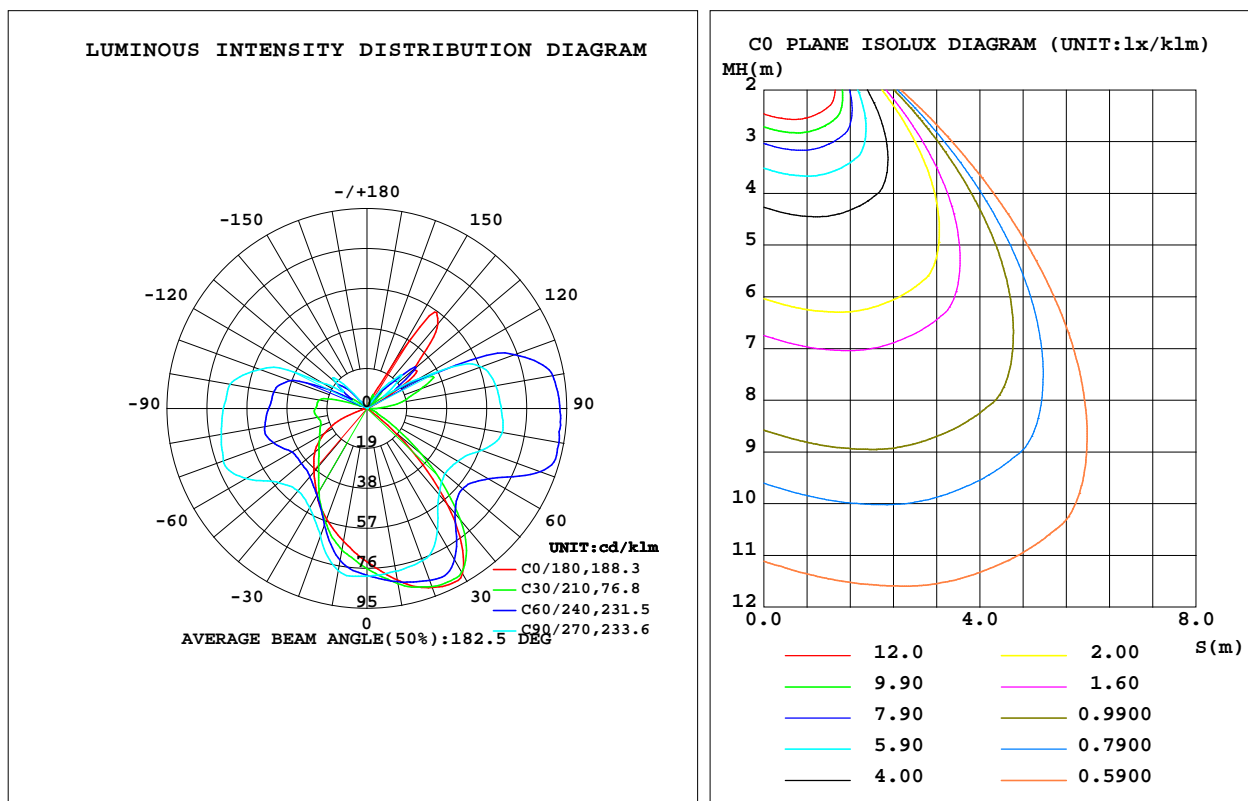


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.39V I:0.0820A P:9.2828W PF:0.9391 Freq:59.98Hz Lamp Flux:1000x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Libo	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 43.37 lm/W			
MODEL	3020CDBZ	I _{max} (cd/klm)	92.84	S/MH(C0/180)	1.00
NOMINAL POWER(W)	9	LOR(%)	40.3	S/MH(C90/270)	1.03
RATED VOLTAGE(V)	120	TOTAL FLUX(lm/klm)	402.56	h UP,DN(C0-180)	6.6,14.3
NOMINAL FLUX(lm)	600	CIE CLASS	SEMI-D.	h UP,DN(C180-360)	6.1,13.3
LAMPS INSIDE	1	h up(%)	12.7	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	120	h down(%)	27.6	CIBSE SHR MAX	1.15



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jack
Test Date:05 May 2018

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.0.402
Humidity:65.0%
Test Distance:3.010m [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	82.68	84.98	78.54	71.27	64.11	71.16	78.27	85.98	0- 10	7.411	7.411	1.84,0.74
20	90.53	88.97	76.95	64.52	56.00	58.80	64.75	85.53	10- 20	21.39	28.80	7.15,2.88
30	90.74	90.04	66.97	58.24	47.62	45.78	54.55	68.72	20- 30	32.01	60.81	15.1,6.08
40	59.56	69.60	53.34	48.19	39.17	39.31	51.16	46.46	30- 40	35.65	96.46	24,9.65
50	16.40	49.09	48.41	36.50	32.43	35.12	54.89	30.72	40- 50	33.25	129.7	32.2,13
60	1.266	44.80	50.04	29.44	23.12	32.92	66.56	27.52	50- 60	32.12	161.8	40.2,16.2
70	0.5135	55.70	58.09	25.68	8.475	33.78	72.65	24.61	60- 70	35.81	197.6	49.1,19.8
80	0.4012	60.71	65.41	22.83	2.047	37.38	70.34	25.88	70- 80	38.78	236.4	58.7,23.6
90	0.3926	67.47	63.86	24.95	0.9257	36.14	68.29	34.95	80- 90	39.57	276.0	68.6,27.6
100	0.3912	75.79	62.26	25.62	1.386	34.59	66.18	38.44	90-100	39.44	315.4	78.4,31.5
110	0.6678	64.99	57.85	15.21	0.4418	22.81	54.32	45.99	100-110	36.10	351.5	87.3,35.2
120	10.75	20.39	28.12	10.00	0.5786	10.06	23.85	33.74	110-120	24.44	376.0	93.4,37.6
130	29.58	14.37	17.21	3.694	0.5106	7.514	19.50	11.50	120-130	12.07	388.0	96.4,38.8
140	52.36	0.9667	14.84	2.545	0.3424	4.761	2.926	0.7118	130-140	9.243	397.3	98.7,39.7
150	20.39	3.141	0.9113	0.4567	0.2432	0.4458	0.6390	1.886	140-150	4.439	401.7	99.8,40.2
160	2.234	0.2598	0.2970	0.3644	0.1251	0.3648	0.2012	0.2026	150-160	0.7135	402.4	100,40.2
170	0.1166	0.7431	0.2708	0.1990	0.0772	0.2227	0.2965	0.7970	160-170	0.1067	402.5	100,40.3
180	0.4610	0.4282	0.4579	0.4576	0.4625	0.4319	0.4542	0.4539	170-180	0.0244	402.6	100,40.3
DEG	LUMINOUS INTENSITY:cd/klm									UNIT:lm/klm		

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Jack
 Test Date:05 May 2018

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.0.402
 Humidity:65.0%
 Test Distance:3.010m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:120.39V I:0.0820A P:9.2828W PF:0.9391 Freq:59.98Hz Lamp Flux:1000x1 lm											
NAME:			TYPE:			WEIGHT:					
SPEC.:			DIM.:			SERIAL No.:					
MFR.: Libo			SUR.:			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	3.1	4.4	3.8	5.0	5.9	10.5	11.7	11.2	12.4	13.2	
	2.8	4.0	3.5	4.7	5.5	14.3	15.4	15.0	16.1	17.0	
	2.7	3.8	3.4	4.5	5.4	16.4	17.5	17.1	18.2	19.1	
	2.5	3.5	3.3	4.3	5.2	18.6	19.6	19.3	20.3	21.2	
	2.5	3.4	3.2	4.2	5.1	19.7	20.7	20.4	21.4	22.3	
	2.4	3.3	3.1	4.1	5.0	20.9	21.9	21.7	22.6	23.6	
4H	2H	7.0	8.0	7.7	8.8	9.6	11.2	12.3	11.9	13.0	13.9
	3H	7.2	8.1	7.9	8.9	9.8	15.8	16.8	16.6	17.5	18.4
	4H	7.0	7.9	7.8	8.7	9.6	18.2	19.1	19.0	19.8	20.8
	6H	6.9	7.6	7.7	8.5	9.4	20.5	21.3	21.3	22.1	23.1
	8H	6.8	7.5	7.6	8.3	9.3	21.7	22.4	22.5	23.2	24.2
	12H	6.7	7.4	7.5	8.2	9.2	23.0	23.6	23.8	24.5	25.5
8H	4H	12.8	13.5	13.6	14.3	15.3	18.7	19.4	19.5	20.2	21.2
	6H	13.0	13.6	13.8	14.4	15.5	21.6	22.2	22.4	23.1	24.1
	8H	12.9	13.5	13.8	14.3	15.4	23.1	23.7	24.0	24.5	25.6
	12H	12.8	13.3	13.7	14.2	15.3	24.7	25.2	25.5	26.0	27.1
12H	4H	14.4	15.1	15.3	15.9	17.0	18.7	19.3	19.5	20.2	21.2
	6H	15.5	16.1	16.4	16.9	18.0	21.7	22.3	22.6	23.1	24.2
	8H	15.7	16.2	16.6	17.1	18.2	23.5	23.9	24.3	24.8	25.9
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1					
1.5H	+ 0.2 / - 0.1					+ 0.3 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.4 / - 0.5					

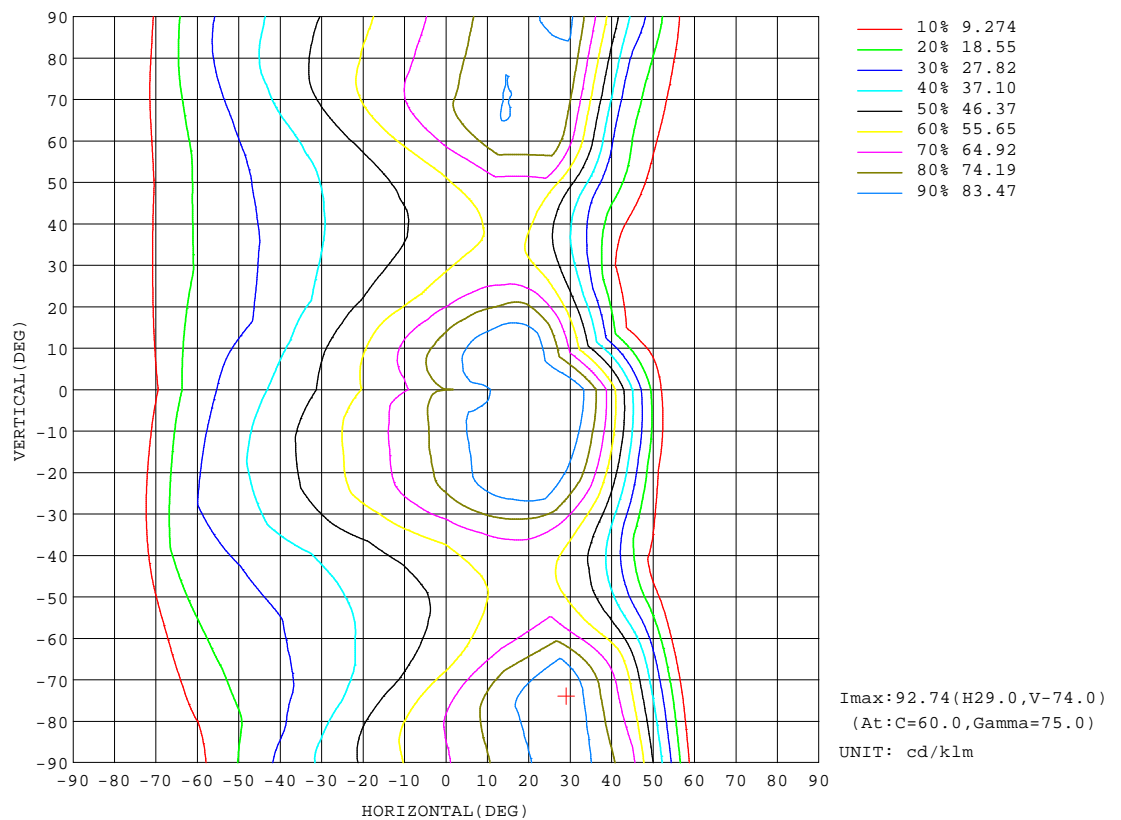
CIE Pub.117, 600.0 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = -1.8$)

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jack
Test Date:05 May 2018

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.0.402
Humidity:65.0%
Test Distance:3.010m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:120.39V I:0.0820A P:9.2828W PF:0.9391 Freq:59.98Hz Lamp Flux:1000x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Libo	SUR.:	Shielding Angle:

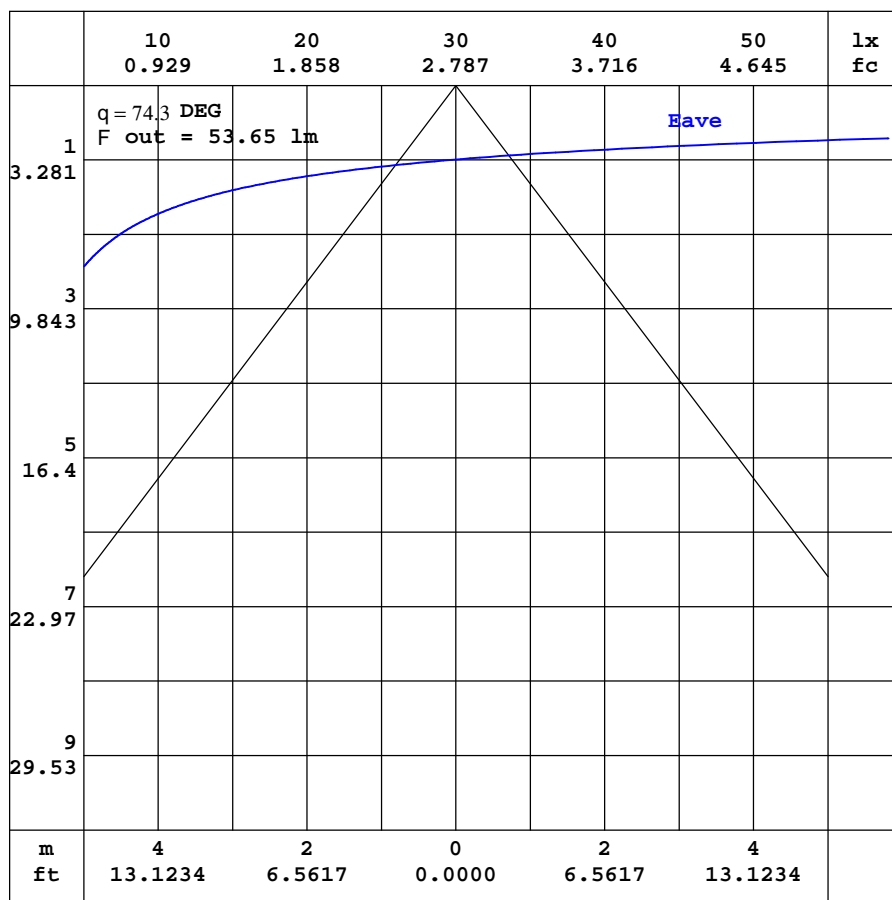


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Jack
Test Date: 05 May 2018

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.0.402
Humidity: 65.0%
Test Distance: 3.010m [K=1.0000]
Remarks:

AAI CURVES

Test:U:120.39V I:0.0820A P:9.2828W PF:0.9391 Freq:59.98Hz Lamp Flux:1000x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Libo	SUR.:	Shielding Angle:



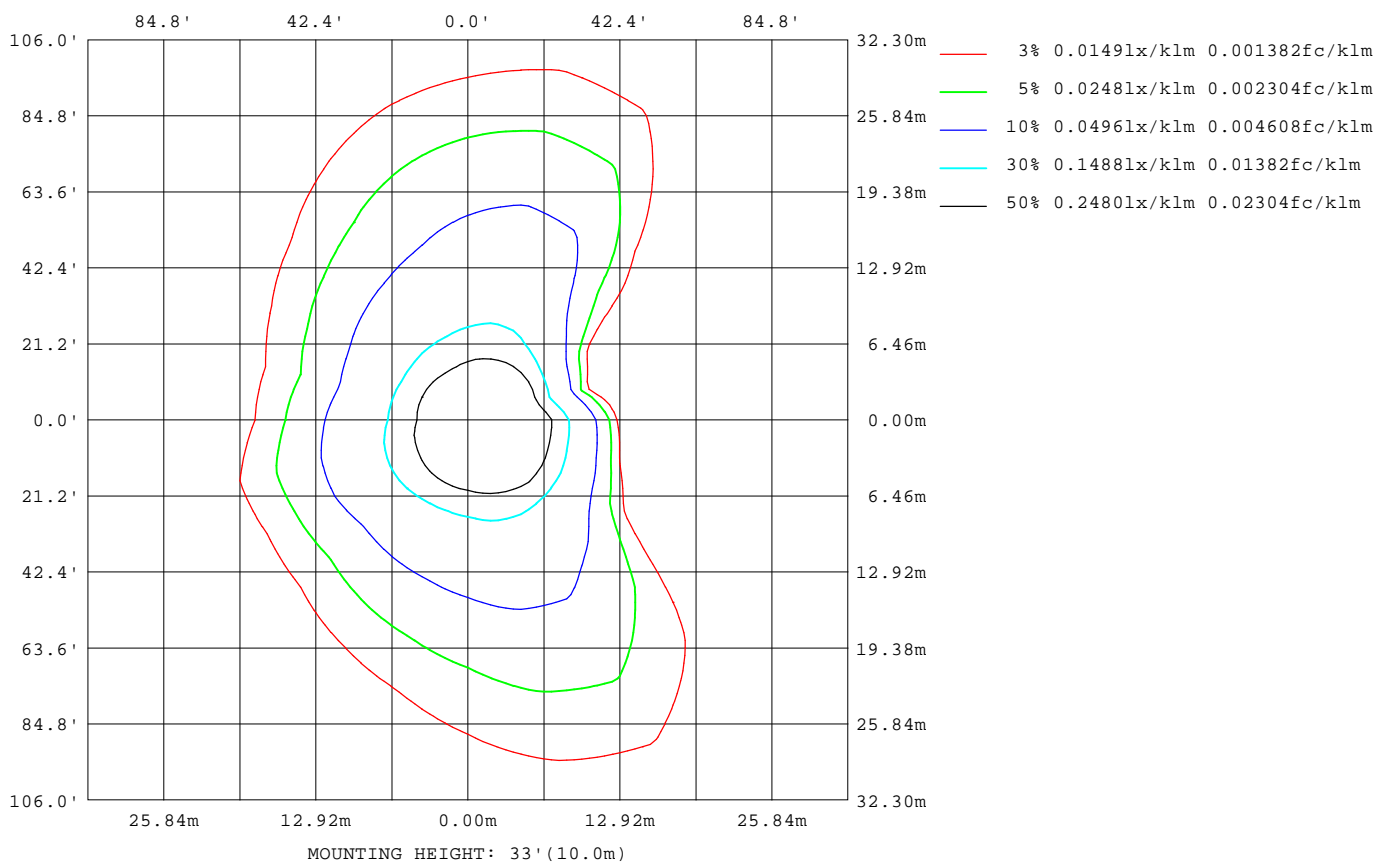
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Jack
Test Date: 05 May 2018

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.0.402
Humidity: 65.0%
Test Distance: 3.010m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:120.39V I:0.0820A P:9.2828W PF:0.9391 Freq:59.98Hz Lamp Flux:1000x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Libo	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jack
Test Date:05 May 2018

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.0.402
Humidity:65.0%
Test Distance:3.010m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:120.39V I:0.0820A P:9.2828W PF:0.9391 Freq:59.98Hz Lamp Flux:1000x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Libo	SUR.:	Shielding Angle:

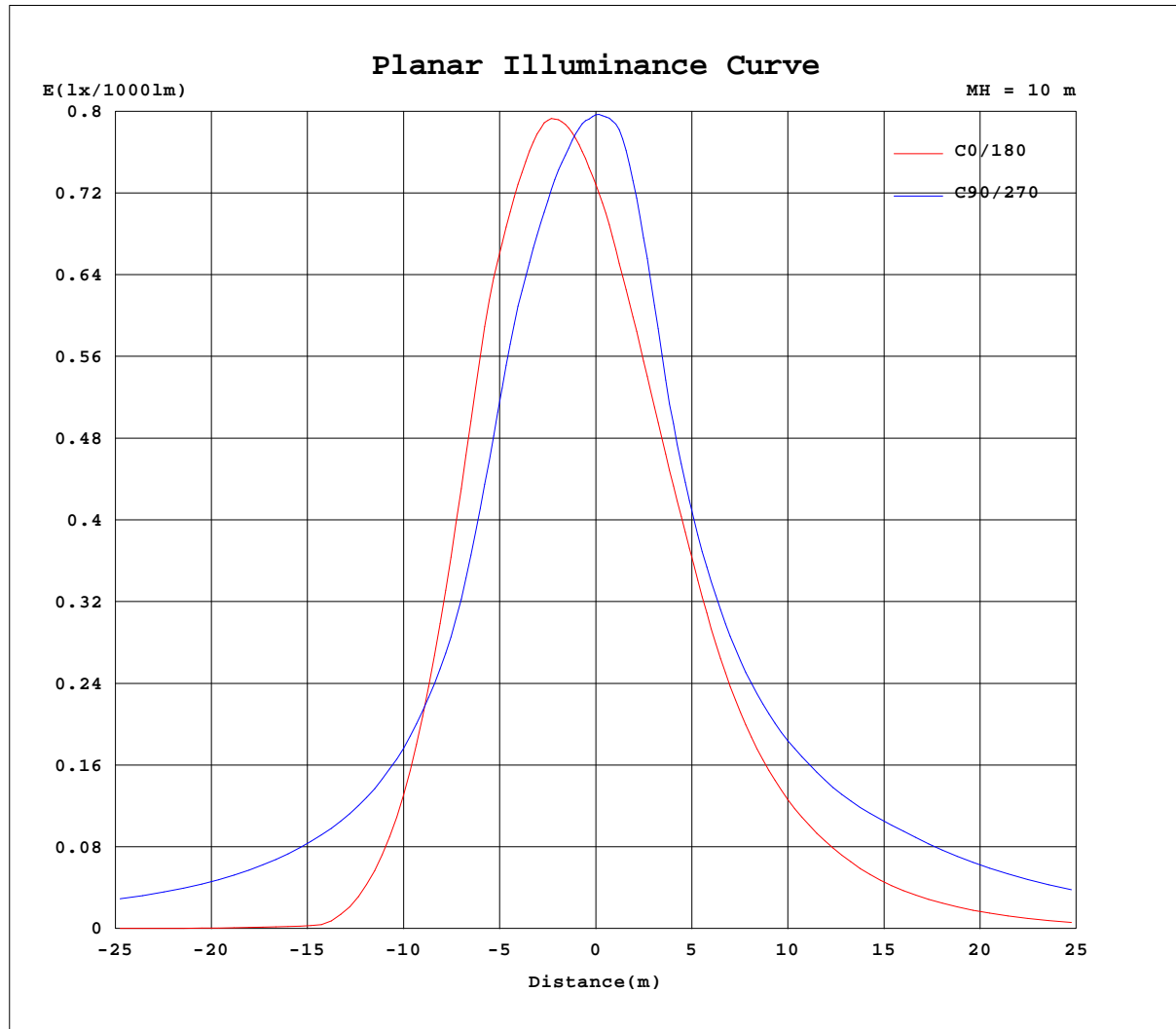
AvgL	cd/m2
L_0~180(65)av	125
L_0~180(75)av	36
L_0~180(85)av	57
L_90~270(65)av	880
L_90~270(75)av	1557
L_90~270(85)av	4617
L_45(65)av	480
L_45(75)av	836
L_45(85)av	2628

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jack
Test Date:05 May 2018

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.0.402
Humidity:65.0%
Test Distance:3.010m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Jack
 Test Date: 05 May 2018

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.0.402
 Humidity: 65.0%
 Test Distance: 3.010m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.39V I:0.0820A P:9.2828W PF:0.9391 Freq:59.98Hz Lamp Flux:1000x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Libo	SUR.:	Shielding Angle:

Table--1

UNIT: cd/klm

C(DEG) g (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	72.8	73.6	76.1	78.4	79.3	79.7	79.7	79.5	79.2	78.9	78.2	77.2	72.8	73.6	76.1	78.4	79.3	79.7	79.7
5	77.6	78.3	80.2	81.6	81.4	80.5	79.2	77.9	76.4	75.1	73.6	72.2	68.5	69.5	71.9	75.1	77.2	78.8	80.0
10	82.7	83.0	84.4	85.0	83.5	81.1	78.5	75.8	73.3	71.3	69.3	68.1	64.1	65.3	68.3	71.2	73.4	75.4	78.3
15	87.5	87.7	87.9	87.4	85.3	81.7	77.8	74.4	70.6	67.9	65.6	64.0	60.0	61.2	63.6	65.4	66.8	68.8	72.8
20	90.5	90.3	90.1	89.0	86.9	82.4	76.9	72.3	67.8	64.5	61.8	60.0	56.0	56.8	57.6	58.8	59.1	60.9	64.8
25	92.3	91.7	90.9	89.9	87.6	81.1	74.1	69.3	65.3	61.4	58.4	56.1	52.1	52.2	51.7	51.7	52.3	54.2	58.7
30	90.7	90.5	90.0	90.0	83.1	74.7	67.0	63.2	60.4	58.2	54.8	52.6	47.6	47.0	45.7	45.8	47.6	49.9	54.5
35	78.4	79.4	82.5	83.6	74.3	65.8	58.7	55.8	53.9	54.0	51.2	48.8	43.1	41.4	40.0	42.0	44.6	47.3	52.1
40	59.6	62.9	69.1	69.6	65.3	60.2	53.3	49.2	47.0	48.2	47.5	44.5	39.2	36.3	35.9	39.3	42.4	46.1	51.2
45	37.1	42.7	51.4	56.7	60.7	57.4	50.0	45.3	42.0	42.2	43.7	41.0	35.8	31.3	32.4	36.9	40.9	46.0	52.1
50	16.4	22.7	33.8	49.1	59.5	56.5	48.4	42.9	39.0	36.5	39.2	37.4	32.4	26.9	29.8	35.1	40.8	46.9	54.9
55	2.23	6.31	18.7	45.5	61.5	58.3	48.7	41.6	36.9	31.9	34.0	34.0	28.1	23.7	27.7	33.7	40.6	49.1	59.9
60	1.27	1.70	9.34	44.8	66.9	61.6	50.0	41.3	35.3	29.4	29.3	30.7	23.1	21.4	26.0	32.9	41.3	53.7	66.6
65	0.79	1.14	5.35	48.2	76.8	67.8	52.7	41.8	34.2	27.5	24.7	26.6	16.8	18.4	24.8	32.3	44.4	58.2	71.3
70	0.51	0.80	3.88	55.7	87.7	76.2	58.1	43.2	32.9	25.7	21.8	21.0	8.47	15.1	23.5	33.8	47.5	61.5	72.6
75	0.40	0.61	2.31	59.7	92.8	81.3	62.9	47.3	32.4	24.1	18.6	13.1	2.70	10.8	22.9	35.9	49.7	61.7	71.5
80	0.40	0.51	1.96	60.7	92.7	81.1	65.4	50.9	34.9	22.8	14.3	4.49	2.05	7.79	24.0	37.4	49.3	60.0	70.3
85	0.43	0.46	1.93	63.3	92.4	79.8	64.9	52.7	37.3	22.7	9.46	2.29	1.23	5.54	25.1	37.3	48.1	58.8	69.3
90	0.39	0.43	3.98	67.5	91.7	78.4	63.9	51.9	38.5	24.9	6.76	1.70	0.93	3.00	24.6	36.1	46.7	57.5	68.3
95	0.37	0.44	8.32	72.7	90.9	77.4	63.1	51.0	37.6	26.4	4.80	0.96	0.46	2.21	23.8	35.1	45.5	56.6	67.0
100	0.39	0.53	15.9	75.8	89.7	76.1	62.3	49.9	36.8	25.6	3.66	1.25	1.39	2.55	23.1	34.6	45.0	55.8	66.2
105	0.42	0.56	20.6	72.3	84.4	73.9	60.8	48.9	36.4	24.3	3.50	0.75	0.73	3.22	17.3	32.9	43.2	53.1	61.1
110	0.67	0.75	27.3	65.0	74.9	67.7	57.9	47.4	32.7	15.2	1.78	0.64	0.44	2.59	4.51	22.8	39.0	47.6	54.3
115	1.19	2.59	35.1	40.5	54.7	57.6	49.2	37.1	20.6	4.69	1.82	0.60	0.07	0.63	4.79	9.24	24.3	37.4	45.9
120	10.8	6.92	25.8	20.4	27.6	29.9	28.1	20.2	7.27	10.0	3.81	1.34	0.58	0.85	9.52	10.1	10.4	18.2	23.8
125	27.4	10.4	11.0	20.7	17.5	13.6	11.5	7.97	11.4	12.1	3.01	0.62	0.24	0.45	7.32	16.1	12.5	9.40	14.0
130	29.6	12.5	2.88	14.4	30.4	20.6	17.2	16.3	16.8	3.69	0.61	0.49	0.51	0.69	0.63	7.51	17.9	18.0	19.5
135	40.3	23.5	6.22	3.12	18.6	23.8	22.5	18.4	12.3	2.53	0.55	0.35	0.36	0.44	0.94	5.51	13.3	16.5	17.9
140	52.4	40.4	10.7	0.97	10.1	14.1	14.8	12.8	7.91	2.55	1.84	0.42	0.34	0.64	2.51	4.76	3.72	4.31	2.93
145	56.0	38.7	3.41	0.71	4.40	7.80	6.30	2.00	1.34	0.64	0.44	0.45	0.28	0.43	0.34	6.00	0.78	0.65	0.94
150	20.4	11.0	6.27	3.14	1.08	2.34	0.91	1.49	0.90	0.46	0.49	0.28	0.24	0.40	0.54	0.45	0.40	1.78	0.64
155	7.23	10.2	7.00	0.34	0.54	0.57	0.51	0.40	0.28	0.34	0.37	0.24	0.19	0.33	0.46	0.33	0.23	0.33	0.45
160	2.23	5.04	0.31	0.26	0.21	0.28	0.30	0.27	0.59	0.36	0.17	0.17	0.13	0.19	0.24	0.36	0.81	0.22	0.20
165	0.20	0.34	0.30	0.19	0.74	0.17	0.22	0.32	0.91	0.28	0.20	0.12	0.08	0.09	0.19	0.30	1.00	0.43	0.21
170	0.12	0.14	0.21	0.74	0.68	0.21	0.27	0.42	0.36	0.20	0.11	0.09	0.08	0.06	0.09	0.22	0.40	0.42	0.30
175	0.26	0.27	0.26	0.23	0.21	0.24	0.26	0.29	0.27	0.25	0.12	0.08	0.08	0.08	0.13	0.27	0.36	0.36	0.30
180	0.46	0.45	0.41	0.43	0.44	0.45	0.46	0.45	0.46	0.46	0.43	0.41	0.46	0.45	0.42	0.43	0.44	0.45	0.45

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jack
Test Date:05 May 2018

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.0.402
Humidity:65.0%
Test Distance:3.010m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.39V I:0.0820A P:9.2828W PF:0.9391 Freq:59.98Hz Lamp Flux:1000x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Libo	SUR.:	Shielding Angle:

Table--2

UNIT: cd/klm

C(DEG) g (DEG)	285	300	315	330	345														
0	79.5	79.2	78.9	78.2	77.2														
5	81.0	81.9	82.8	82.7	82.2														
10	81.2	84.3	86.0	86.5	86.2														
15	77.5	83.1	87.5	88.3	88.3														
20	70.8	77.9	85.5	89.2	89.2														
25	63.7	69.9	80.5	85.2	83.2														
30	59.1	63.2	68.7	71.2	68.8														
35	56.4	58.2	56.9	53.1	49.1														
40	55.9	56.2	46.5	34.9	28.7														
45	57.7	56.4	37.4	19.1	10.5														
50	61.8	58.3	30.7	7.60	2.00														
55	69.8	65.1	26.9	2.53	1.44														
60	78.3	74.1	27.5	2.03	1.03														
65	83.2	79.6	27.1	1.70	0.78														
70	83.7	79.9	24.6	1.50	0.65														
75	83.5	80.8	24.6	1.36	0.61														
80	83.1	82.0	25.9	1.20	0.53														
85	82.4	83.6	29.4	1.13	0.44														
90	81.5	85.4	34.9	1.13	0.35														
95	80.3	83.3	37.8	1.45	0.41														
100	75.5	75.8	38.4	3.08	0.69														
105	68.3	66.4	41.7	9.62	1.08														
110	59.2	55.7	46.0	20.0	5.53														
115	49.0	37.1	42.3	29.0	20.0														
120	24.5	20.6	33.7	20.0	28.5														
125	18.0	20.7	24.0	7.14	24.9														
130	24.4	17.6	11.5	2.16	23.0														
135	15.2	4.41	1.27	9.13	31.3														
140	4.38	2.40	0.71	14.6	38.7														
145	3.24	1.38	1.74	5.57	30.0														
150	1.17	0.90	1.89	4.66	3.87														
155	0.43	0.30	0.42	4.64	1.55														
160	0.19	0.26	0.20	0.32	0.40														
165	0.21	0.79	0.49	0.28	0.22														
170	0.26	0.69	0.80	0.25	0.15														
175	0.21	0.20	0.21	0.21	0.21														
180	0.45	0.45	0.45	0.43	0.41														

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jack
Test Date:05 May 2018

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.0.402
Humidity:65.0%
Test Distance:3.010m [K=1.0000]
Remarks: