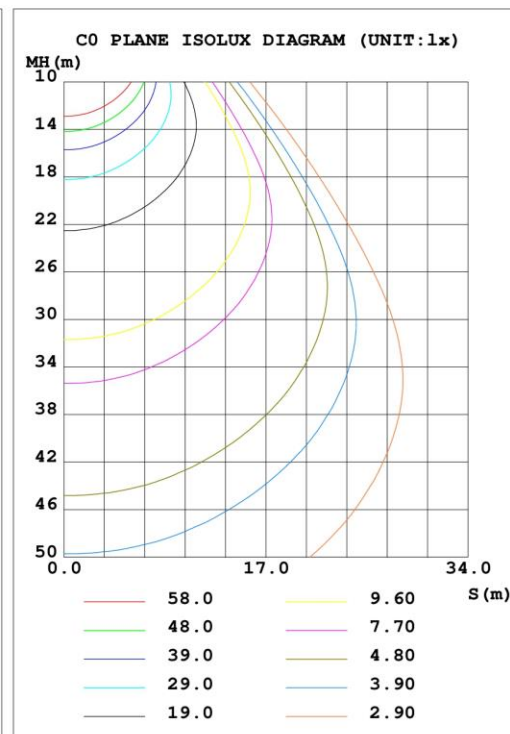
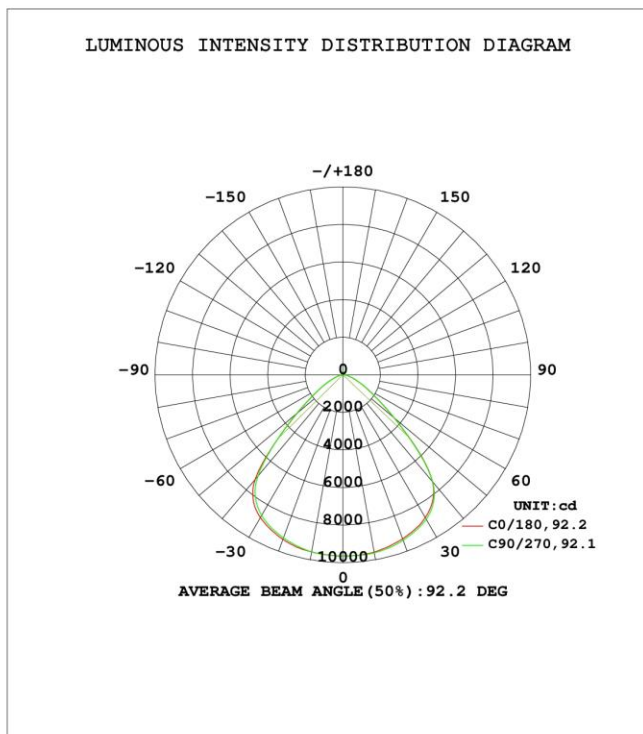


**LUMINAIRE PHOTOMETRIC TEST REPORT**

Test:U:220.0V I:0.5130A P:111.6W PF:0.9892 Freq:50.00Hz Lamp Flux:20885.2x1 lm		
NAME: SL-UFOA00-110W-R090-C	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:D0.23	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 187.09 lm/W			
MODEL SL-UFOA00-110W-R090-C		I <sub>max</sub> (cd)	9658	S/MH (C0/180)	1.31
NOMINAL POWER (W)	110	LOR (%)	100.0	S/MH (C90/270)	1.30
RATED VOLTAGE (V)	100-240	TOTAL FLUX (lm)	20885	η UP, DN (C0-180)	1.7, 49.9
NOMINAL FLUX (lm)	20885.2	CIE CLASS	DIRECT	η UP, DN (C180-360)	1.1, 47.2
LAMPS INSIDE	1	η up (%)	2.8	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	97.2	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 28.5DEG  
 Operators: lumingli  
 Test Date: 2019-06-21

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity: 55.0%  
 Test Distance: 11.340m [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	9584	9594	9623	9641	9576	9580	9572	9549	0- 10	918.5	918.5	4.4,4.4
20	9296	9316	9378	9428	9324	9288	9244	9206	10- 20	2680	3598	17.2,17.2
30	8770	8795	8876	8932	8780	8720	8646	8616	20- 30	4190	7788	37.3,37.3
40	7427	7364	7431	7412	7269	7084	7035	7053	30- 40	5119	12907	61.8,61.8
50	3554	3608	3574	3365	3164	3205	3215	3234	40- 50	4051	16959	81.2,81.2
60	1491	1578	1524	1482	1270	1346	1255	1327	50- 60	1991	18950	90.7,90.7
70	609.4	640.6	624.6	591.0	448.1	478.4	451.6	473.7	60- 70	906.8	19857	95.1,95.1
80	217.8	222.3	219.3	206.8	108.0	117.1	113.2	127.2	70- 80	345.7	20202	96.7,96.7
90	90.72	90.99	90.69	89.82	28.79	28.75	28.65	28.18	80- 90	94.36	20297	97.2,97.2
100	86.43	86.45	86.02	85.54	38.83	38.78	38.68	38.10	90-100	65.85	20363	97.5,97.5
110	91.63	91.52	90.97	90.80	52.12	52.06	51.95	51.23	100-110	70.30	20433	97.8,97.8
120	103.3	103.1	102.4	102.4	68.48	68.34	68.11	67.21	110-120	77.48	20510	98.2,98.2
130	118.1	117.7	117.1	117.0	87.39	87.16	86.92	85.90	120-130	83.88	20594	98.6,98.6
140	133.6	133.2	132.3	132.4	106.5	106.3	106.1	105.1	130-140	85.69	20680	99,99
150	146.2	146.0	145.3	145.4	123.9	123.6	123.4	122.4	140-150	79.66	20760	99.4,99.4
160	158.8	158.6	157.9	157.9	142.6	142.1	141.8	140.7	150-160	65.63	20825	99.7,99.7
170	167.9	168.0	167.3	167.2	159.3	158.7	158.3	157.3	160-170	44.30	20869	99.9,99.9
180	168.8	168.7	167.9	167.3	169.2	168.5	168.3	167.1	170-180	15.79	20885	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 15243 lm

%lum = 73.0%  
%lamp = 73.0%

Conical surface Flux(120deg): 18950 lm

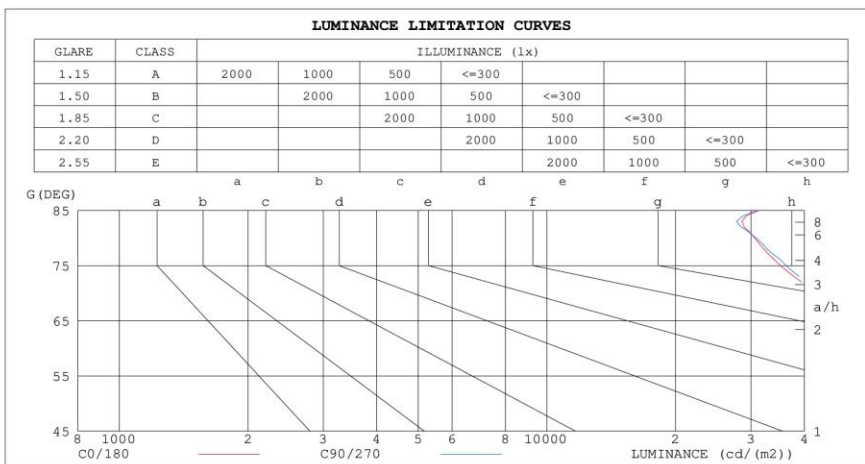
%lum = 90.7%  
%lamp = 90.7%

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:28.5DEG  
Operators:lumingli  
Test Date:2019-06-21

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:55.0%  
Test Distance:11.340m [K=1.0000]  
Remarks:

**LUMINANCE LIMITATION CURVES**

Test:U:220.0V I:0.5130A P:111.6W PF:0.9892 Freq:50.00Hz Lamp Flux:20885.2x1 lm		
NAME: SL-UFOA00-110W-R090-C	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:D0.23	Shielding Angle:



LUMINANCE cd/ (m2)		
G (DEG)	C0/180	C90/270
85	31454	31039
80	30592	30803
75	35165	36240
70	43456	44545
65	55862	57224
60	72723	74344
55	96138	97494
50	134848	135624
45	192387	189713

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:28.5DEG  
 Operators:lumingli  
 Test Date:2019-06-21

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:55.0%  
 Test Distance:11.340m [K=1.0000]  
 Remarks:

**WEC AND CCEC**

Test:U:220.0V I:0.5130A P:111.6W PF:0.9892 Freq:50.00Hz Lamp Flux:20885.2x1 lm		
NAME: SL-UFOA00-110W-R090-C	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:D0.23	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	.238	.136	.043	.231	.132	.042	.216	.124	.040	.203	.117	.038	.191	.110	.036	
2.0	.231	.127	.039	.224	.123	.038	.212	.118	.037	.200	.112	.035	.189	.107	.034	
3.0	.220	.117	.035	.214	.114	.034	.203	.110	.033	.192	.105	.032	.183	.101	.031	
4.0	.208	.108	.032	.202	.106	.031	.193	.102	.030	.183	.098	.030	.175	.095	.029	
5.0	.196	.100	.029	.191	.098	.029	.183	.095	.028	.174	.092	.027	.167	.089	.027	
6.0	.185	.093	.027	.181	.091	.026	.173	.089	.026	.166	.086	.025	.159	.084	.025	
7.0	.175	.086	.025	.171	.085	.024	.164	.083	.024	.157	.081	.023	.151	.079	.023	
8.0	.166	.081	.023	.162	.080	.023	.156	.078	.022	.150	.076	.022	.144	.074	.022	
9.0	.157	.076	.021	.154	.075	.021	.148	.073	.021	.142	.071	.020	.137	.070	.020	
10.0	.149	.071	.020	.146	.071	.020	.141	.069	.019	.136	.067	.019	.131	.066	.019	

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	.212	.212	.212	.181	.181	.181	.124	.124	.124	.071	.071	.071	.023	.023	.023	
1.0	.197	.178	.162	.169	.153	.139	.115	.105	.096	.066	.061	.056	.021	.020	.018	
2.0	.186	.154	.127	.159	.133	.110	.109	.092	.077	.063	.053	.045	.020	.017	.015	
3.0	.177	.136	.103	.151	.117	.090	.104	.081	.063	.060	.048	.037	.019	.015	.012	
4.0	.169	.122	.087	.145	.105	.075	.100	.074	.053	.058	.043	.031	.019	.014	.010	
5.0	.161	.111	.074	.139	.096	.065	.095	.067	.046	.055	.039	.027	.018	.013	.009	
6.0	.155	.103	.065	.133	.089	.057	.092	.062	.040	.053	.037	.024	.017	.012	.008	
7.0	.149	.096	.059	.128	.083	.051	.088	.058	.036	.051	.034	.022	.017	.011	.007	
8.0	.143	.090	.054	.123	.078	.047	.085	.055	.033	.050	.032	.020	.016	.011	.007	
9.0	.138	.085	.050	.119	.074	.043	.082	.052	.031	.048	.031	.018	.015	.010	.006	
10.0	.133	.081	.046	.114	.070	.040	.079	.049	.029	.046	.029	.017	.015	.010	.006	

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:28.5DEG  
 Operators:lumingli  
 Test Date:2019-06-21

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:55.0%  
 Test Distance:11.340m [K=1.0000]  
 Remarks:

**UGR(Unified Glare Rating) Table**

Test:U:220.0V I:0.5130A P:111.6W PF:0.9892 Freq:50.00Hz Lamp Flux:20885.2x1 lm										
NAME: SL-UFOA00-110W-R090-C					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.:					SUR.:D0.23			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	17.9	19.1	18.2	19.4	19.6	17.9	19.1	18.2	19.4	19.6
3H	18.1	19.2	18.4	19.5	19.8	18.1	19.3	18.4	19.5	19.8
4H	18.1	19.2	18.5	19.5	19.8	18.2	19.3	18.5	19.5	19.8
6H	18.1	19.2	18.5	19.5	19.8	18.2	19.2	18.6	19.5	19.8
8H	18.1	19.1	18.5	19.4	19.8	18.2	19.2	18.6	19.5	19.8
12H	18.1	19.1	18.5	19.4	19.7	18.2	19.1	18.5	19.4	19.8
4H 2H	17.9	19.0	18.2	19.3	19.6	17.9	19.0	18.3	19.3	19.6
3H	18.2	19.2	18.6	19.5	19.9	18.3	19.2	18.7	19.5	19.9
4H	18.4	19.2	18.8	19.6	19.9	18.4	19.2	18.8	19.6	20.0
6H	18.4	19.2	18.9	19.6	20.0	18.5	19.2	18.9	19.6	20.0
8H	18.5	19.1	18.9	19.6	20.0	18.5	19.2	18.9	19.6	20.0
12H	18.5	19.1	18.9	19.5	20.0	18.5	19.1	19.0	19.6	20.0
8H 4H	18.3	19.0	18.8	19.4	19.9	18.4	19.1	18.8	19.5	19.9
6H	18.5	19.0	19.0	19.5	20.0	18.5	19.1	19.0	19.5	20.0
8H	18.5	19.0	19.0	19.5	20.0	18.6	19.1	19.1	19.5	20.0
12H	18.6	19.0	19.1	19.5	20.0	18.6	19.0	19.1	19.5	20.1
12H 4H	18.3	18.9	18.8	19.4	19.8	18.3	19.0	18.8	19.4	19.9
6H	18.5	19.0	19.0	19.4	19.9	18.5	19.0	19.0	19.5	20.0
8H	18.5	19.0	19.1	19.5	20.0	18.6	19.0	19.1	19.5	20.0
Variations with the observer position at spacings:										
S = 1.0H	+ 1.2 / - 1.5					+ 1.2 / - 1.5				
1.5H	+ 0.9 / - 1.2					+ 1.0 / - 1.1				
2.0H	+ 2.5 / - 1.8					+ 2.4 / - 1.8				

CIE Pub.117, 20885 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 10.6)

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:28.5DEG  
 Operators:lumingli  
 Test Date:2019-06-21

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:55.0%  
 Test Distance:11.340m [K=1.0000]  
 Remarks:



**UTILIZATION FACTORS TABLE**

Test:U:220.0V I:0.5130A P:111.6W PF:0.9892 Freq:50.00Hz Lamp Flux:20885.2x1 lm		
NAME: SL-UFOA00-110W-R090-C	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:D0.23	Shielding Angle:

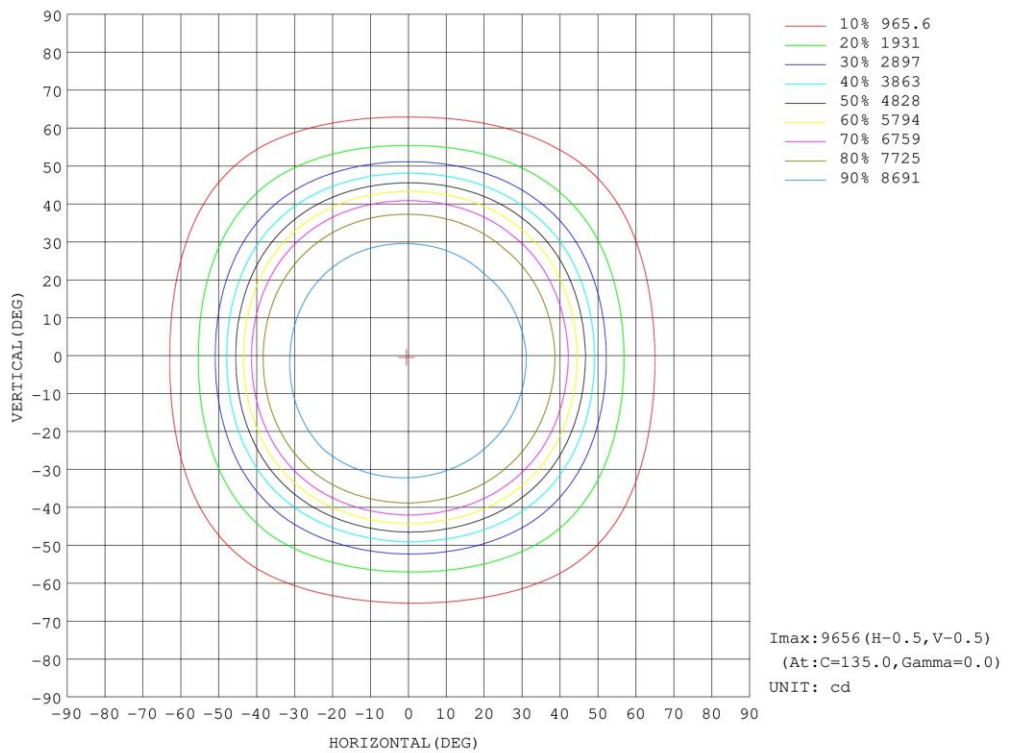
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	67	58	52	67	57	52	65	57	51	46
0.80	77	68	62	76	67	62	75	67	61	55
1.00	85	76	71	84	76	70	82	76	70	64
1.25	91	83	78	90	82	77	87	81	76	70
1.50	96	88	83	94	87	82	91	85	81	74
2.00	101	94	90	99	93	89	96	91	87	80
2.50	104	98	93	102	96	92	98	93	90	82
3.00	106	101	97	104	99	96	100	96	93	85
4.00	109	105	101	107	103	100	102	99	97	88
5.00	111	107	104	108	105	102	104	101	99	89
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:28.5DEG  
 Operators:lumingli  
 Test Date:2019-06-21

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:55.0%  
 Test Distance:11.340m [K=1.0000]  
 Remarks:

**ISOCANDELA DIAGRAM**

Test:U:220.0V I:0.5130A P:111.6W PF:0.9892 Freq:50.00Hz Lamp Flux:20885.2x1 lm		
NAME: SL-UFOA00-110W-R090-C	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:D0.23	Shielding Angle:

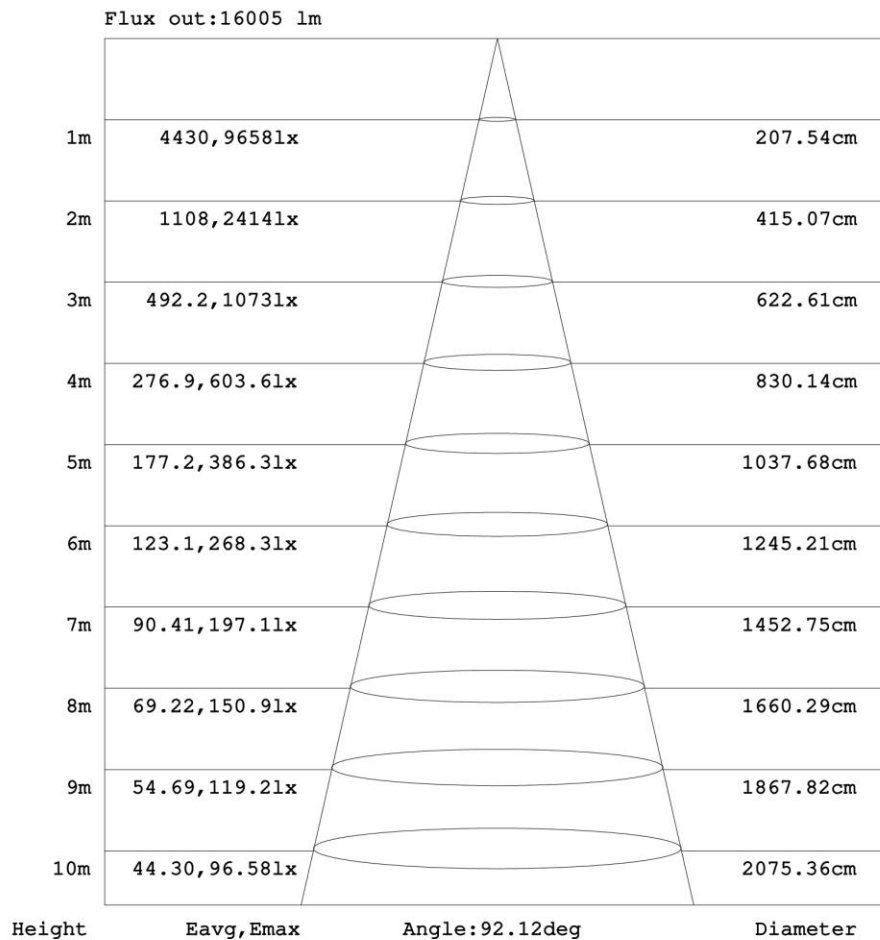


C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:28.5DEG  
 Operators:lumingli  
 Test Date:2019-06-21

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:55.0%  
 Test Distance:11.340m [K=1.0000]  
 Remarks:

**AAI Figure**

Test:U:220.0V I:0.5130A P:111.6W PF:0.9892 Freq:50.00Hz Lamp Flux:20885.2x1 lm		
NAME: SL-UFOA00-110W-R090-C	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:D0.23	Shielding Angle:



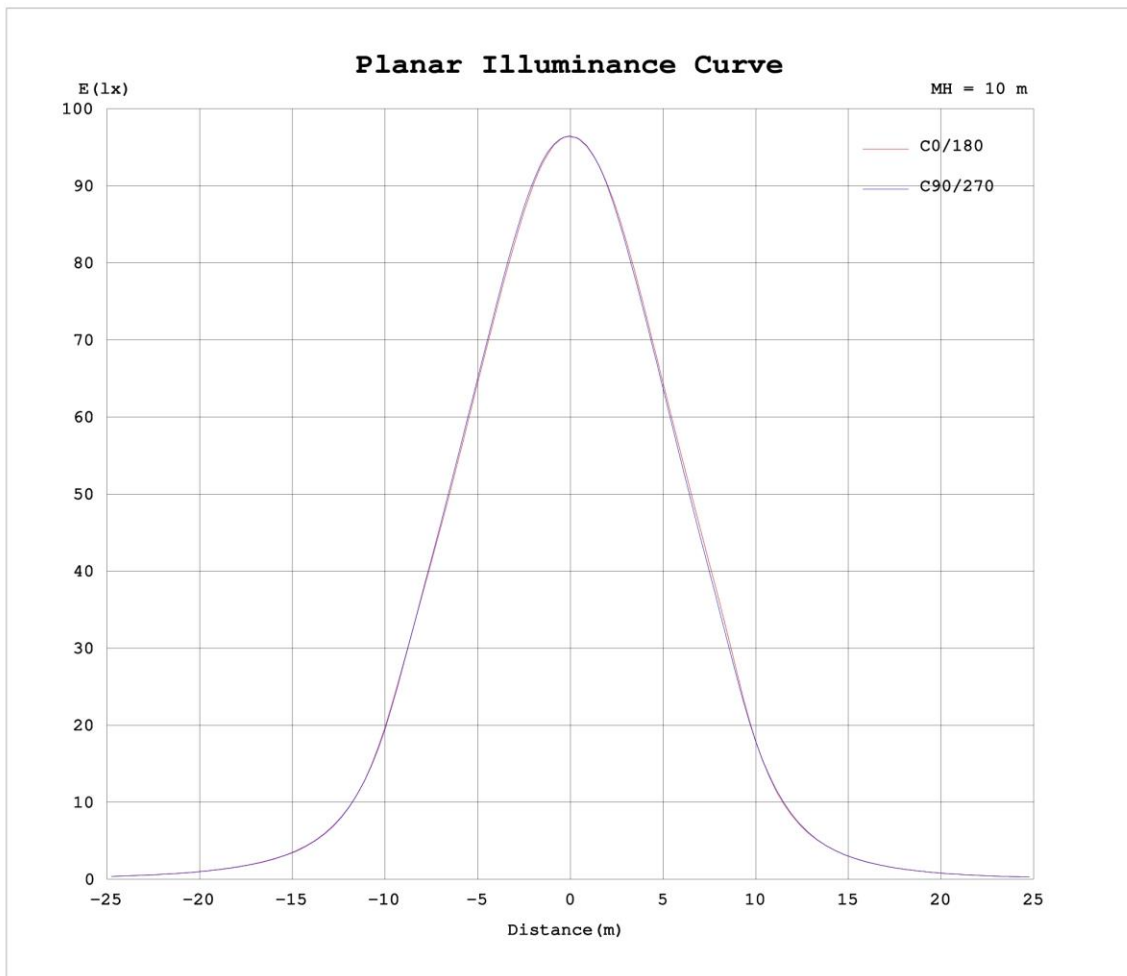
**Note:**The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:28.5DEG  
 Operators:lumingli  
 Test Date:2019-06-21

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:55.0%  
 Test Distance:11.340m [K=1.0000]  
 Remarks:



**Planar Illuminance Curve**



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 28.5DEG  
 Operators: lumingli  
 Test Date: 2019-06-21

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity: 55.0%  
 Test Distance: 11.340m [K=1.0000]  
 Remarks: