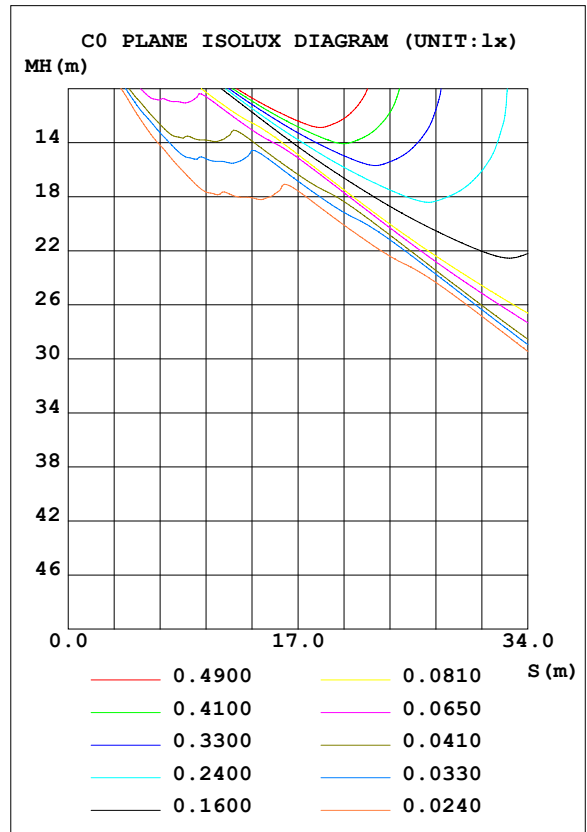
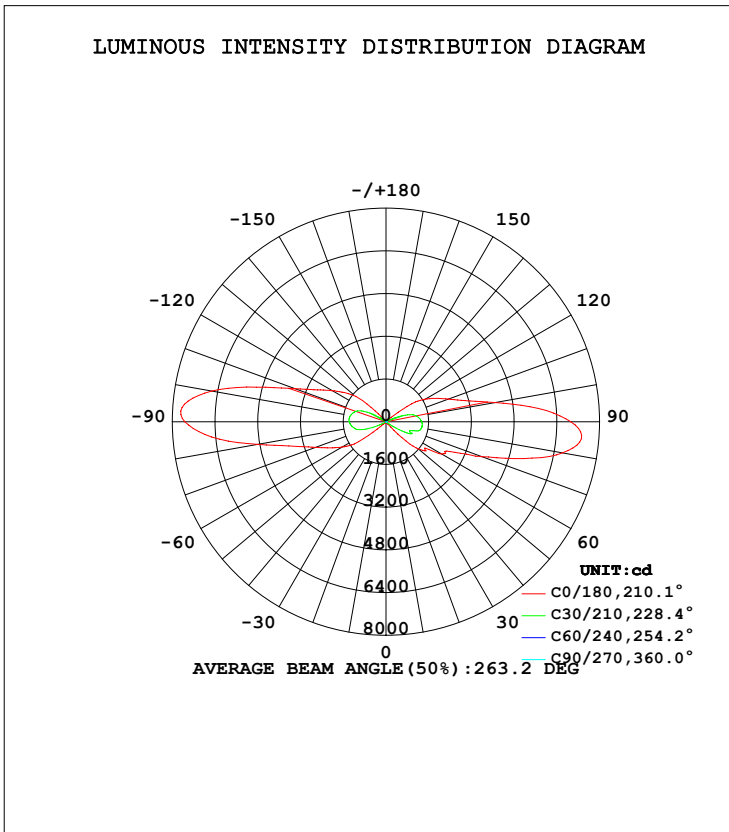


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: Libero Dud 32w	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	Libero Dud 32w	Imax (cd)	7696	S/MH (C0/180)	67.47
NOMINAL POWER (W)	32	LOR (%)	100.0	S/MH (C90/270)	0.12
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	2518.8	η UP, DN (C0-180)	24.8, 25.0
NOMINAL FLUX (lm)	2518.81	CIE CLASS	DIFFUSE	η UP, DN (C180-360)	24.0, 26.2
LAMPS INSIDE	1	η up (%)	48.8	CIBSE SHR NOM	0.00
TEST VOLTAGE (V)	220.3	η down (%)	51.2	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:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	Φ lum,lamp
10	1.124	0.1224	0.1654	1.260	5.248	1.230	0.3492	0.2364	0- 10	0.0439	0.0439	0.00,0.00
20	8.515	1.072	0.2116	3.554	25.90	3.607	0.3089	1.574	10- 20	0.4029	0.4468	0.02,0.02
30	39.06	3.152	0.2075	9.889	52.87	9.895	0.2072	4.191	20- 30	2.037	2.484	0.10,0.10
40	58.32	9.161	0.2001	13.54	135.8	13.63	0.1041	10.57	30- 40	5.199	7.683	0.31,0.31
50	430.6	15.29	0.1885	18.94	1576	17.77	0.0914	15.44	40- 50	27.19	34.88	1.38,1.38
60	1903	19.89	0.1688	63.01	2410	25.85	0.0921	22.42	50- 60	117.0	151.8	6.03,6.03
70	2815	26.24	0.1793	173.6	3830	47.09	0.0925	79.39	60- 70	232.4	384.3	15.3,15.3
80	4900	48.61	0.2024	230.8	6716	106.9	0.0878	202.4	70- 80	381.5	765.7	30.4,30.4
90	7535	93.64	0.2232	229.1	6920	103.2	0.0914	243.4	80- 90	523.0	1289	51.2,51.2
100	6627	88.05	0.2359	179.0	4146	45.14	0.0879	237.0	90-100	509.4	1798	71.4,71.4
110	3628	44.67	0.2498	59.89	2488	24.33	0.1157	175.5	100-110	361.7	2160	85.7,85.7
120	2335	26.09	0.2915	20.43	1693	19.22	0.1006	50.84	110-120	223.3	2383	94.6,94.6
130	1483	20.81	0.3407	15.67	262.0	15.51	0.1295	19.36	120-130	105.7	2489	98.8,98.8
140	120.1	16.22	0.3828	10.90	57.02	9.504	0.1353	15.09	130-140	22.20	2511	99.7,99.7
150	53.61	9.617	0.3758	4.001	39.77	3.431	0.1712	9.951	140-150	5.301	2516	99.9,99.9
160	27.11	3.477	0.3758	1.611	9.344	1.466	0.2232	2.825	150-160	2.082	2518	100,100
170	4.913	1.013	0.2300	0.5542	2.641	0.5882	0.2405	0.9432	160-170	0.4184	2519	100,100
180	1.379	0.3793	0.1978	0.2919	1.392	0.3860	0.2001	0.2919	170-180	0.0474	2519	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

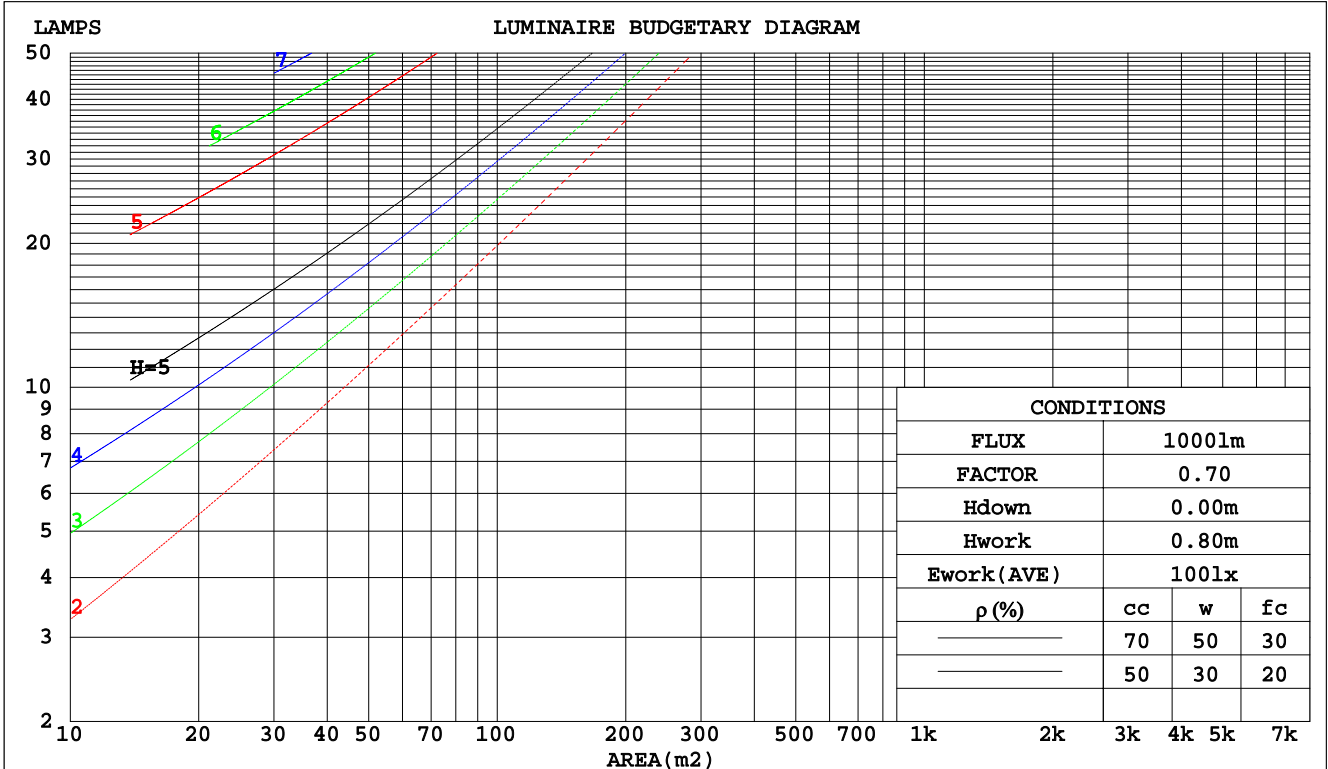
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DOBAC
Test Date:2017-09-30

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: Libero Dud 32w	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.07	1.07	1.07	.99	.99	.99	.84	.84	.84	.70	.70	.70	.57	.57	.57	.51
1.0	.79	.72	.65	.72	.65	.59	.59	.53	.48	.46	.42	.38	.35	.31	.28	.22
2.0	.65	.55	.46	.58	.49	.42	.47	.39	.33	.36	.30	.25	.26	.21	.18	.12
3.0	.54	.44	.35	.49	.39	.32	.39	.31	.25	.29	.23	.18	.21	.16	.12	.07
4.0	.47	.36	.28	.42	.32	.25	.33	.25	.19	.25	.19	.14	.17	.13	.09	.04
5.0	.41	.30	.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	.20	.14	.09	.14	.09	.05	.02
7.0	.32	.23	.16	.29	.21	.14	.23	.16	.11	.18	.12	.08	.12	.08	.04	.01
8.0	.29	.20	.14	.26	.18	.12	.21	.14	.09	.16	.10	.06	.11	.07	.04	.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	.14	.09	.18	.11	.07	.14	.08	.05	.10	.06	.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 Dud 32w	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.556	.316	.100	.534	.304	.097	.492	.282	.090	.453	.261	.084	.417	.242	.078	
2.0	.426	.234	.072	.406	.224	.069	.367	.204	.063	.332	.186	.058	.299	.169	.053	
3.0	.354	.188	.056	.335	.179	.054	.300	.162	.049	.267	.146	.045	.237	.131	.041	
4.0	.304	.158	.047	.287	.150	.044	.255	.135	.040	.225	.121	.036	.197	.107	.033	
5.0	.268	.137	.040	.252	.130	.038	.223	.116	.034	.195	.103	.031	.169	.091	.027	
6.0	.240	.120	.034	.226	.114	.033	.198	.102	.030	.173	.090	.026	.149	.078	.023	
7.0	.217	.107	.030	.204	.102	.029	.179	.090	.026	.155	.080	.023	.133	.069	.020	
8.0	.199	.097	.027	.186	.092	.026	.163	.081	.023	.141	.071	.021	.120	.062	.018	
9.0	.183	.089	.025	.172	.084	.023	.150	.074	.021	.129	.065	.019	.110	.056	.016	
10.0	.170	.081	.023	.159	.077	.021	.139	.068	.019	.120	.059	.017	.102	.051	.015	

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						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.563	.563	.563	.481	.481	.481	.328	.328	.328	.189	.189	.189	.060	.060	.060	
1.0	.573	.529	.490	.490	.454	.422	.335	.312	.292	.193	.181	.170	.062	.058	.055	
2.0	.568	.509	.459	.486	.438	.397	.333	.303	.277	.192	.176	.162	.062	.057	.053	
3.0	.560	.495	.442	.480	.427	.383	.330	.296	.269	.190	.173	.158	.061	.056	.052	
4.0	.552	.484	.431	.474	.418	.375	.326	.291	.264	.188	.171	.156	.061	.056	.051	
5.0	.543	.475	.424	.467	.411	.369	.321	.287	.261	.186	.168	.155	.060	.055	.051	
6.0	.535	.468	.419	.460	.405	.365	.317	.283	.258	.184	.167	.154	.059	.055	.051	
7.0	.527	.462	.415	.453	.400	.362	.313	.280	.257	.182	.165	.153	.059	.054	.051	
8.0	.520	.456	.413	.448	.396	.360	.310	.278	.255	.180	.164	.152	.058	.054	.050	
9.0	.513	.452	.410	.442	.392	.358	.306	.276	.254	.178	.163	.152	.058	.053	.050	
10.0	.507	.448	.409	.437	.389	.356	.303	.274	.253	.177	.162	.151	.057	.053	.050	

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 Dud 32w					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				
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	29.0	30.2	29.9	31.1	32.3	-3.1	-1.9	-2.2	-1.0	0.2				
3H	35.6	36.7	36.5	37.7	38.9	-2.9	-1.8	-2.1	-0.9	0.3				
4H	38.9	40.0	39.8	40.9	42.2	-3.0	-1.9	-2.1	-1.0	0.3				
6H	42.8	43.8	43.7	44.7	46.0	-3.1	-2.1	-2.2	-1.1	0.1				
8H	45.0	46.0	45.9	47.0	48.2	-3.1	-2.1	-2.2	-1.1	0.1				
12H	47.6	48.5	48.5	49.5	50.8	-3.0	-2.1	-2.1	-1.1	0.2				
4H 2H	28.5	29.6	29.4	30.5	31.8	14.8	15.9	15.7	16.9	18.1				
3H	35.6	36.5	36.5	37.5	38.8	14.6	15.5	15.5	16.5	17.8				
4H	39.3	40.1	40.2	41.1	42.4	14.4	15.3	15.4	16.3	17.6				
6H	43.3	44.1	44.3	45.1	46.4	14.3	15.1	15.2	16.1	17.4				
8H	45.7	46.5	46.7	47.5	48.8	14.2	14.9	15.1	15.9	17.3				
12H	48.4	49.2	49.4	50.2	51.5	14.1	14.8	15.0	15.8	17.1				
8H 4H	39.0	39.8	40.0	40.8	42.1	26.1	26.9	27.1	27.9	29.2				
6H	43.4	44.1	44.4	45.1	46.4	26.0	26.6	26.9	27.7	29.0				
8H	45.9	46.6	46.9	47.6	48.9	25.9	26.5	26.9	27.5	28.9				
12H	48.9	49.5	49.9	50.5	51.9	25.8	26.3	26.8	27.4	28.7				
12H 4H	38.9	39.7	39.9	40.7	42.0	30.0	30.8	31.0	31.8	33.1				
6H	43.3	43.9	44.3	44.9	46.3	29.9	30.6	30.9	31.6	32.9				
8H	45.9	46.5	46.9	47.5	48.9	29.9	30.4	30.9	31.5	32.8				
Variations with the observer position at spacings:														
S = 1.0H	+ 0.2 / - 0.2					+ 0.3 / - 0.4								
1.5H	+ 0.4 / - 0.4					+ 0.6 / - 0.2								
2.0H	+ 0.7 / - 0.6					+ 1.5 / - 2.2								

CIE Pub.117 Corrected 2519 lm Total Lamp Luminous Flux.(8log(F/F0) = 3.2)

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 Dud 32w	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

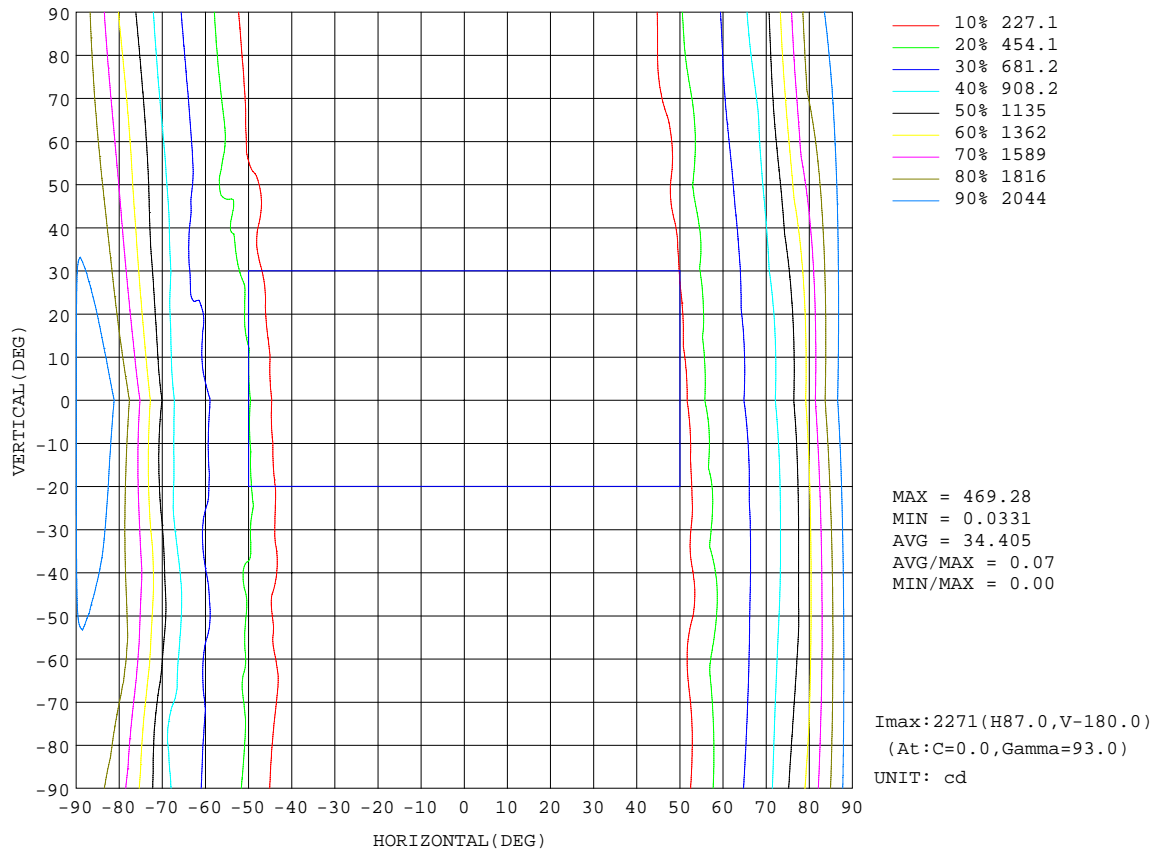
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	30	16	8	29	15	8	26	14	7	0
0.80	37	21	12	35	20	11	31	18	10	1
1.00	43	26	16	40	25	15	35	24	13	2
1.25	49	32	21	46	30	19	39	26	17	4
1.50	55	37	25	50	35	24	43	30	20	6
2.00	62	46	34	58	43	31	48	36	27	9
2.50	68	52	40	63	48	37	53	41	32	12
3.00	72	58	46	67	53	43	56	45	36	15
4.00	79	66	55	72	60	51	60	51	43	19
5.00	83	71	61	76	66	57	63	55	48	23
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 Dud 32w	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

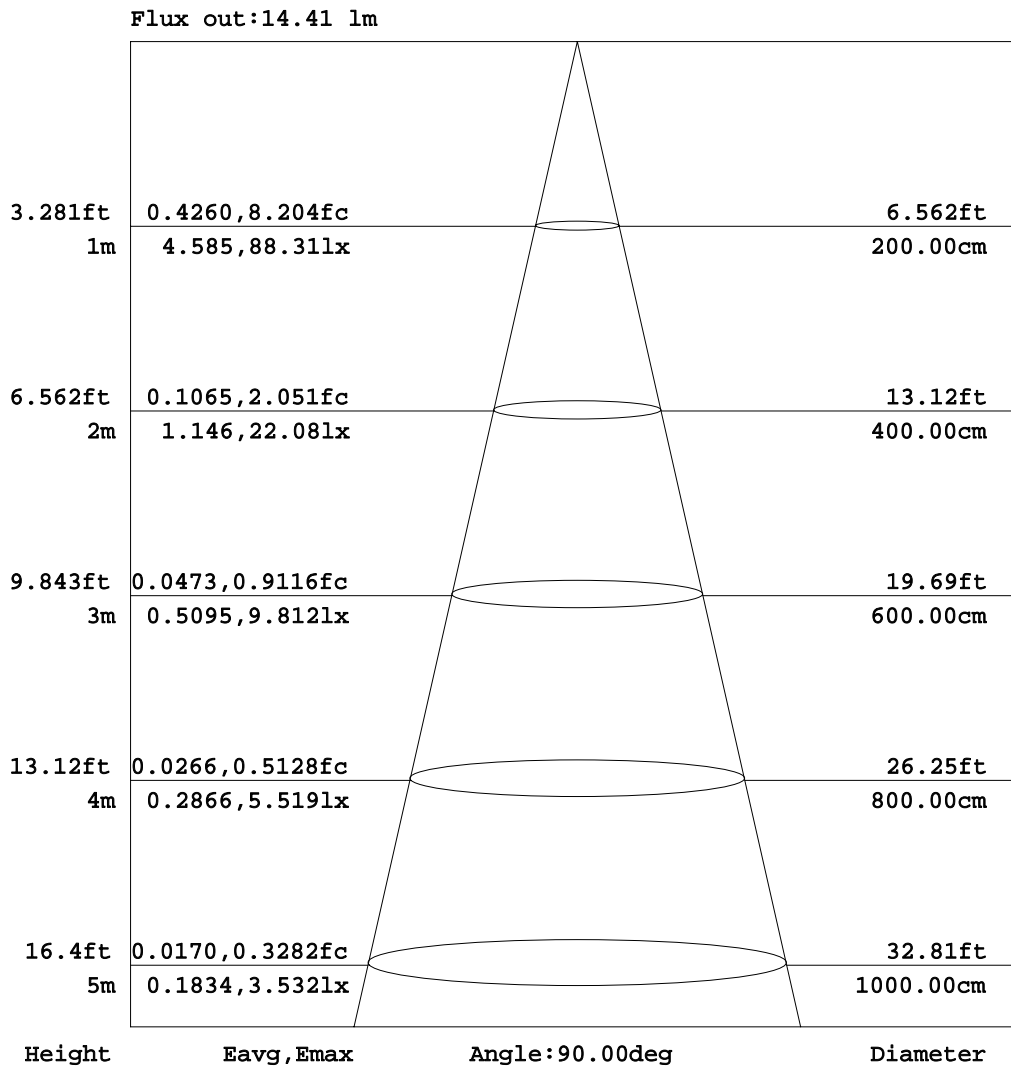


C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DOBAC
 Test Date: 2017-09-30

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 Dud 32w	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:



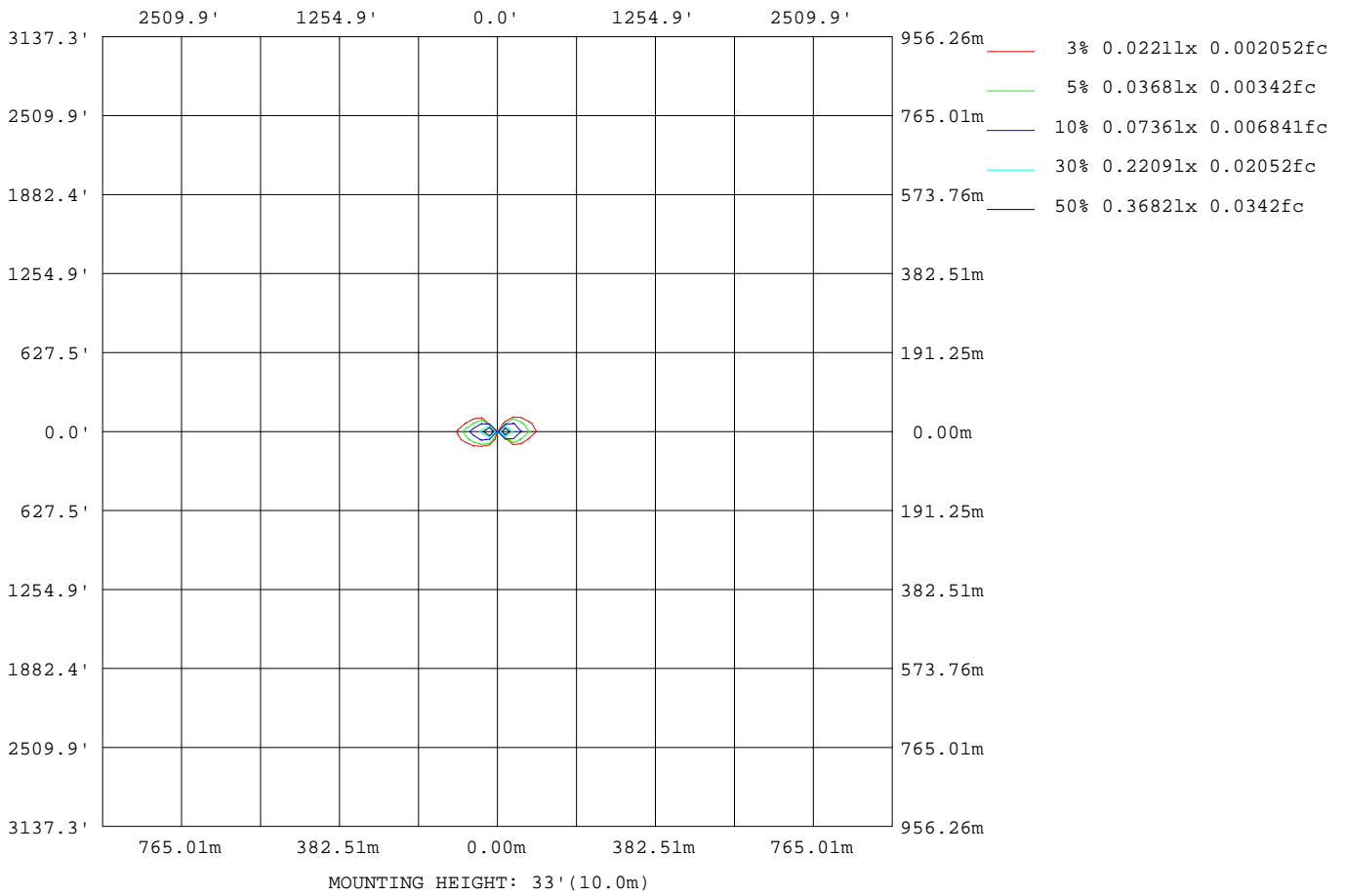
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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 Dud 32w	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:

Average Luminance Table(CIBSE)

NAME: Libero Dud 32w	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	2518.81	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	634321	209181	104919	197821	2630	5008	1060	322	41	77	387	1281	3953	5894	18895	194745	339979	64197	66961
60	951727	55521	709525	140916	1011	6428	1739	431	49	84	443	1913	4654	7255	64407	280274	60785	05238	205181
65	137391	787657	920221	104611	9983	8409	2728	574	62	95	579	2621	5985	10403	155272	27405	60471	18309	563631
70	205781	394641	350715	911953	2452	11489	3932	804	82	131	755	3580	7688	16773	27625	59150	69871	130207	3999707
75	344340	294991	737310	85485	8015	16220	5769	1193	124	182	1032	5003	10549	26458	46058	94866	35894	44655	148061
80	705404	269926	78361	78979	14657	025594	9301	1943	204	291	1584	7547	16032	42602	27536	128672	18836	65339	768968
85	188131	974506	86893	80757	47432	252468	19387	4230	565	614	3191	14903	32115	85092	46756	69740	24537	44707	1068245

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	21068244	200	---	500
Category 2	65 to 90	21068244	200	---	500
Category 3	75 to 90	21068244	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 Dud 32w	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	2518.81	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	634321	091810	104919	197821	2630	5008	1060	322	41	77	387	1281	3953	5894	18895	194745	339979	64197	66961		
60	951727	55521	709525	140916	011	6428	1739	431	49	84	443	1913	4654	7255	64407	280274	60785	05238	205181		
65	137391	087657	202210	46119	983	8409	2728	574	62	95	579	2621	5985	10403	155277	27405	60477	18309	563631		
70	205789	139464	135071	59119	5324	5211	489	3932	804	82	131	755	3580	7688	16773	27625	59150	69871	13020	739970	7
75	344340	219499	737310	85485	8015	16220	5769	1193	124	182	1032	5003	10549	26458	46058	74866	35894	44655	14806	1	
80	705404	169926	78316	78979	1146	5702	5594	9301	1943	204	291	1584	7547	16032	42602	27536	12867	21883	64533	9768	968
85	188133	197450	608689	30757	4743	2252	4681	9387	4230	565	614	3191	14903	32115	85092	46756	69740	24537	44707	1068	245

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	21068244	1000	1500	200	500
65 to 90	21068244	1000	1500	200	500

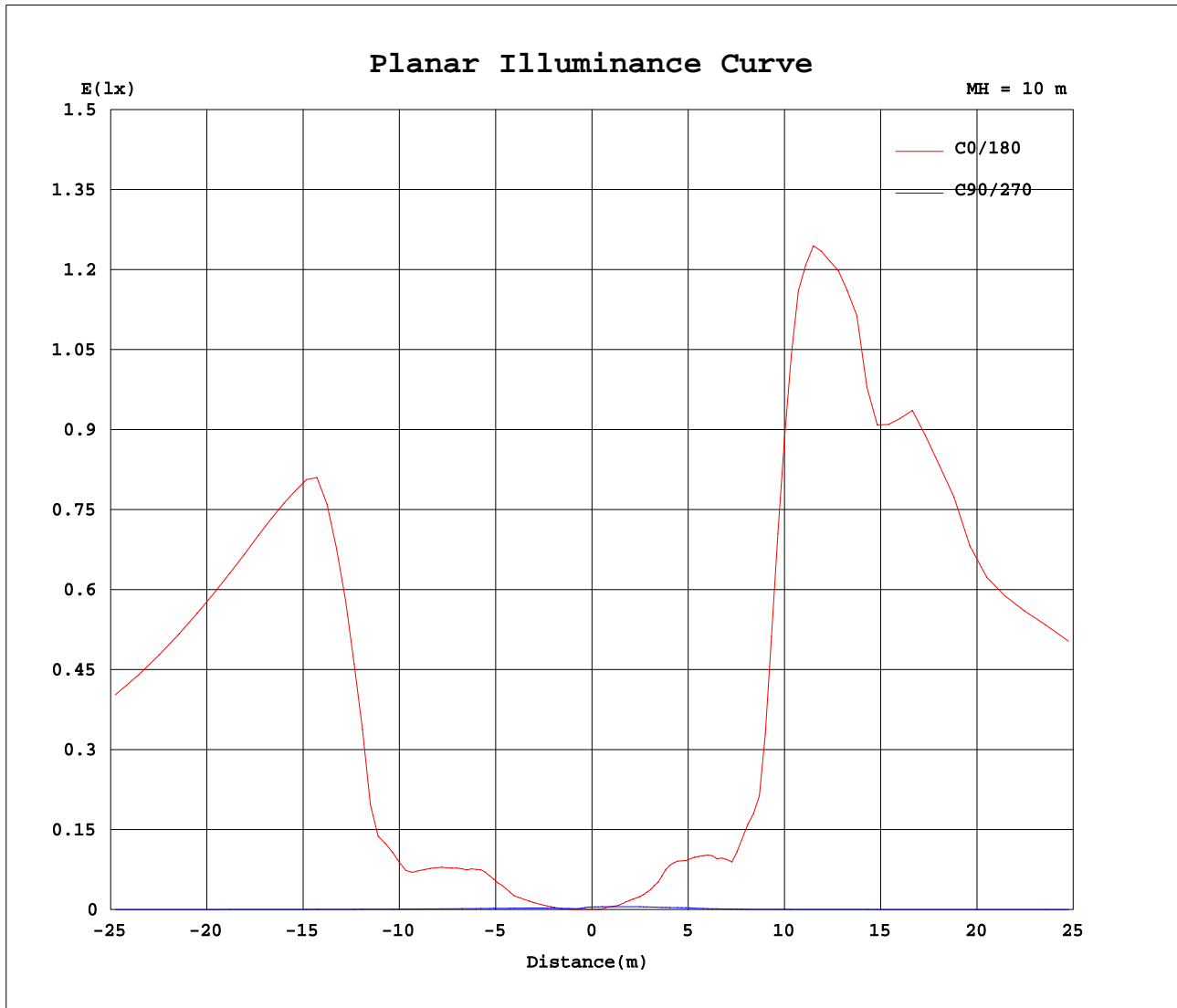
Table 3. Tabulation of average luminance(cd/sq.m.) and luminance limits

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 Dud 32w	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
5	0.24	0.18	0.12	0.08	0.06	0.04	0.04	0.06	0.09	0.12	0.23	0.31	0.38	0.59	0.83	1.03	1.23	1.18	1.71
10	1.12	0.77	0.56	0.34	0.20	0.08	0.03	0.04	0.06	0.17	0.26	0.36	0.52	1.01	1.60	2.13	2.61	2.57	5.25
15	3.80	3.00	2.40	1.59	0.81	0.21	0.08	0.07	0.10	0.20	0.32	0.46	0.9057	1.61	2.75	3.82	4.76	4.76	10.7
20	8.51	6.79	5.26	3.56	1.87	0.61	0.14	0.08	0.13	0.21	0.35	0.6925	1.38	2.45	5.06	8.14	11.1	11.8	25.9
25	20.7	15.6	10.9	6.52	3.44	1.18	0.37	0.11	0.11	0.21	0.44	0.9563	1.89	4.29	9.58	15.4	18.9	18.6	41.7
30	39.1	32.0	23.9	14.5	5.36	1.87	0.60	0.14	0.09	0.21	0.56	1.19	2.72	6.82	14.1	18.5	22.8	22.4	52.9
35	48.1	39.8	33.8	25.5	11.4	2.69	0.8351	0.27	0.07	0.21	0.6676	1.44	4.04	9.59	16.3	22.2	26.6	25.8	58.0
40	58.3	50.0	40.6	30.2	17.4	4.37	1.11	0.39	0.08	0.20	0.7445	1.63	5.11	10.2	18.1	24.1	41.4	54.2	136
45	85.3	54.1	47.2	37.0	22.0	7.30	1.43	0.51	0.09	0.19	0.7802	2.00	7.26	11.9	19.4	44.5	174	323	847
50	431	150	67.9	42.5	25.0	9.64	1.79	0.6216	0.09	0.19	0.8192	2.39	8.54	13.0	27.0	153	571	670	1576
55	1455	939	241	45.4	29.0	11.5	2.43	0.7399	0.09	0.18	0.8885	2.94	9.07	13.5	43.4	447	780	836	1760
60	1903	1511	942	103	32.0	12.9	3.48	0.8618	0.10	0.17	0.8869	3.83	9.31	14.5	129	561	922	1010	2410
65	2323	1839	1339	356	33.8	14.2	4.61	0.9695	0.10	0.16	0.9786	4.43	10.1	17.6	262	723	947	1214	2643
70	2815	2182	1574	809	44.4	15.7	5.38	1.10	0.11	0.18	1.03	4.90	10.5	22.9	378	809	1230	1396	3830
75	3565	2583	1799	1124	70.4	16.8	5.97	1.23	0.13	0.19	1.07	5.18	10.9	27.4	477	775	1407	2015	5330
80	4900	3105	1999	1243	102	17.8	6.46	1.35	0.14	0.20	1.10	5.24	11.1	29.6	504	894	1520	2538	6716
85	6559	3746	2157	1327	165	18.3	6.76	1.47	0.20	0.21	1.11	5.20	11.2	29.7	512	940	1480	2771	7345
90	7535	4282	2257	1381	223	18.6	6.95	1.54	0.22	0.22	1.12	5.17	11.1	28.8	501	932	1555	2577	6920
95	7575	4343	2268	1389	240	18.6	7.01	1.56	0.24	0.23	1.09	4.93	10.9	26.1	473	894	1425	2102	5738
100	6627	3878	2182	1351	208	18.5	7.04	1.57	0.26	0.24	1.04	4.48	10.6	21.6	393	831	1255	1646	4146
105	5022	3236	2023	1284	142	18.5	7.15	1.53	0.27	0.24	0.9777	3.83	10.0	16.8	256	747	1091	1288	3073
110	3628	2685	1833	1169	90.3	18.2	7.00	1.50	0.28	0.25	0.9180	3.17	9.97	15.9	120	634	933	1065	2488
115	2833	2255	1609	939	65.6	17.2	6.74	1.44	0.29	0.26	0.8629	2.75	10.2	15.3	47.4	482	787	893	2084
120	2335	1905	1376	564	43.3	16.1	6.07	1.37	0.29	0.29	0.8136	2.08	9.64	14.3	28.7	200	617	720	1693
125	1914	1581	1055	188	35.6	14.8	5.36	1.33	0.28	0.32	0.7492	1.84	7.47	13.0	22.5	56.3	261	487	1176
130	1483	1139	428	81.4	33.2	13.6	4.52	1.32	0.27	0.34	0.6749	1.53	5.28	12.2	20.4	26.7	59.0	107	262
135	584	340	105	47.6	29.1	13.3	3.33	1.19	0.26	0.35	0.59	1.31	3.61	11.3	17.4	24.2	28.0	32.3	72.7
140	120	86.8	52.3	43.2	24.9	11.2	2.51	1.08	0.30	0.38	0.54	1.14	2.44	7.23	15.9	20.5	25.3	25.3	57.0
145	63.5	55.6	46.2	35.9	23.8	8.05	1.90	0.9429	0.31	0.38	0.48	0.9580	1.88	4.26	11.3	18.1	20.8	21.1	46.7
150	53.6	46.0	38.0	32.5	17.1	5.28	1.58	0.7487	0.30	0.38	0.42	0.7627	1.47	2.65	5.84	11.4	16.5	17.8	39.8
155	47.0	39.6	32.4	21.9	10.2	3.35	1.26	0.53	0.33	0.38	0.40	0.61	1.12	1.84	3.26	5.18	7.95	9.08	20.3
160	27.1	22.3	17.0	11.5	5.48	2.31	0.8018	0.47	0.32	0.38	0.37	0.44	0.7738	1.25	2.10	3.11	3.98	4.27	9.34
165	10.8	8.96	7.09	5.43	3.10	1.33	0.52	0.31	0.21	0.30	0.33	0.38	0.47	0.77	1.26	1.84	2.32	2.53	5.39
170	4.91	4.31	3.53	2.79	1.68	0.62	0.19	0.12	0.12	0.23	0.26	0.29	0.37	0.47	0.66	0.90	1.18	1.33	2.64
175	1.88	1.65	1.39	0.73	0.45	0.22	0.10	0.08	0.07	0.11	0.13	0.27	0.31	0.37	0.50	0.61	0.79	0.86	1.74
180	1.38	1.08	0.81	0.66	0.52	0.30	0.19	0.18	0.19	0.20	0.20	0.20	0.23	0.26	0.33	0.38	0.52	0.57	1.39

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 Dud 32w	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Table--2

UNIT: cd

C(DEG) γ (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31		
5	1.59	1.39	1.18	0.69	0.49	0.37	0.36	0.34	0.34	0.32	0.32	0.37	0.33	0.32	0.31	0.31	0.32		
10	4.60	3.66	2.78	1.73	0.94	0.55	0.46	0.39	0.35	0.30	0.18	0.17	0.20	0.28	0.41	0.56	0.63		
15	9.07	7.57	6.04	3.64	1.45	0.6822	0.54	0.42	0.36	0.23	0.19	0.17	0.50	1.05	1.43	1.79	1.93		
20	21.3	15.5	10.9	5.53	2.49	0.9109	0.57	0.39	0.31	0.20	0.12	0.48	1.15	2.14	3.05	3.88	4.13		
25	36.6	30.1	22.1	9.58	3.35	1.28	0.61	0.40	0.31	0.23	0.29	0.8588	1.87	3.50	5.64	8.37	9.41		
30	45.6	37.2	29.4	17.5	5.49	1.61	0.7136	0.39	0.21	0.14	0.47	1.32	2.67	6.25	11.4	16.5	17.3		
35	49.3	45.1	34.6	20.1	8.38	1.95	0.8639	0.33	0.14	0.15	0.6706	1.68	4.43	10.8	17.5	20.9	21.4		
40	101	48.8	37.7	22.0	8.78	2.80	0.9631	0.34	0.10	0.20	0.8124	2.16	7.01	15.4	20.8	26.2	26.1		
45	529	128	42.2	24.8	10.8	3.56	1.15	0.32	0.10	0.27	0.9911	3.40	10.4	17.6	24.4	28.6	38.1		
50	1304	615	72.0	28.9	11.3	4.03	1.21	0.33	0.09	0.33	1.24	4.86	11.8	20.4	29.3	71.0	180		
55	1648	1214	202	30.2	13.4	5.47	1.36	0.33	0.09	0.41	1.52	6.83	13.2	21.5	62.4	382	618		
60	1729	1450	689	44.5	15.1	6.22	1.27	0.34	0.09	0.49	1.82	8.82	14.7	32.9	302	721	816		
65	2113	1469	1067	70.0	16.4	5.54	1.33	0.35	0.09	0.56	2.47	9.98	15.6	56.9	591	888	994		
70	2626	1677	969	99.5	16.7	6.58	1.45	0.35	0.09	0.6358	2.91	10.4	16.1	165	720	1049	1197		
75	3332	2044	1290	166	16.8	6.81	1.39	0.34	0.09	0.7022	3.41	10.8	19.0	316	819	1217	1487		
80	3967	2173	1351	262	17.2	6.80	1.43	0.30	0.09	0.6569	3.94	11.2	24.4	444	902	1400	1968		
85	4297	2219	1365	281	17.6	7.02	1.50	0.28	0.08	0.7513	4.37	11.5	28.6	509	964	1585	2590		
90	4067	2174	1340	251	17.6	7.05	1.40	0.25	0.09	0.8847	4.63	11.8	31.1	531	1000	1720	2954		
95	3443	2050	1278	178	17.4	7.10	1.37	0.22	0.09	0.9202	4.76	11.9	31.9	535	1002	1723	2943		
100	2788	1878	1183	93.5	17.1	6.99	1.31	0.16	0.09	0.9408	4.81	11.8	30.7	517	972	1603	2551		
105	2311	1671	1026	63.9	16.2	6.39	1.23	0.16	0.11	0.9453	4.63	11.5	27.6	481	914	1417	1942		
110	1968	1450	695	40.2	15.1	5.74	1.13	0.16	0.12	0.9350	4.38	11.2	23.1	382	833	1238	1469		
115	1655	1203	295	32.3	13.8	4.77	1.00	0.16	0.12	0.9017	4.03	10.7	18.3	231	732	1074	1189		
120	1325	739	90.6	30.6	12.7	3.68	0.8890	0.15	0.10	0.8570	3.47	10.3	16.2	97.9	612	913	993		
125	700	177	44.6	28.0	12.4	2.42	0.7706	0.14	0.14	0.7943	2.95	10.1	15.6	43.1	364	748	815		
130	135	60.1	41.6	24.6	10.3	1.85	0.6570	0.13	0.13	0.7422	2.59	9.52	14.3	26.2	97.3	466	607		
135	53.6	46.9	35.8	22.5	7.22	1.51	0.53	0.13	0.13	0.6565	1.79	7.71	13.1	21.2	40.1	95.6	208		
140	48.2	39.4	29.9	18.5	4.31	1.20	0.43	0.14	0.14	0.6091	1.61	5.42	12.2	19.0	25.5	37.3	47.5		
145	39.1	33.6	26.3	11.4	2.92	0.9324	0.33	0.15	0.16	0.55	1.18	3.45	10.3	16.5	22.4	27.5	27.0		
150	33.4	24.7	14.5	5.76	2.08	0.6902	0.25	0.16	0.17	0.48	1.11	2.53	6.15	15.1	19.4	23.2	22.8		
155	15.9	10.7	7.02	3.85	1.43	0.48	0.23	0.17	0.19	0.38	0.8392	1.70	3.89	8.74	15.2	20.2	19.7		
160	7.55	6.04	4.30	2.44	0.90	0.31	0.23	0.18	0.22	0.35	0.60	1.24	1.84	4.17	7.25	10.7	11.0		
165	4.28	3.45	2.43	1.37	0.54	0.27	0.20	0.17	0.22	0.30	0.44	0.7794	1.33	2.29	3.40	4.49	4.49		
170	2.01	1.56	1.21	0.84	0.44	0.23	0.21	0.22	0.24	0.25	0.33	0.51	0.76	1.20	1.67	2.15	2.16		
175	1.39	1.07	0.88	0.66	0.39	0.25	0.24	0.21	0.20	0.21	0.21	0.26	0.42	0.70	0.96	1.01	1.10		
180	1.07	0.82	0.67	0.50	0.32	0.18	0.18	0.19	0.20	0.20	0.20	0.23	0.26	0.34	0.39	0.51	0.57		

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: