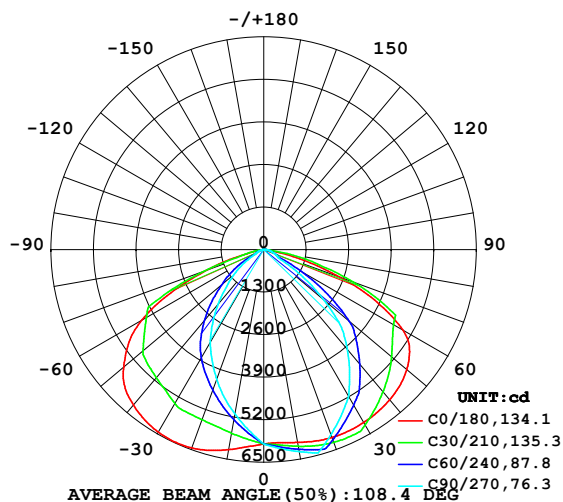


LUMINAIRE PHOTOMETRIC TEST REPORT

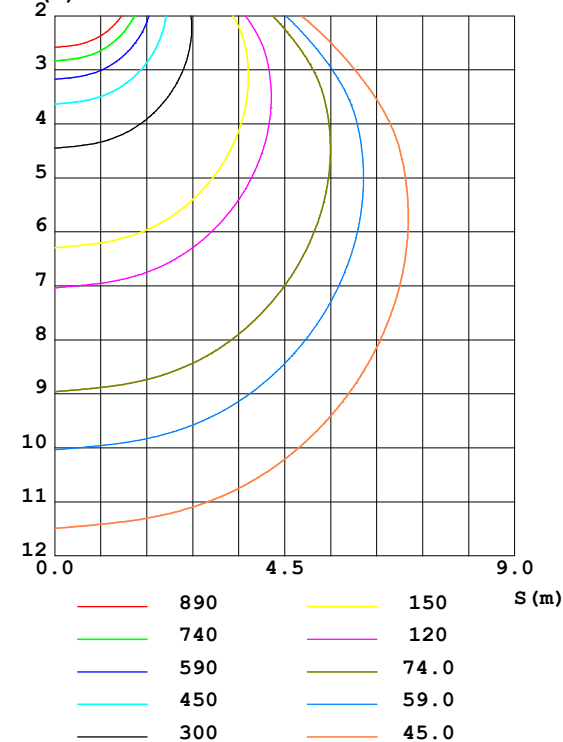
Test:U:230.00V I:0.6300A P:139.00W PF:0.9590 Freq:50.00Hz Lamp Flux:16555.1x1 lm		
NAME: DETA	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 119.10 lm/W			
MODEL	BR3104	I _{max} (cd)	6594	S/MH(C0/180)	1.60
NOMINAL POWER(W)	139	LOR(%)	100.0	S/MH(C90/270)	0.88
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	16555	η UP,DN(C0-180)	0.0,56.1
NOMINAL FLUX(lm)	16555.1	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,43.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230.0	η down(%)	100.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2022-04-06

V(B) Range:-90 - 90DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

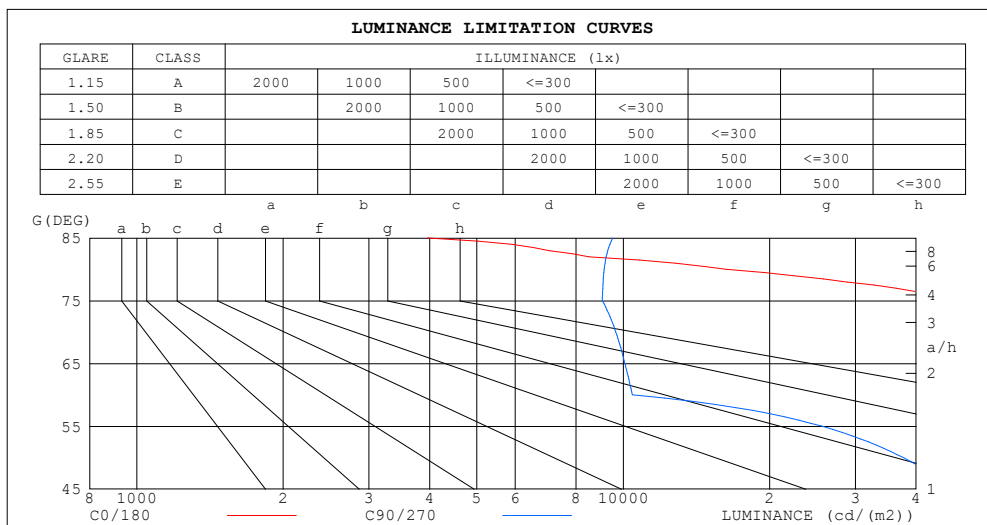
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	5983	6151	6269	6308	6205	5464	5100	5339	0- 10	560.2	560.2	3.38,3.38
20	6109	6352	6017	6578	6448	5016	4211	4783	10- 20	1635	2195	13.3,13.3
30	6104	5822	5184	6018	6443	4506	3275	4243	20- 30	2511	4706	28.4,28.4
40	5990	5224	3974	5396	6201	3815	2169	3559	30- 40	3059	7765	46.9,46.9
50	5707	4411	2420	4615	5588	2806	1190	2611	40- 50	3194	10959	66.2,66.2
60	4900	2904	521.9	3008	4297	1601	338.7	1444	50- 60	2792	13751	83.1,83.1
70	2494	935.5	330.3	715.8	1873	255.6	164.9	252.5	60- 70	1864	15615	94.3,94.3
80	283.2	166.1	158.7	149.6	91.22	52.03	52.20	67.92	70- 80	834.6	16450	99.4,99.4
90	2.228	6.382	7.207	6.269	3.964	1.284	0.7606	1.277	80- 90	105.2	16555	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2022-04-06

V(B) Range:-90 - 90DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:230.00V I:0.6300A P:139.00W PF:0.9590 Freq:50.00Hz Lamp Flux:16555.1x1 lm		
NAME: DETA	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	3957	9518
80	16309	9140
75	48704	9059
70	72914	9657
65	90737	10083
60	97998	10439
55	94875	25649
50	88792	37654
45	83181	47653

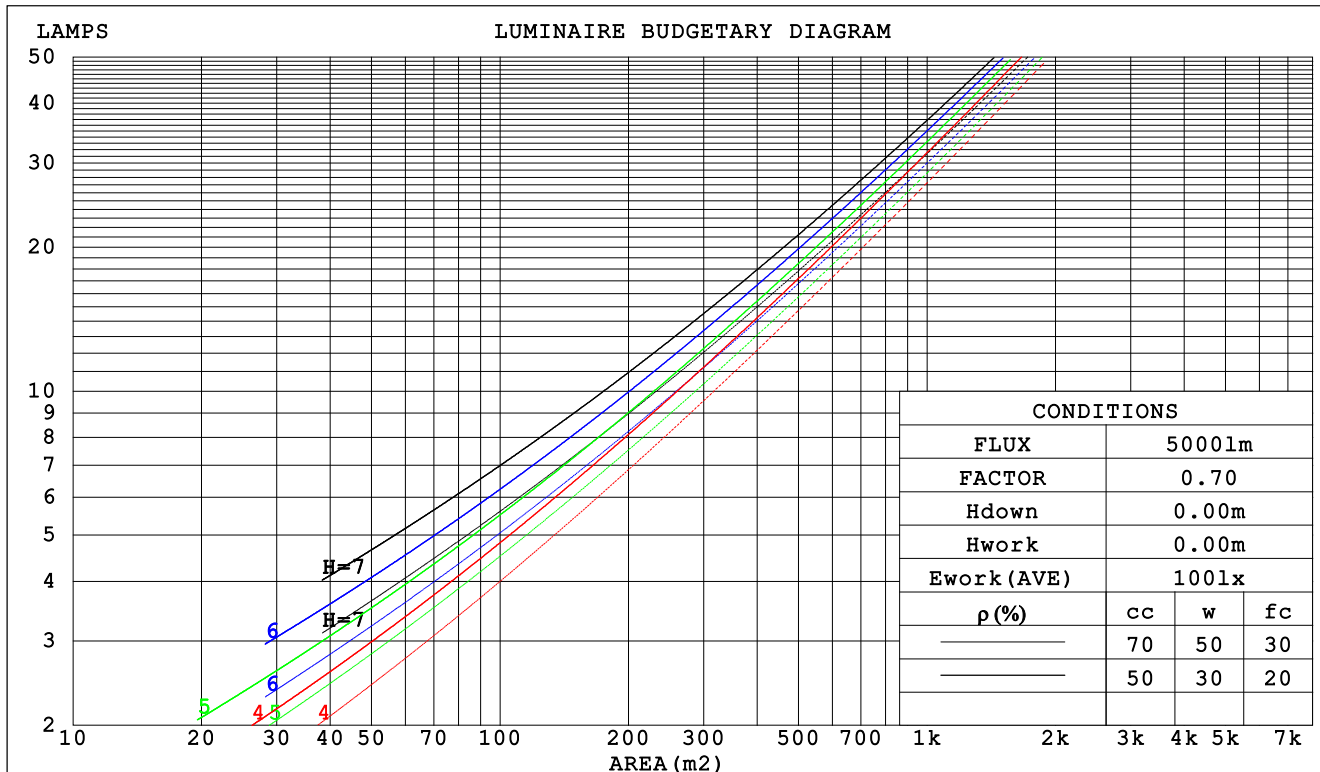
H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2022-04-06

V(B) Range:-90 - 90DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.00V I:0.6300A P:139.00W PF:0.9590 Freq:50.00Hz Lamp Flux:16555.1x1 lm		
NAME: DETA	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding 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						Coefficients of Utilization(CU)									
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.05	1.01	.98	1.03	.99	.96	.99	.96	.93	.95	.92	.90	.91	.89	.88	.85
2.0	.92	.86	.80	.90	.84	.79	.87	.82	.77	.84	.79	.76	.81	.77	.74	.72
3.0	.81	.73	.67	.80	.72	.66	.77	.70	.65	.74	.69	.64	.71	.67	.63	.61
4.0	.72	.63	.57	.71	.63	.57	.68	.61	.56	.66	.60	.55	.64	.59	.54	.52
5.0	.64	.56	.49	.63	.55	.49	.61	.54	.48	.59	.53	.48	.57	.52	.47	.45
6.0	.58	.49	.43	.57	.49	.43	.55	.48	.42	.54	.47	.42	.52	.46	.42	.39
7.0	.53	.44	.38	.52	.43	.38	.50	.43	.37	.49	.42	.37	.47	.41	.37	.35
8.0	.48	.39	.34	.47	.39	.34	.46	.39	.33	.45	.38	.33	.43	.37	.33	.31
9.0	.44	.36	.30	.43	.36	.30	.42	.35	.30	.41	.35	.30	.40	.34	.30	.28
10.0	.40	.33	.27	.40	.32	.27	.39	.32	.27	.38	.32	.27	.37	.31	.27	.25



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2022-04-06

V(B) Range:-90 - 90DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:230.00V I:0.6300A P:139.00W PF:0.9590 Freq:50.00Hz Lamp Flux:16555.1x1 lm									
NAME: DETA					TYPE:			WEIGHT:	
SPEC.:					DIM.:			SERIAL No.:	
MFR.:					SUR.:			Shielding 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						Wall Exitance Coefficients (WEC)										
0.0																	
1.0	.285	.162	.051	.278	.159	.050	.265	.152	.049	.253	.146	.047	.242	.140	.045		
2.0	.275	.151	.046	.269	.148	.046	.258	.143	.044	.247	.139	.043	.237	.134	.042		
3.0	.258	.138	.041	.253	.135	.041	.243	.132	.040	.233	.128	.039	.225	.124	.038		
4.0	.241	.125	.037	.236	.123	.037	.227	.120	.036	.219	.117	.035	.211	.114	.035		
5.0	.224	.114	.033	.220	.113	.033	.212	.110	.032	.204	.108	.032	.197	.105	.032		
6.0	.209	.105	.030	.205	.104	.030	.198	.101	.030	.191	.099	.029	.185	.097	.029		
7.0	.195	.096	.027	.192	.096	.027	.185	.094	.027	.179	.092	.027	.174	.090	.027		
8.0	.183	.089	.025	.180	.089	.025	.174	.087	.025	.169	.085	.025	.164	.084	.024		
9.0	.172	.083	.023	.169	.082	.023	.164	.081	.023	.159	.080	.023	.154	.078	.023		
10.0	.162	.078	.022	.159	.077	.021	.155	.076	.021	.150	.075	.021	.146	.073	.021		

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						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.179	.156	.136	.153	.134	.117	.105	.092	.081	.060	.053	.047	.019	.017	.015	
2.0	.170	.132	.100	.146	.114	.086	.100	.079	.060	.058	.046	.035	.018	.015	.012	
3.0	.162	.114	.076	.139	.099	.066	.095	.068	.046	.055	.040	.027	.018	.013	.009	
4.0	.155	.101	.060	.133	.087	.052	.091	.061	.036	.053	.036	.022	.017	.012	.007	
5.0	.148	.090	.048	.127	.078	.042	.087	.055	.030	.051	.032	.018	.016	.010	.006	
6.0	.141	.082	.040	.121	.071	.035	.083	.050	.025	.048	.029	.015	.016	.010	.005	
7.0	.134	.075	.034	.115	.065	.029	.080	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.128	.069	.029	.110	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.122	.064	.025	.105	.056	.022	.073	.039	.016	.042	.023	.009	.014	.008	.003	
10.0	.116	.060	.023	.100	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2022-04-06

V(B) Range:-90 - 90DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:230.00V I:0.6300A P:139.00W PF:0.9590 Freq:50.00Hz Lamp Flux:16555.1x1 lm										
NAME: DETA					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.:					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	30.3	31.8	30.6	32.0	32.2	24.0	25.4	24.2	25.6	25.8
3H	32.2	33.5	32.5	33.8	34.0	23.9	25.3	24.2	25.5	25.8
4H	32.7	34.0	33.0	34.3	34.5	23.9	25.2	24.3	25.5	25.7
6H	32.9	34.1	33.3	34.4	34.7	24.0	25.2	24.3	25.4	25.7
8H	32.9	34.1	33.2	34.3	34.6	24.0	25.1	24.3	25.4	25.7
12H	32.8	34.0	33.2	34.3	34.6	24.0	25.1	24.3	25.4	25.7
4H 2H	30.5	31.8	30.8	32.0	32.3	25.6	26.9	25.9	27.1	27.4
3H	32.8	33.9	33.1	34.2	34.5	25.5	26.7	25.9	27.0	27.3
4H	33.7	34.7	34.1	35.0	35.4	25.6	26.6	25.9	26.9	27.2
6H	34.2	35.1	34.6	35.5	35.8	25.6	26.5	26.0	26.8	27.2
8H	34.2	35.1	34.7	35.4	35.8	25.6	26.4	26.0	26.8	27.2
12H	34.2	35.0	34.6	35.4	35.8	25.6	26.4	26.0	26.7	27.2
8H 4H	33.6	34.5	34.0	34.8	35.2	26.5	27.4	26.9	27.7	28.1
6H	34.2	34.9	34.7	35.3	35.8	26.6	27.2	27.0	27.6	28.1
8H	34.3	35.0	34.8	35.4	35.8	26.6	27.2	27.0	27.6	28.1
12H	34.3	34.9	34.8	35.3	35.8	26.6	27.1	27.1	27.6	28.0
12H 4H	33.6	34.3	34.0	34.7	35.1	26.7	27.4	27.1	27.8	28.2
6H	34.2	34.8	34.7	35.2	35.7	26.7	27.3	27.2	27.8	28.2
8H	34.3	34.8	34.8	35.3	35.8	26.7	27.3	27.2	27.7	28.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.4					+ 0.7 / - 0.8				
1.5H	+ 0.4 / - 0.6					+ 0.7 / - 0.9				
2.0H	+ 1.6 / - 1.5					+ 2.0 / - 3.2				

CIE Pub.117, 16555 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 9.8$)

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2022-04-06

V(B) Range:-90 - 90DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.00V I:0.6300A P:139.00W PF:0.9590 Freq:50.00Hz Lamp Flux:16555.1x1 lm		
NAME: DETA	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

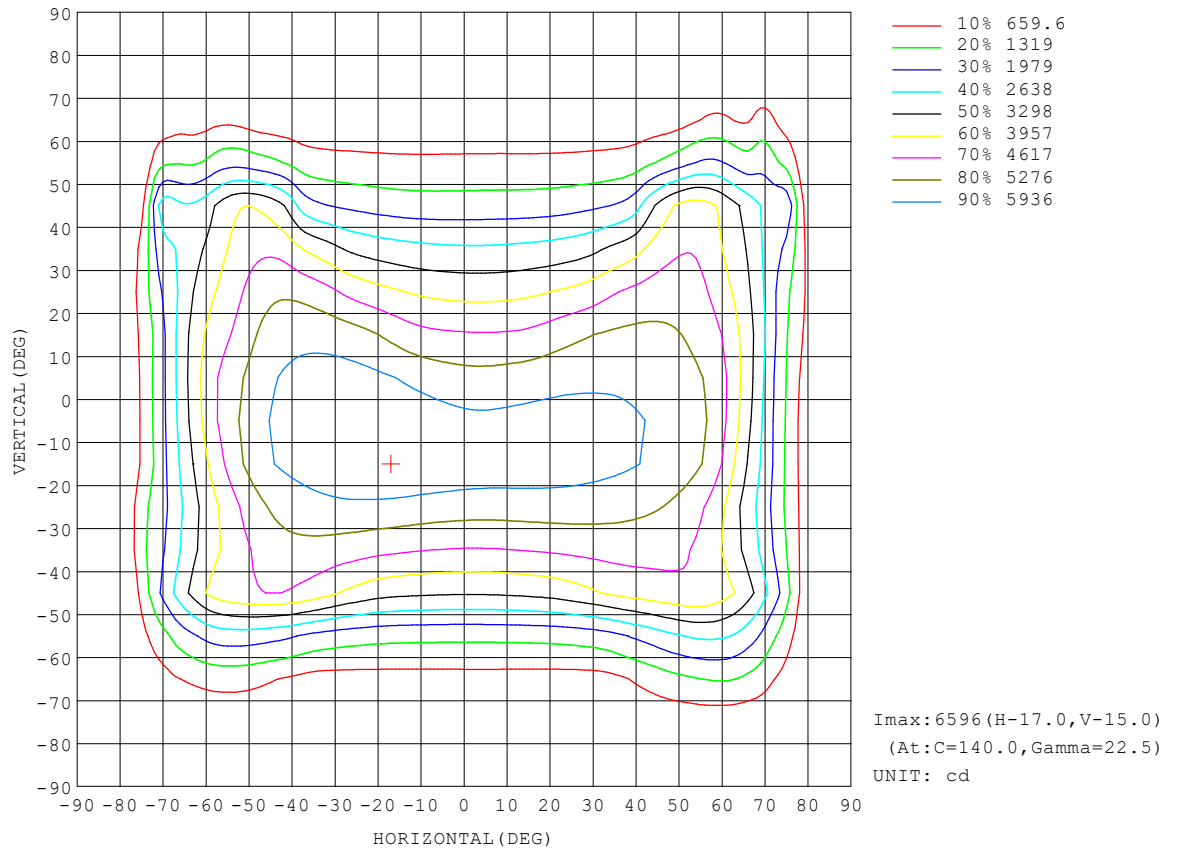
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	58	47	40	58	47	40	57	46	40	34
0.80	69	58	50	68	57	50	66	56	50	43
1.00	78	67	60	76	66	60	74	68	59	52
1.25	85	75	68	83	74	67	81	73	67	60
1.50	90	80	74	88	79	73	85	78	72	65
2.00	97	89	82	95	87	82	91	85	80	73
2.50	100	93	87	98	92	86	95	89	85	77
3.00	104	97	92	101	96	91	97	93	89	81
4.00	107	102	98	105	100	96	101	97	94	85
5.00	110	105	101	107	103	100	103	100	97	88
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

$H(\beta)$ Range:-90 - 90DEG
 $H(\beta)$ Interval: 1.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2022-04-06

$V(B)$ Range:-90 - 90DEG
 $V(B)$ Interval: 5.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
 Humidity:65.0%
 Test Distance:9.900m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:230.00V I:0.6300A P:139.00W PF:0.9590 Freq:50.00Hz Lamp Flux:16555.1x1 lm		
NAME: DETA	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

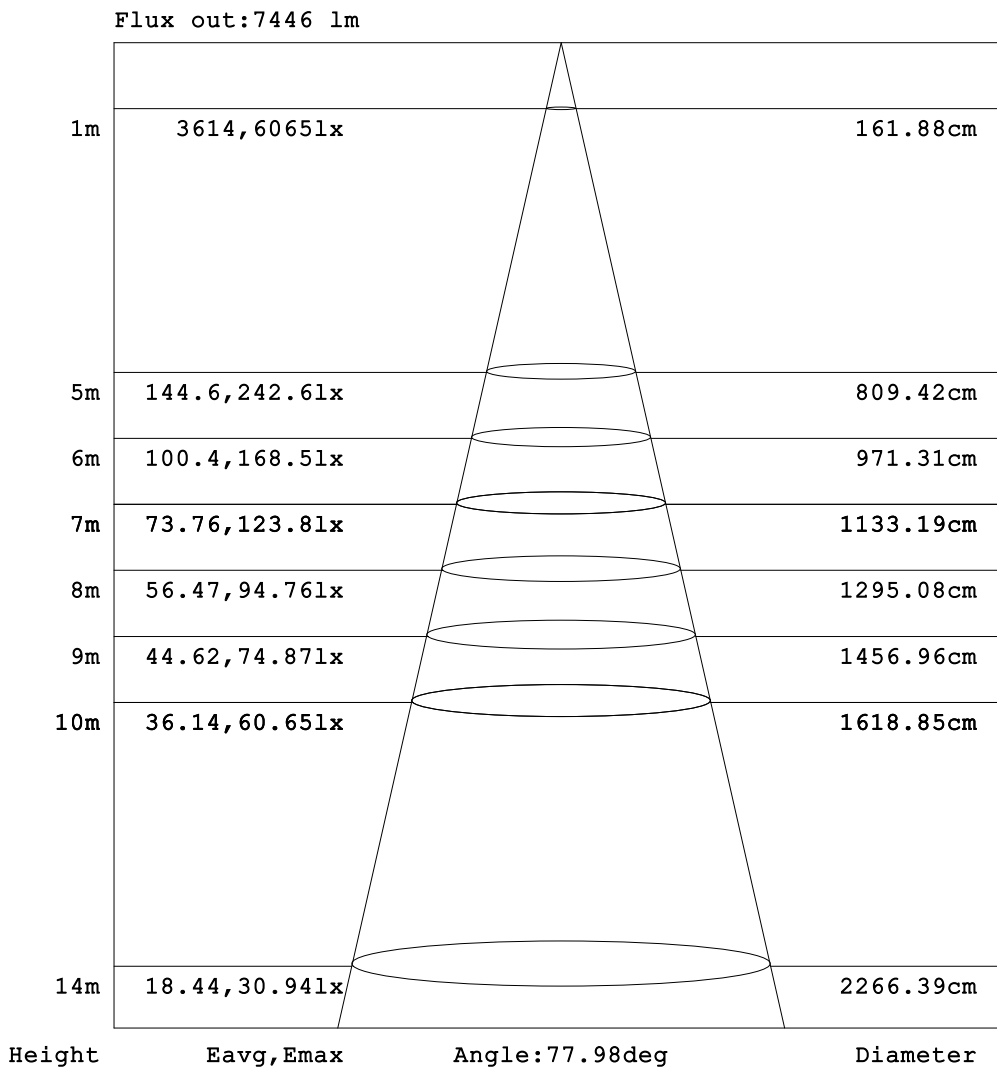


H(β) Range: -90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2022-04-06

V(B) Range: -90 - 90DEG
V(B) Interval: 5.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity: 65.0%
Test Distance: 9.900m [K=1.0000]
Remarks:

AAI Figure

Test:U:230.00V I:0.6300A P:139.00W PF:0.9590 Freq:50.00Hz Lamp Flux:16555.1x1 lm		
NAME: DETA	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



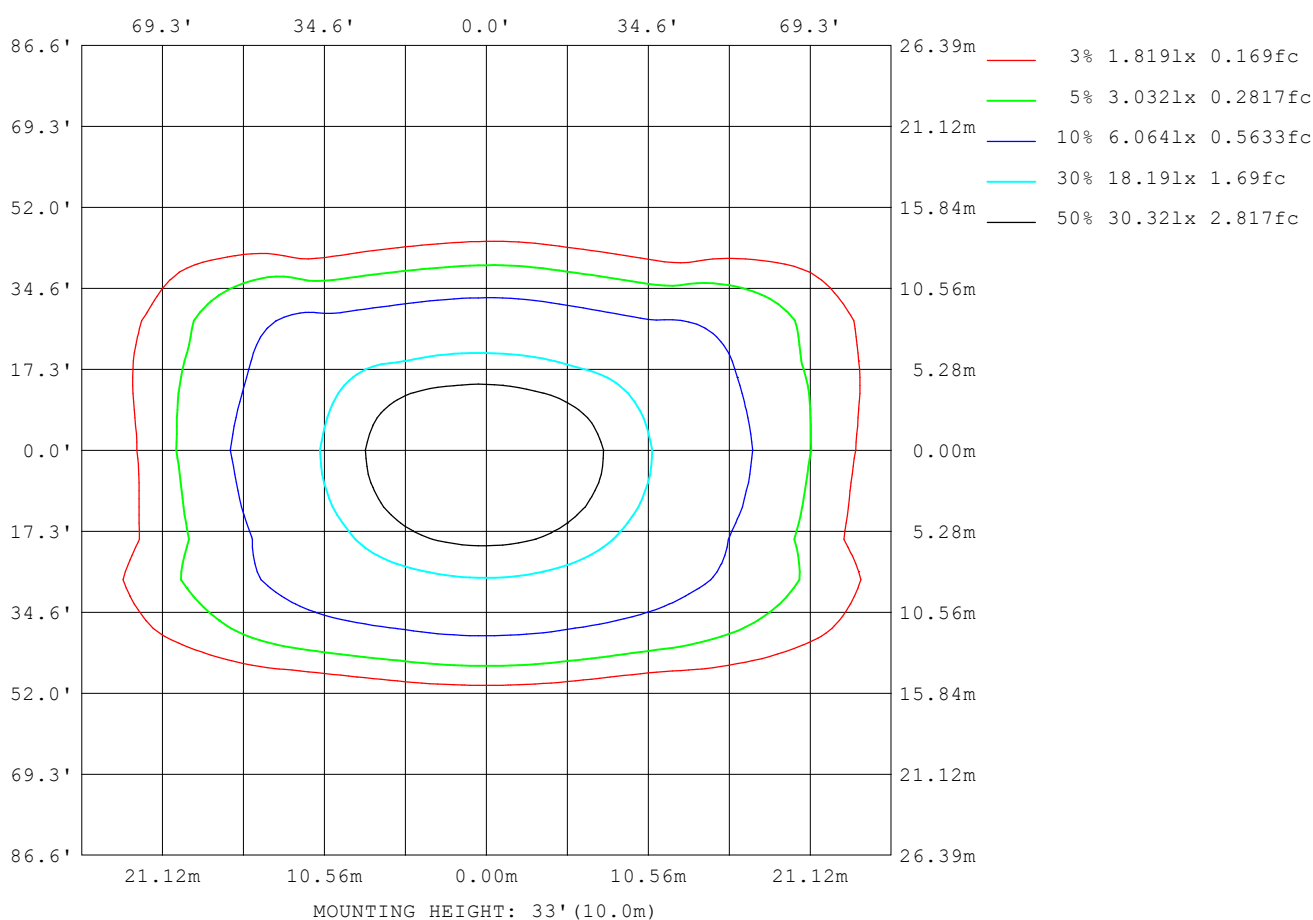
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2022-04-06

V(B) Range:-90 - 90DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

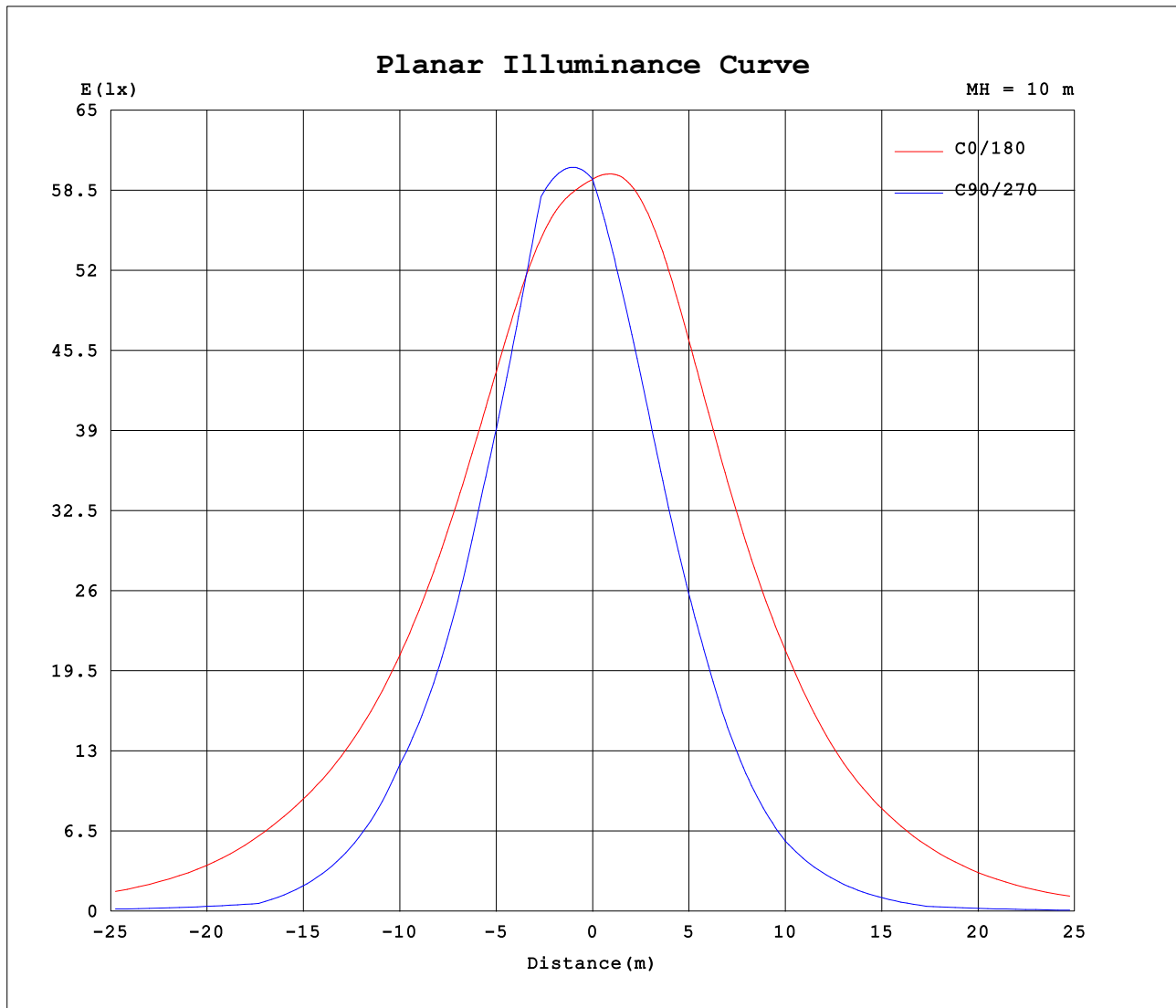
Test:U:230.00V I:0.6300A P:139.00W PF:0.9590 Freq:50.00Hz Lamp Flux:16555.1x1 lm		
NAME: DETA	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



H(β) Range:-90 - 90DEG
 H(β) Interval: 1.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2022-04-06

V(B) Range:-90 - 90DEG
 V(B) Interval: 5.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
 Humidity:65.0%
 Test Distance:9.900m [K=1.0000]
 Remarks:

Planar Illuminance Curve



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2022-04-06

V(B) Range:-90 - 90DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

```
V(B) Range:-90 - 90DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:
```

```
V(B) Range:-90 - 90DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:
```

V(B) Range:-90 - 90DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

V(B) Range:-90 - 90DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks: