.53	0.48	0.44	0.41	0.45	0.46										
115	0.63	0.67	0.62	0.59	0.55	0.48	0.57	0.51										
120	0.78	0.79	0.77	0.70	0.66	0.61	0.68	0.61										
125	0.91	0.93	0.86	0.81	0.77	0.71	0.76	0.71										
130	1.03	1.04	0.97	0.94	0.88	0.83	0.86	0.83										
135	1.15	1.12	1.04	1.04	0.98	0.93	0.92	0.94										
140	1.25	1.21	1.14	1.14	1.09	1.04	0.97	0.97										
145	1.37	1.26	1.17	1.24	1.15	1.14	1.04	1.04										
150	1.41	1.29	1.24	1.33	1.23	1.26	1.14	1.06										
155	1.46	1.33	1.37	1.42	1.32	1.38	1.28	1.14										
160	1.57	1.37	1.48	1.50	1.39	1.46	1.41	1.24										
165	1.60	1.44	1.57	1.58	1.42	1.50	1.53	1.37										
170	1.64	1.58	1.69	1.66	1.42	1.59	1.66	1.50										
175	1.58	1.72	1.78	1.76	1.43	1.70	1.78	1.70										
180	1.58	1.80	1.82	1.83	1.56	1.80	1.86	1.81										

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2021-03-28

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks: