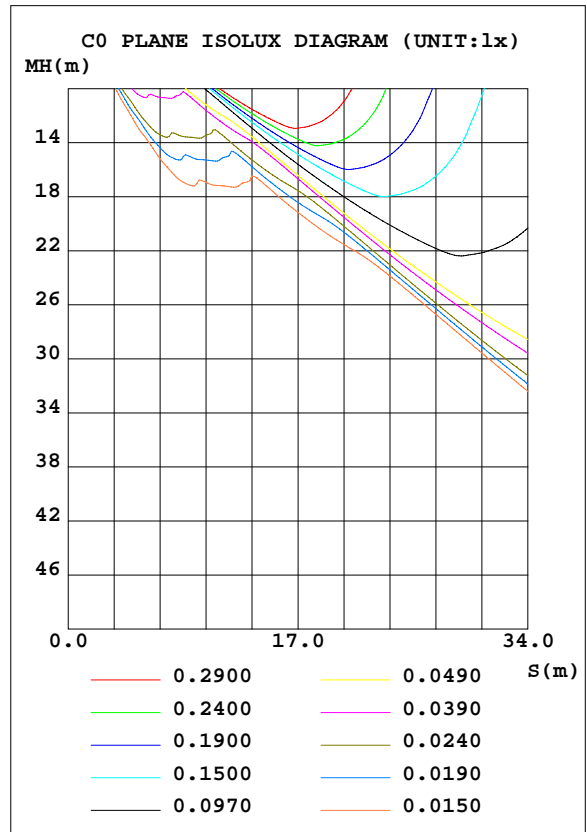
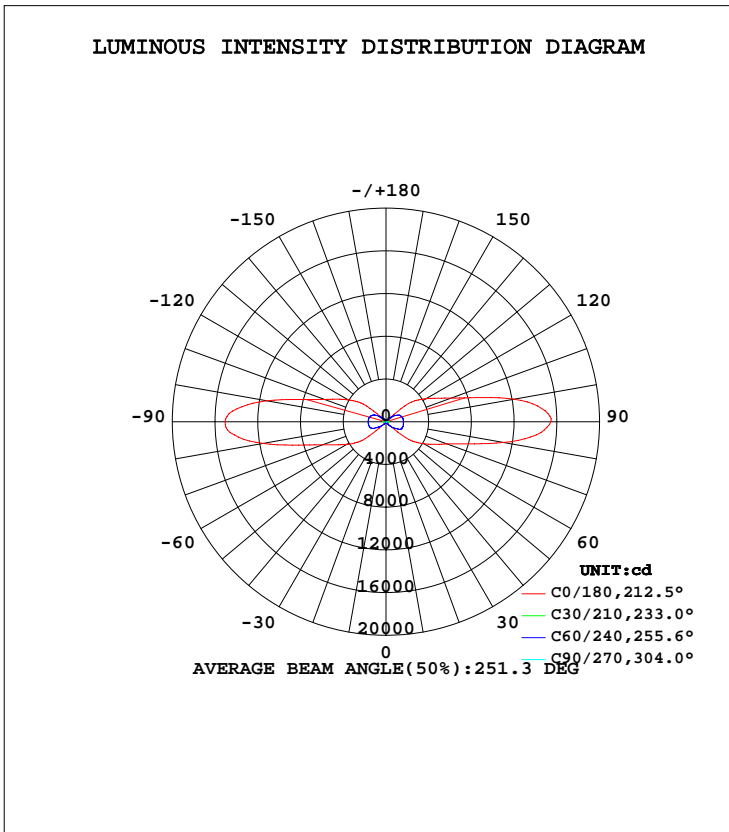


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: Libero SUD -16W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	Libero SUD -16W	Imax(cd)	20230	S/MH(C0/180)	0.00
NOMINAL POWER(W)	16	LOR(%)	100.0	S/MH(C90/270)	3.35
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	1253.6	η UP, DN(C0-180)	24.3, 24.1
NOMINAL FLUX(lm)	1253.55	CIE CLASS	DIFFUSE	η UP, DN(C180-360)	25.7, 25.8
LAMPS INSIDE	1	η up(%)	50.1	CIBSE SHR NOM	0.00
TEST VOLTAGE(V)	219.6	η down(%)	49.9	CIBSE SHR MAX	1.00



C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DOBAC  
 Test Date:2017-09-30

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity:65.0%  
 Test Distance:6.960m [K=1.0000]  
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum,lamp
10	0.6136	5.170	0.0091	0.0117	0.6241	6.732	0.0064	0.0120	0- 10	0.0133	0.0133	0.00,0.00
20	2.931	21.57	0.0112	0.0340	2.995	23.45	0.0064	0.0372	10- 20	0.1568	0.1702	0.01,0.01
30	8.967	62.99	0.0112	0.1072	9.759	72.30	0.0064	0.1181	20- 30	0.9785	1.149	0.09,0.09
40	12.66	149.9	0.0112	0.2477	13.29	171.7	0.0053	0.2136	30- 40	2.592	3.741	0.30,0.30
50	209.0	210.1	0.0107	0.3246	190.8	222.2	0.0053	0.2488	40- 50	8.835	12.58	1,1
60	423.8	239.7	0.0128	0.4772	415.3	278.4	0.0059	0.4969	50- 60	55.14	67.71	5.4,5.4
70	633.1	400.0	0.0118	1.337	606.9	521.0	0.0064	1.887	60- 70	114.2	181.9	14.5,14.5
80	1172	1015	0.0107	3.095	1120	1514	0.0053	3.922	70- 80	181.8	363.8	29,29
90	1507	1350	0.0096	3.755	1544	1975	0.0053	4.549	80- 90	262.0	625.8	49.9,49.9
100	1133	1006	0.0091	3.168	1221	1586	0.0059	3.925	90-100	263.6	889.4	71,71
110	609.3	402.5	0.0059	1.442	650.0	536.7	0.0091	1.867	100-110	183.7	1073	85.6,85.6
120	411.9	238.4	0.0059	0.4473	432.7	250.1	0.0086	0.4513	110-120	114.5	1188	94.7,94.7
130	195.6	211.9	0.0053	0.2966	231.5	204.0	0.0080	0.3072	120-130	53.46	1241	99,99
140	11.74	157.6	0.0043	0.2245	11.82	144.5	0.0075	0.2342	130-140	8.957	1250	99.7,99.7
150	8.669	69.94	0.0037	0.1128	8.379	64.09	0.0070	0.1205	140-150	2.450	1252	99.9,99.9
160	3.112	23.20	0.0037	0.0344	2.942	21.90	0.0070	0.0402	150-160	0.9500	1253	100,100
170	0.6298	6.867	0.0043	0.0097	0.6058	5.477	0.0064	0.0149	160-170	0.1580	1254	100,100
180	0	0	0.0043	0.0038	0	0	0.0043	0.0039	170-180	0.0131	1254	100,100
DEG	LUMINOUS INTENSITY:×10cd									UNIT:lm		

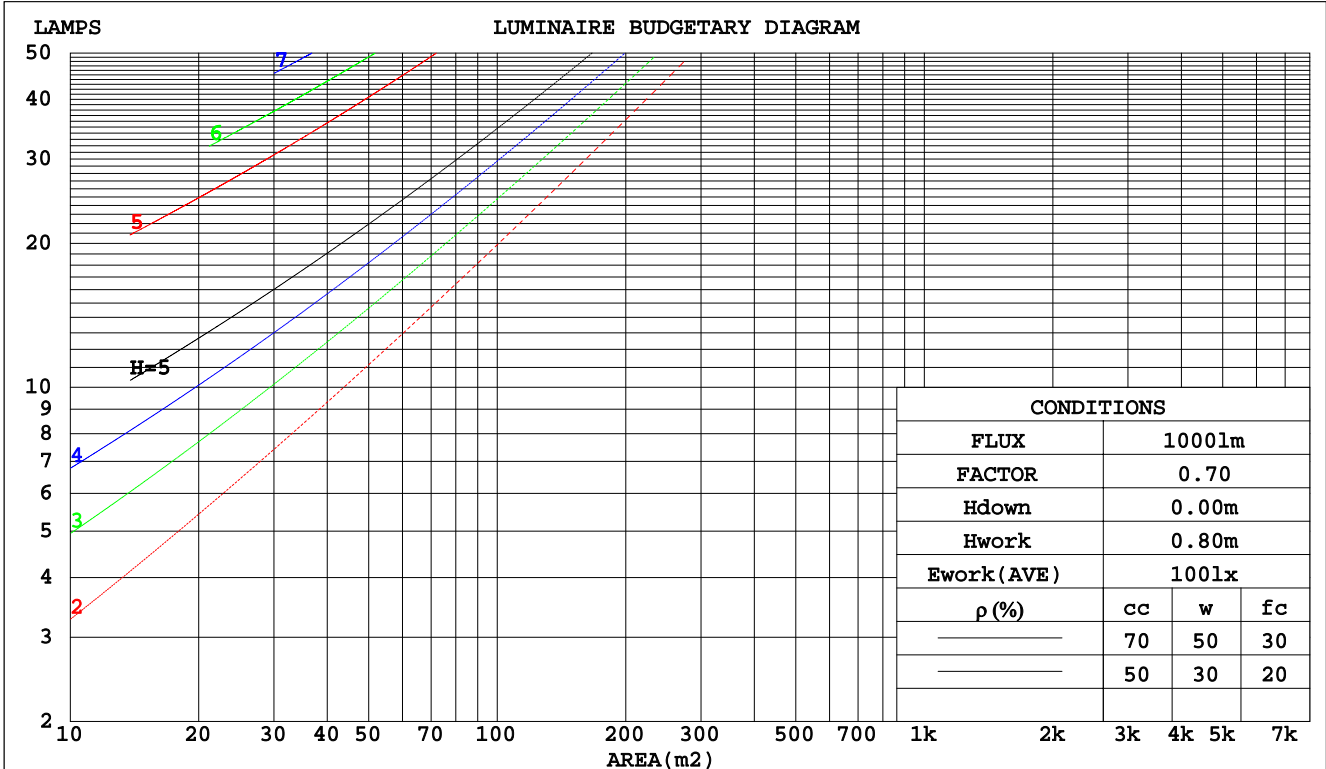
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-09-30

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

NAME: Libero SUD -16W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																
pfc																
RCR	RCR:Room Cavity Ratio			Coefficients of Utilization(CU)												
0.0	1.07	1.07	1.07	.99	.99	.99	.83	.83	.83	.69	.69	.69	.56	.56	.56	.50
1.0	.79	.71	.64	.72	.65	.59	.58	.53	.48	.45	.41	.37	.34	.30	.27	.21
2.0	.65	.55	.46	.58	.49	.42	.46	.39	.33	.35	.30	.25	.25	.21	.17	.12
3.0	.54	.44	.35	.49	.39	.32	.39	.31	.25	.29	.23	.18	.20	.15	.11	.07
4.0	.47	.36	.28	.42	.32	.25	.33	.25	.19	.25	.19	.14	.17	.12	.08	.04
5.0	.41	.31	.23	.37	.27	.20	.29	.21	.16	.22	.16	.11	.15	.10	.06	.03
6.0	.36	.26	.19	.33	.24	.17	.26	.18	.13	.19	.13	.09	.13	.09	.05	.02
7.0	.33	.23	.16	.29	.21	.14	.23	.16	.11	.17	.12	.07	.12	.07	.04	.01
8.0	.29	.20	.14	.26	.18	.12	.21	.14	.09	.16	.10	.06	.11	.07	.03	.01
9.0	.27	.18	.12	.24	.16	.11	.19	.13	.08	.15	.09	.06	.10	.06	.03	.01
10.0	.24	.16	.11	.22	.15	.09	.18	.11	.07	.13	.08	.05	.10	.05	.03	.00



C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-09-30

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

WEC AND CCEC

NAME: Libero SUD -16W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	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	.554	.315	.100	.531	.303	.096	.489	.280	.090	.449	.259	.083	.413	.239	.077	
2.0	.424	.232	.071	.403	.222	.068	.364	.202	.063	.328	.184	.058	.294	.167	.053	
3.0	.352	.187	.056	.333	.178	.054	.297	.161	.049	.264	.145	.044	.233	.129	.040	
4.0	.303	.157	.046	.285	.149	.044	.253	.134	.040	.222	.119	.036	.194	.105	.032	
5.0	.267	.136	.039	.251	.129	.037	.221	.115	.034	.192	.102	.030	.166	.089	.027	
6.0	.239	.120	.034	.224	.113	.033	.196	.101	.029	.170	.089	.026	.146	.077	.023	
7.0	.216	.107	.030	.203	.101	.029	.177	.090	.026	.153	.078	.023	.130	.068	.020	
8.0	.198	.097	.027	.185	.091	.026	.162	.081	.023	.139	.070	.020	.118	.061	.018	
9.0	.182	.088	.025	.171	.083	.023	.149	.073	.021	.128	.064	.018	.108	.055	.016	
10.0	.169	.081	.023	.158	.076	.021	.138	.067	.019	.118	.059	.017	.100	.050	.014	

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	.572	.572	.572	.489	.489	.489	.334	.334	.334	.192	.192	.192	.061	.061	.061	
1.0	.582	.539	.500	.498	.462	.430	.341	.318	.297	.196	.184	.173	.063	.059	.056	
2.0	.577	.519	.469	.494	.446	.406	.339	.309	.283	.195	.180	.166	.063	.058	.054	
3.0	.570	.504	.452	.488	.435	.392	.335	.302	.275	.194	.176	.162	.062	.057	.053	
4.0	.561	.493	.441	.481	.426	.383	.331	.297	.270	.192	.174	.160	.062	.057	.053	
5.0	.553	.485	.434	.475	.419	.378	.327	.293	.267	.189	.172	.158	.061	.056	.052	
6.0	.544	.477	.429	.468	.413	.374	.323	.289	.264	.187	.170	.157	.060	.056	.052	
7.0	.537	.471	.425	.462	.408	.371	.319	.286	.263	.185	.169	.156	.060	.055	.052	
8.0	.529	.466	.423	.456	.404	.368	.315	.284	.261	.183	.167	.156	.059	.055	.052	
9.0	.523	.462	.420	.450	.401	.367	.312	.282	.260	.182	.166	.155	.059	.055	.051	
10.0	.516	.458	.418	.445	.397	.365	.309	.280	.259	.180	.165	.155	.058	.054	.051	

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-09-30

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

Uncorrected UGR Table

NAME: Libero SUD -16W						TYPE:					WEIGHT:				
DIM.:						SPEC.:					SERIAL No.:				
MFR.: DOBAC						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	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	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	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise									
x = 2H y = 2H	27.7	28.9	28.6	29.9	31.1	-2.8	-1.6	-1.9	-0.6	0.6	27.7	28.9	28.6	29.9	31.1
3H	33.9	35.0	34.8	35.9	37.2	-2.6	-1.5	-1.7	-0.6	0.7	33.9	35.0	34.8	35.9	37.2
4H	37.2	38.3	38.1	39.2	40.5	-2.7	-1.6	-1.7	-0.6	0.6	37.2	38.3	38.1	39.2	40.5
6H	41.2	42.2	42.1	43.2	44.5	-2.7	-1.7	-1.8	-0.8	0.5	41.2	42.2	42.1	43.2	44.5
8H	43.5	44.4	44.4	45.4	46.7	-2.8	-1.8	-1.9	-0.8	0.4	43.5	44.4	44.4	45.4	46.7
12H	45.9	46.8	46.8	47.8	49.1	-2.8	-1.9	-1.9	-0.9	0.4	45.9	46.8	46.8	47.8	49.1
4H 2H	27.3	28.4	28.2	29.3	30.6	15.1	16.2	16.0	17.1	18.4	27.3	28.4	28.2	29.3	30.6
3H	33.9	34.9	34.9	35.9	37.1	14.8	15.8	15.7	16.7	18.0	33.9	34.9	34.9	35.9	37.1
4H	37.5	38.4	38.5	39.4	40.7	14.7	15.5	15.6	16.5	17.8	37.5	38.4	38.5	39.4	40.7
6H	41.7	42.5	42.7	43.5	44.8	14.5	15.3	15.4	16.3	17.6	41.7	42.5	42.7	43.5	44.8
8H	44.1	44.8	45.0	45.8	47.2	14.4	15.1	15.4	16.2	17.5	44.1	44.8	45.0	45.8	47.2
12H	46.7	47.4	47.7	48.4	49.8	14.3	15.0	15.3	16.0	17.4	46.7	47.4	47.7	48.4	49.8
8H 4H	37.3	38.1	38.3	39.1	40.4	24.6	25.4	25.6	26.4	27.7	37.3	38.1	38.3	39.1	40.4
6H	41.7	42.4	42.7	43.4	44.8	24.4	25.1	25.4	26.1	27.5	41.7	42.4	42.7	43.4	44.8
8H	44.2	44.8	45.2	45.9	47.2	24.4	25.0	25.4	26.0	27.4	44.2	44.8	45.2	45.9	47.2
12H	47.1	47.6	48.1	48.7	50.1	24.3	24.8	25.3	25.9	27.2	47.1	47.6	48.1	48.7	50.1
12H 4H	37.2	37.9	38.2	39.0	40.3	28.2	28.9	29.2	29.9	31.3	37.2	37.9	38.2	39.0	40.3
6H	41.6	42.2	42.6	43.3	44.6	28.2	28.8	29.2	29.9	31.2	41.6	42.2	42.6	43.3	44.6
8H	44.2	44.7	45.2	45.8	47.2	28.1	28.7	29.1	29.7	31.1	44.2	44.7	45.2	45.8	47.2
Variations with the observer position at spacings:															
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.4									
1.5H	+ 0.5 / - 0.4					+ 0.5 / - 0.2									
2.0H	+ 0.8 / - 0.7					+ 1.3 / - 1.3									

CIE Pub.117 Corrected 1254 lm Total Lamp Luminous Flux.(8log(F/F0) = 0.8)

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-09-30

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

UTILIZATION FACTORS TABLE

NAME: Libero SUD -16W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

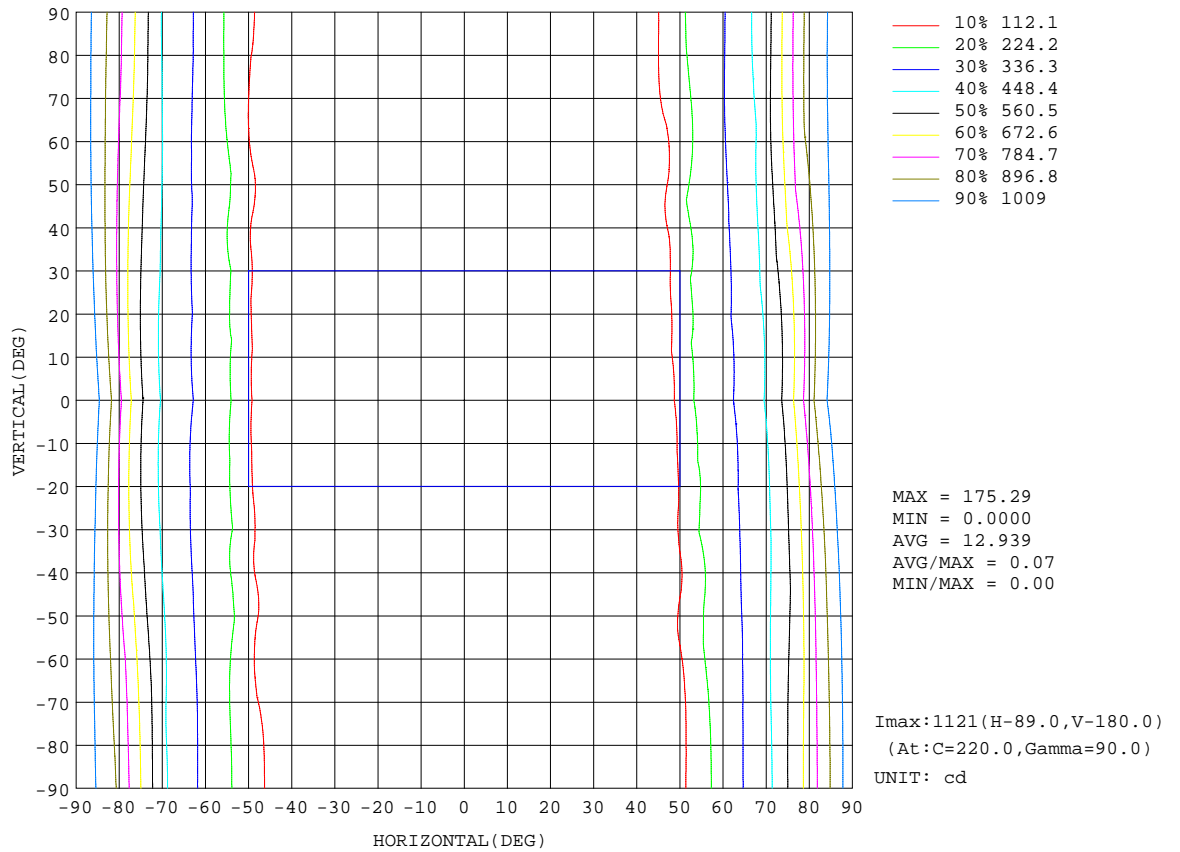
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	30	16	8	28	15	8	26	14	7	1
0.80	37	21	12	35	20	11	31	18	10	1
1.00	43	26	16	40	25	15	35	24	13	2
1.25	49	32	21	46	30	19	39	26	17	4
1.50	54	37	25	50	35	23	43	30	20	5
2.00	62	46	33	57	42	31	48	36	26	9
2.50	68	52	40	62	48	37	52	41	31	12
3.00	72	57	46	66	53	42	55	45	36	14
4.00	78	65	54	72	60	50	60	50	42	19
5.00	82	71	61	76	65	56	63	55	47	22
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-09-30

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

NAME: Libero SUD -16W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

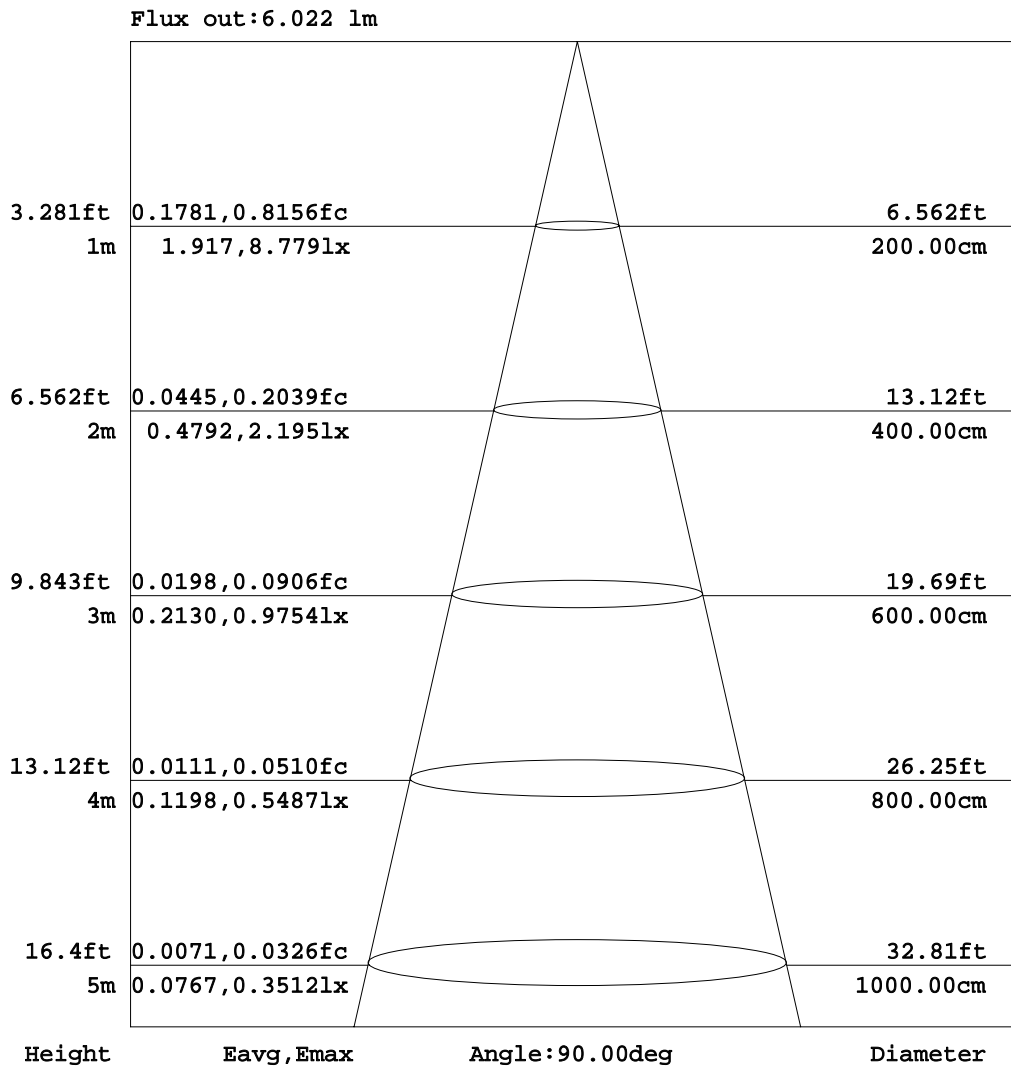


C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-09-30

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

AAI Figure

NAME: Libero SUD -16W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:



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

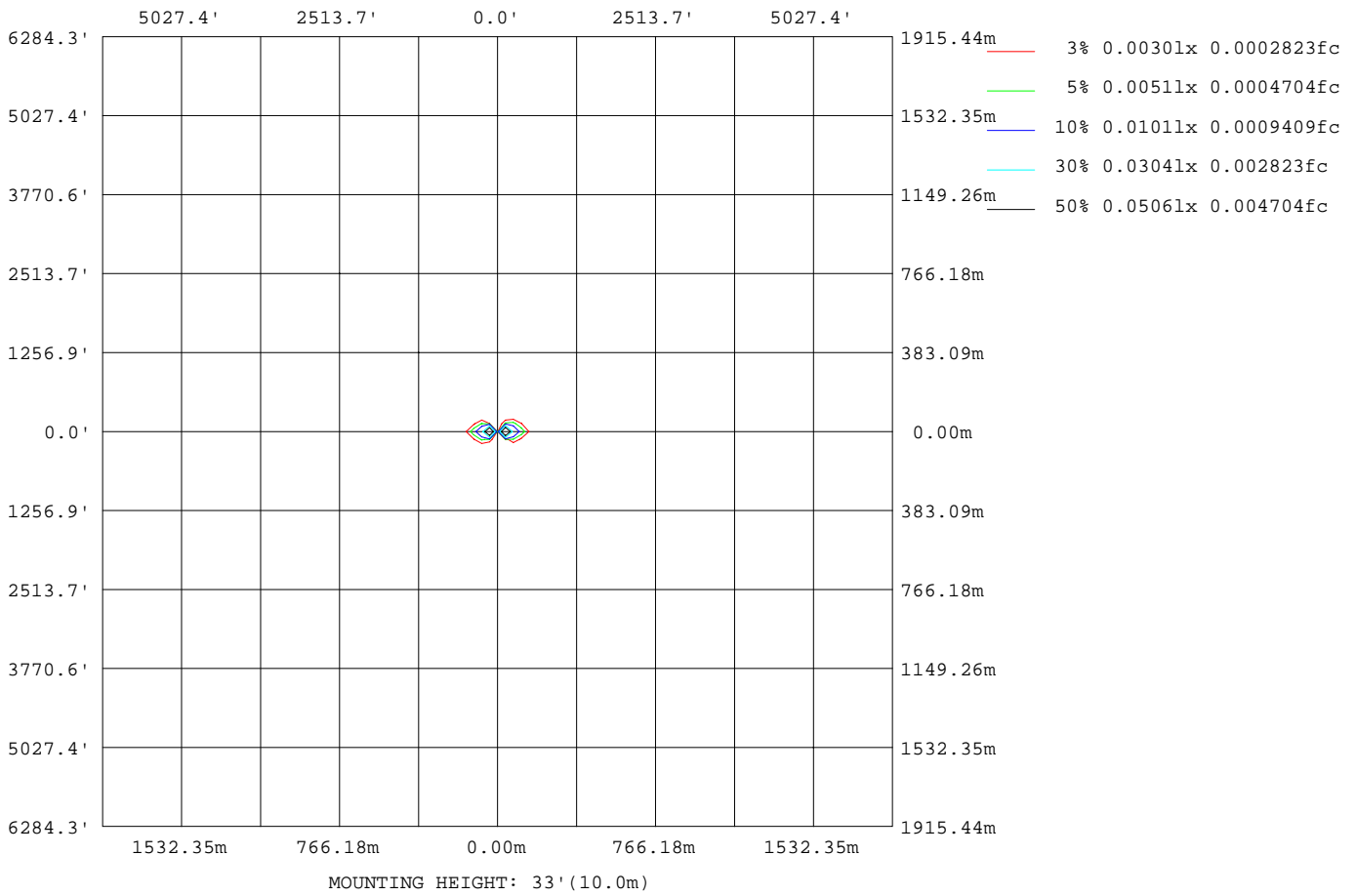
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-09-30

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:



ISOLUX DIAGRAM

NAME: Libero SUD -16W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-09-30

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

**Average Luminance Table(CIBSE)**

NAME: Libero SUD -16W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Parameter description for average Luminance	Symbol	Value	Unit
Luminance in Azimuth Plane	Bc	refer Table 2	cd/sq.m.
Intensity at angle Gamma in given azimuth plane	I	from data	cd/klm
Number of lamps	N	1	
Output of each lamp(initial lumens as specified)	F	1253.55	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.004	sq.m.
Angle to the downward vertical from light centre	Gamma	from data	deg

Table 1. Calculation parameters for determination of CIBSE LG3:1996 Average Luminance

G deg	C plane(deg)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
55	148650	158137	184558	260572	348569	439076	515469	311	51	185	513	1521	1573	1437	4926	24446	30339	42703	4
60	211880	238411	340118	635667	503359	786059	172570	337	64	227	661	2056	1961	2711	20262	40369	44229	20764	75
65	303243	349674	439981	289541	397735	479456	652991	465	73	296	903	2653	2417	4677	42454	57353	63062	97384	6
70	462777	527102	621940	549922	685891	134246	314822	604	86	385	1370	3350	3022	14924	62236	82018	92801	43637	2
75	816696	925176	115736	232775	906503	351645	787401	7063	991	114	546	1934	4278	4010	36237	91943	12327	15100	7
80	168711	181851	167481	173746	120876	292127	382312	6617	1624	154	836	3123	6469	6134	73905	147912	05832	93106	1
85	408858	433313	421509	800635	722408	724282	325849	253384	276	1716	6473	13193	13681	17139	70721	144683	43738	80538	4

Table 2. Average Luminance(cd/sq.m.) for defined C plane, Gamma angle

CIBSE Category	Gamma (deg)	Average Luminance		Patch Luminance	
		maximum	specified	maximum	specified
		calculated	maximum	measured	maximum
Category 1	55 to 90	40885892	200	---	500
Category 2	65 to 90	40885892	200	---	500
Category 3	75 to 90	40885892	200	---	500

Table 3. Tabulation of Average and Patch Luminance(cd/sq.m.) for defined CIBSE categories

No match

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-09-30

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

**Average Luminance Table(CIBSE)**

NAME: Libero SUD -16W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Parameter description for average Luminance	Symbol	Value	Unit
Luminance in Azimuth Plane	Bc	refer Table 2	cd/sq.m.
Intensity at angle Gamma in given azimuth plane	I	from data	cd/klm
Number of lamps	N	1	
Output of each lamp(initial lumens as specified)	F	1253.55	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.004	sq.m.
Angle to the downward vertical from light centre	Gamma	from data	deg

Table 1. Calculation parameters for determination of CIBSE LG3:2001 Average Luminance

G deg	C plane(deg)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
55	148650	158137	18455	22605	27293	33569	41390	51154	64	81	100	121	144	170	200	234	274	321	376
60	211880	238411	28401	35667	45033	57860	75172	97030	124	157	200	256	327	416	526	661	826	1026	1276
65	303243	339674	409812	50954	65397	85479	11365	15299	200	256	327	416	526	661	826	1026	1276	1586	2000
70	462777	527102	642194	80499	104685	13891	18424	24314	310	396	500	635	802	1006	1262	1586	2000	2500	3100
75	816696	951764	115736	143277	180650	233516	30478	39740	510	654	836	1063	1350	1706	2150	2686	3336	4136	5100
80	168711	187851	227481	281746	35620	46292	60273	78231	1000	1276	1624	2076	2661	3406	4336	5486	6886	8636	10760
85	408858	463313	562150	70006	89722	11724	15428	20258	26384	3384	4316	5506	6976	8786	11006	13806	17306	21606	26806

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

range (deg)	Maximum measured	Average Luminance(cd/sq.m)			
		Maximum limit for screen type & software category used			
		Type I,II screen Some neg.s'ware	Type I,II screen Only pos.s'ware	Type III screen Some neg.s'ware	Type III screen Only pos.s'ware
55 to 90	40885892	1000	1500	200	500
65 to 90	40885892	1000	1500	200	500

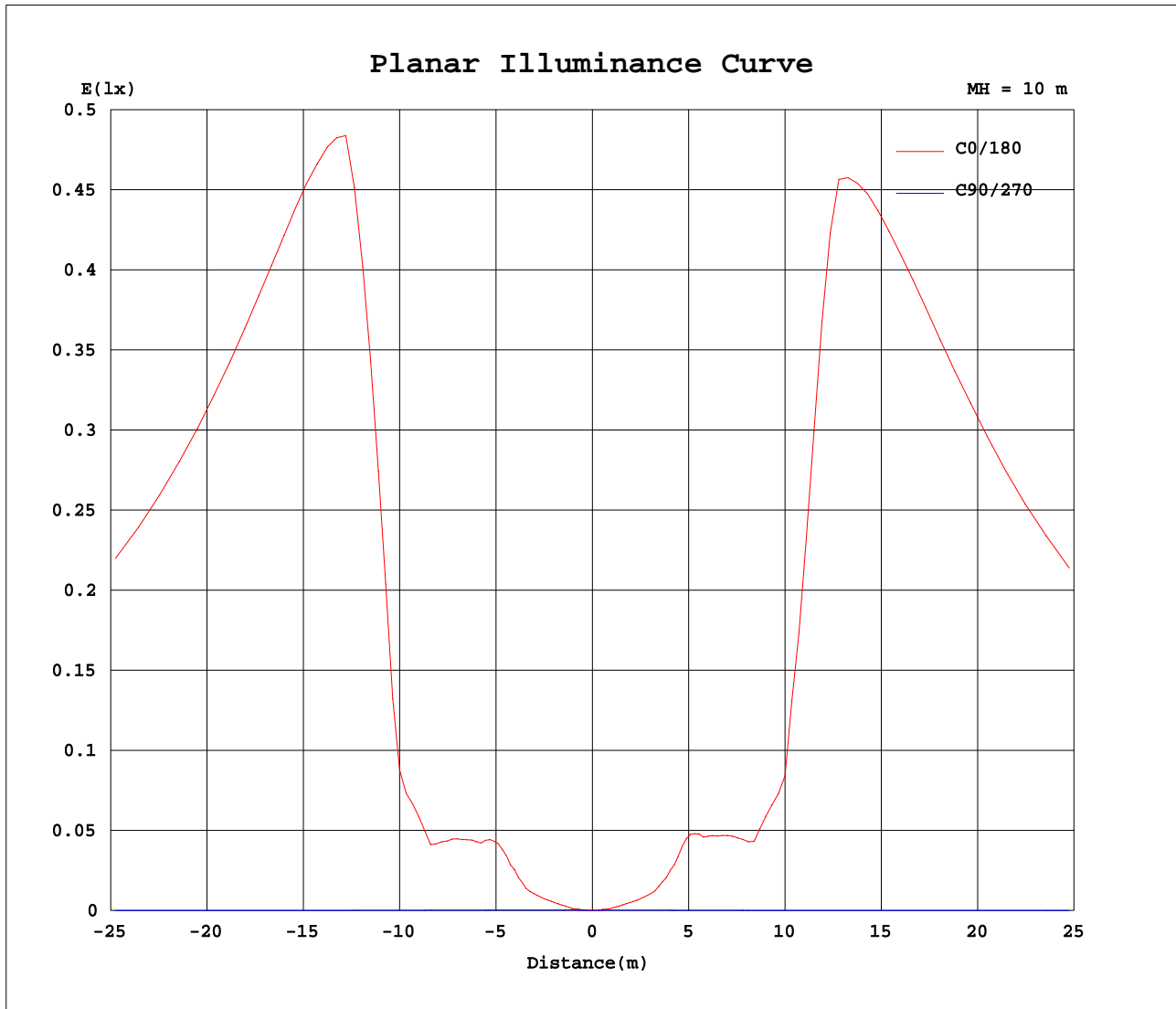
Table 3. Tabulation of average luminance(cd/sq.m.) and luminance limits

No match

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-09-30

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-09-30

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Libero SUD -16W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: x10cd

C( DEG) γ (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.14	0.01	0.07	0.00	0.00	1.30	0.00	0.02	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.16
10	0.61	0.04	0.45	0.03	3.55	22.44	2.13	0.08	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.62
15	1.29	0.09	0.96	0.07	8.38	61.06	6.07	0.16	0.03	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	1.29
20	2.93	0.20	1.83	0.12	13.79	104.54	9.29	0.22	0.03	0.01	0.01	0.02	0.03	0.03	0.04	0.04	0.06	0.07	2.99
25	7.06	0.46	4.53	0.24	22.55	155.19	14.30	0.37	0.04	0.01	0.01	0.03	0.04	0.05	0.07	0.10	0.14	0.15	7.42
30	8.97	0.65	7.94	0.50	47.53	227.90	19.36	0.48	0.04	0.01	0.02	0.04	0.07	0.09	0.12	0.21	0.24	0.23	9.76
35	11.24	0.78	8.95	0.67	83.40	394.77	25.73	0.65	0.04	0.01	0.02	0.05	0.09	0.14	0.22	0.25	0.27	0.26	11.78
40	12.66	0.88	10.48	0.74	103.75	41.56	34.14	0.80	0.05	0.01	0.02	0.07	0.13	0.24	0.26	0.29	0.30	0.29	13.29
45	34.3	1.87	14.3	0.83	110.17	92.93	50.39	0.95	0.06	0.01	0.03	0.08	0.19	0.31	0.28	0.32	0.47	0.62	32.9
50	209	10.2	33.8	1.02	123.85	129.75	66.99	1.09	0.07	0.01	0.04	0.10	0.25	0.34	0.31	0.49	1.50	3.31	191
55	341	22.0	165	1.90	131.45	114.34	89.65	1.25	0.07	0.01	0.04	0.12	0.35	0.36	0.33	1.13	5.61	6.96	327
60	424	27.7	280	6.71	150.07	195.72	118.35	1.41	0.07	0.01	0.05	0.13	0.41	0.39	0.54	2.45	8.07	8.86	415
65	513	33.3	338	15.1	236.12	275.95	146.48	1.55	0.08	0.01	0.05	0.15	0.45	0.41	0.79	6.71	9.70	10.7	503
70	633	39.3	386	21.2	310.13	356.24	159.13	1.67	0.08	0.01	0.05	0.19	0.46	0.41	2.04	8.51	11.2	12.7	607
75	846	46.8	430	24.1	611.13	382.25	164.34	1.77	0.10	0.01	0.06	0.20	0.44	0.42	3.75	9.52	12.8	15.6	800
80	1172	56.9	469	26.0	979.14	409.48	165.47	1.85	0.11	0.01	0.06	0.22	0.45	0.43	5.13	10.3	14.3	20.4	1120
85	1425	67.4	496	27.2	1240.14	424.91	168.15	1.91	0.12	0.01	0.06	0.23	0.46	0.47	5.98	10.7	15.6	25.7	1413
90	1507	71.5	505	27.6	1343.14	429.17	166.92	1.95	0.12	0.01	0.06	0.23	0.46	0.49	6.24	10.9	16.1	28.2	1544
95	1401	66.9	493	27.2	1244.14	430.45	167.37	1.96	0.12	0.01	0.06	0.23	0.45	0.47	6.04	10.8	15.5	27.1	1460
100	1133	55.9	464	25.9	967.14	427.11	164.89	1.91	0.12	0.01	0.06	0.22	0.43	0.42	5.27	10.4	14.5	22.2	1221
105	805	45.8	423	23.9	602.13	399.40	161.06	1.82	0.12	0.01	0.06	0.20	0.43	0.41	3.94	9.64	13.0	17.1	877
110	609	38.7	378	21.2	309.14	401.48	153.89	1.76	0.12	0.01	0.05	0.19	0.43	0.42	2.23	8.74	11.5	13.7	650
115	500	33.0	328	15.6	233.13	357.90	144.46	1.62	0.11	0.01	0.05	0.15	0.42	0.39	0.81	7.66	10.0	11.3	523
120	412	27.5	268	7.06	142.48	261.38	129.15	1.49	0.10	0.01	0.05	0.13	0.39	0.37	0.50	3.14	8.43	9.43	433
125	329	21.7	157	1.91	135.55	160.62	120.17	1.33	0.09	0.01	0.04	0.12	0.34	0.34	0.31	1.33	6.22	7.63	351
130	196	10.4	33.6	0.97	128.03	106.37	74.36	1.17	0.08	0.01	0.04	0.10	0.28	0.29	0.30	0.46	1.83	4.61	231
135	30.6	1.85	13.0	0.85	114.25	108.45	56.21	1.00	0.07	0.00	0.03	0.09	0.21	0.28	0.26	0.30	0.44	5.71	37.0
140	11.74	0.86	10.51	0.76	101.97	105.78	36.23	0.88	0.05	0.00	0.03	0.07	0.13	0.23	0.22	0.27	0.29	0.27	11.82
145	10.95	0.78	9.00	0.64	86.99	104.97	28.44	0.73	0.05	0.00	0.02	0.05	0.09	0.17	0.20	0.21	0.24	0.25	10.92
150	8.67	0.63	7.69	0.56	53.19	102.69	21.09	0.59	0.04	0.00	0.01	0.04	0.07	0.08	0.14	0.19	0.21	0.19	8.38
155	7.01	0.50	5.30	0.30	24.19	101.20	15.58	0.48	0.03	0.00	0.01	0.03	0.04	0.05	0.06	0.11	0.14	0.15	6.41
160	3.11	0.21	1.93	0.13	14.92	111.54	11.15	0.31	0.03	0.00	0.01	0.02	0.03	0.03	0.04	0.05	0.06	0.07	2.94
165	1.32	0.09	1.03	0.07	9.04	72.28	6.97	0.16	0.03	0.00	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	1.30
170	0.63	0.04	0.50	0.04	4.48	32.34	1.91	0.04	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.61
175	0.16	0.01	0.13	0.00	0.13	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.13
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-09-30

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Libero SUD -16W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Table--2

UNIT: x10cd

C( DEG) γ (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5	0.01	0.13	0.01	1.34	11.67	1.80	0.09	0.02	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
10	0.04	0.50	0.03	4.24	33.35	2.92	0.12	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
15	0.09	1.03	0.07	8.53	69.38	6.53	0.17	0.03	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03		
20	0.21	2.01	0.13	14.98	113.79	10.87	0.31	0.03	0.01	0.01	0.02	0.03	0.04	0.04	0.04	0.06	0.07		
25	0.51	4.99	0.29	25.77	172.17	15.39	0.44	0.04	0.01	0.01	0.03	0.05	0.06	0.07	0.09	0.14	0.16		
30	0.71	8.68	0.60	53.95	268.11	21.82	0.60	0.04	0.01	0.02	0.05	0.07	0.09	0.14	0.19	0.22	0.20		
35	0.83	9.58	0.70	96.95	482.08	30.00	0.73	0.04	0.01	0.02	0.06	0.09	0.16	0.21	0.21	0.26	0.26		
40	0.91	10.97	0.81	112.97	98.37	39.22	0.89	0.06	0.01	0.03	0.07	0.14	0.24	0.19	0.26	0.30	0.28		
45	1.98	16.1	0.89	119.48	157.26	50.10	1.06	0.07	0.01	0.03	0.09	0.22	0.28	0.22	0.31	0.5204	0.7234		
50	10.8	44.7	1.25	134.14	161.86	67.99	1.27	0.09	0.01	0.04	0.11	0.27	0.23	0.26	0.5486	2.06	4.49		
55	22.2	177	2.24	140.78	214.87	709.84	1.46	0.10	0.01	0.04	0.11	0.30	0.28	0.31	1.67	6.38	7.67		
60	28.2	285	9.15	182	1311.90	41.02	1.64	0.11	0.01	0.04	0.12	0.38	0.36	0.5979	5.36	8.64	9.48		
65	33.9	346	18.5	283	1401.58	59.99	1.81	0.11	0.01	0.05	0.17	0.41	0.40	1.07	8.03	10.3	11.4		
70	40.0	401	23.0	434	1448.90	60.57	1.92	0.12	0.01	0.06	0.20	0.41	0.41	3.02	9.24	11.9	13.8		
75	48.4	449	25.8	972	1468.25	66.99	2.06	0.12	0.01	0.06	0.22	0.43	0.40	5.09	10.2	13.6	17.6		
80	60.5	492	27.9	1518	1464.68	65.22	2.22	0.13	0.01	0.05	0.21	0.43	0.47	6.56	11.0	15.4	23.5		
85	74.2	532	29.2	1887	1478.79	63.57	2.36	0.13	0.01	0.02	0.20	0.41	0.5306	7.38	11.4	17.0	28.9		
90	81.0	548	29.6	2023	1461.08	63.62	2.42	0.13	0.01	0.02	0.20	0.43	0.5544	7.60	11.6	17.5	30.4		
95	76.7	534	29.2	1921	1475.74	64.06	2.28	0.12	0.01	0.02	0.20	0.45	0.5252	7.37	11.4	16.8	28.1		
100	63.5	500	28.0	1594	1500.15	63.08	2.08	0.12	0.01	0.05	0.15	0.39	0.45	6.58	10.8	15.1	22.4		
105	50.1	456	26.1	1067	1455.28	58.84	2.07	0.12	0.01	0.06	0.20	0.41	0.40	5.10	10.0	13.3	16.7		
110	41.0	407	23.5	453	1428.24	52.75	1.96	0.11	0.01	0.06	0.20	0.41	0.30	3.06	9.02	11.6	13.1		
115	34.4	356	19.1	276	1369.59	42.97	1.76	0.10	0.01	0.05	0.16	0.41	0.39	0.6024	7.76	10.0	10.8		
120	28.8	300	9.84	156.98	243.12	25.51	1.62	0.09	0.01	0.05	0.14	0.39	0.38	0.5039	2.55	8.26	8.90		
125	23.2	203	2.21	134.71	1138.40	02.82	1.40	0.04	0.01	0.04	0.12	0.35	0.35	0.31	1.55	5.81	1.37		
130	12.1	46.4	0.98	125.38	043.47	5.00	1.16	0.06	0.01	0.04	0.09	0.30	0.31	0.31	0.4644	1.86	3.72		
135	1.97	13.1	0.84	107.80	09.96	53.93	0.97	0.06	0.01	0.03	0.09	0.20	0.28	0.27	0.30	0.3880	0.5709		
140	0.85	10.25	0.72	94.94	673.23	35.66	0.79	0.04	0.01	0.03	0.07	0.12	0.24	0.23	0.27	0.28	0.25		
145	0.75	8.61	0.61	81.01	416.74	27.43	0.66	0.03	0.01	0.02	0.06	0.10	0.15	0.20	0.22	0.24	0.24		
150	0.61	7.27	0.47	48.09	234.71	19.74	0.51	0.03	0.01	0.02	0.05	0.07	0.09	0.14	0.19	0.21	0.19		
155	0.43	4.57	0.25	23.19	158.46	14.44	0.36	0.03	0.01	0.01	0.04	0.05	0.06	0.06	0.11	0.14	0.15		
160	0.19	1.87	0.12	14.22	103.88	9.72	0.21	0.02	0.01	0.01	0.03	0.04	0.04	0.04	0.05	0.06	0.06		
165	0.09	0.99	0.07	8.33	63.34	5.54	0.13	0.02	0.01	0.01	0.01	0.02	0.02	0.03	0.02	0.03	0.03		
170	0.04	0.47	0.03	3.70	24.41	2.09	0.10	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01		
175	0.01	0.10	0.01	1.00	10.72	1.12	0.06	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00		
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-09-30

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks: