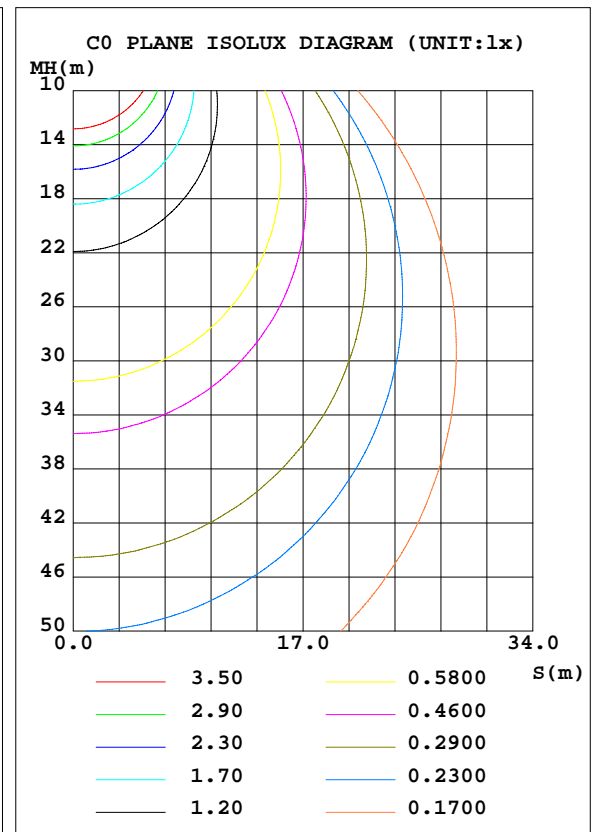
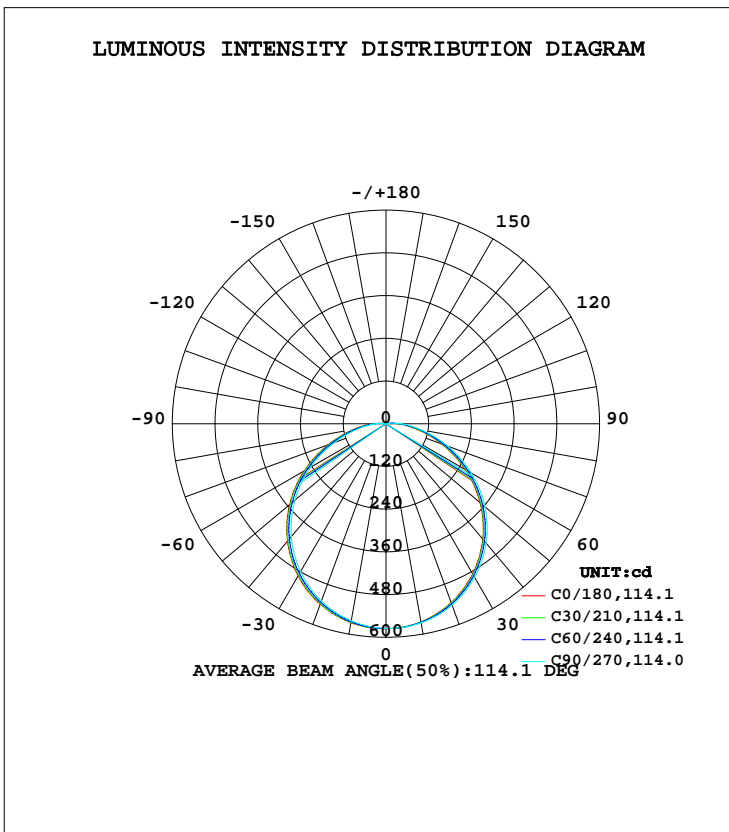


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.02V I:0.0773A P:16.995W PF:0.9555 Freq:49.99Hz Lamp Flux:1754.29x1 lm		
NAME: LED Ceiling light	TYPE:	WEIGHT:
SPEC.:QB18	DIM.: 280x280x70	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 103.22 lm/W			
MODEL	QB18	I _{max} (cd)	576.0	S/MH(C0/180)	1.271
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	1.24
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	1754.3	η UP, DN(C0-180)	1.0,50.0
NOMINAL FLUX(lm)	1754.29	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.9,48.1
LAMPS INSIDE	1	η up(%)	1.9	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	η down(%)	98.1	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:15 October 2021

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:8.791m [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	565.4	566.2	567.8	566.7	567.3	565.4	561.9	561.9	0- 10	54.42	54.42	3.1,3.1
20	534.7	537.5	542.4	539.6	539.9	536.2	530.0	530.7	10- 20	156.1	210.5	12,12
30	487.2	491.1	498.2	494.6	493.4	488.4	479.7	481.9	20- 30	237.3	447.8	25.5,25.5
40	423.0	428.0	437.7	433.0	430.2	424.7	413.6	417.2	30- 40	287.4	735.2	41.9,41.9
50	345.1	351.5	362.8	357.4	353.2	346.4	333.7	338.3	40- 50	299.8	1035	59,59
60	257.3	264.3	276.9	270.4	265.2	257.7	244.6	249.8	50- 60	273.1	1308	74.6,74.6
70	166.3	173.3	185.3	179.1	173.3	166.1	153.2	159.1	60- 70	212.7	1521	86.7,86.7
80	87.43	93.26	102.4	97.15	92.59	86.50	76.39	81.50	70- 80	135.0	1656	94.4,94.4
90	33.61	37.20	42.54	38.80	36.08	32.50	26.48	29.63	80- 90	65.18	1721	98.1,98.1
100	7.031	8.341	10.54	8.740	7.750	6.690	4.557	5.424	90-100	20.54	1742	99.3,99.3
110	1.371	1.330	1.249	1.251	1.299	1.308	1.393	1.373	100-110	3.000	1745	99.4,99.4
120	1.823	1.780	1.693	1.692	1.720	1.747	1.832	1.808	110-120	1.526	1746	99.5,99.5
130	2.257	2.224	2.141	2.129	2.150	2.179	2.262	2.244	120-130	1.772	1748	99.6,99.6
140	2.660	2.636	2.562	2.548	2.562	2.584	2.660	2.640	130-140	1.856	1750	99.7,99.7
150	3.027	3.014	2.960	2.937	2.951	2.973	3.022	3.014	140-150	1.753	1752	99.8,99.8
160	3.366	3.353	3.322	3.290	3.299	3.312	3.357	3.342	150-160	1.460	1753	99.9,99.9
170	3.547	3.561	3.516	3.520	3.516	3.539	3.534	3.545	160-170	0.9723	1754	100,100
180	3.634	3.645	3.620	3.629	3.634	3.654	3.620	3.631	170-180	0.3419	1754	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 886.11 lm

%lum = 50.5%
%lamp = 50.5%

Conical surface Flux(120deg): 1308.2 lm

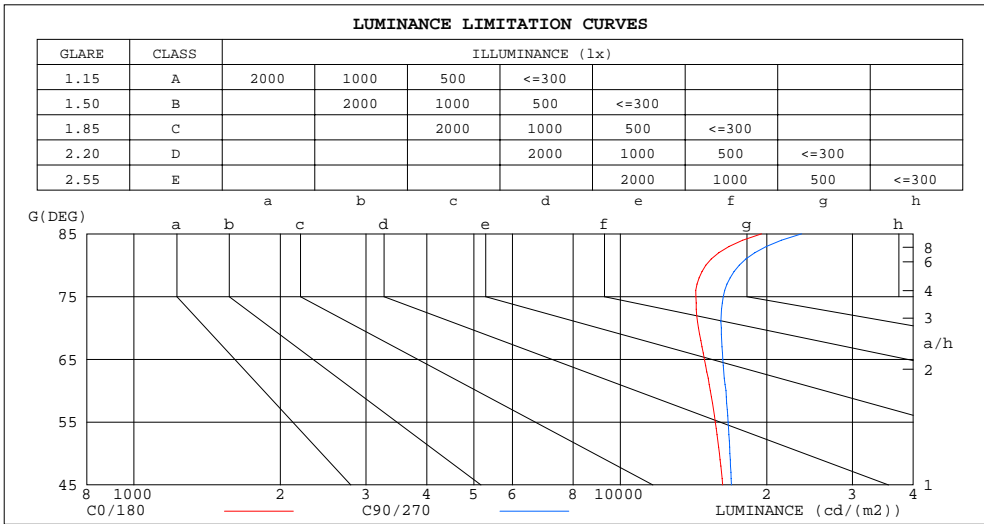
%lum = 74.6%
%lamp = 74.6%

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:15 October 2021

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.791m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:230.02V I:0.0773A P:16.995W PF:0.9555 Freq:49.99Hz Lamp Flux:1754.29x1 lm		
NAME: LED Ceiling light	TYPE:	WEIGHT:
SPEC.:QB18	DIM.: 280x280x70	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	19510	23580
80	14985	17554
75	14304	16277
70	14471	16125
65	14887	16243
60	15315	16484
55	15670	16659
50	15980	16797
45	16231	16925

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:15 October 2021

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:8.791m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:230.02V I:0.0773A P:16.995W PF:0.9555 Freq:49.99Hz Lamp Flux:1754.29x1 lm		
NAME: LED Ceiling light	TYPE:	WEIGHT:
SPEC.:QB18	DIM.: 280x280x70	SERIAL No.:
MFR.:	SUR.:	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	.333	.189	.060	.325	.185	.059	.310	.178	.057	.297	.171	.055	.285	.165	.053	
2.0	.304	.167	.051	.298	.164	.050	.285	.158	.049	.273	.153	.048	.262	.148	.047	
3.0	.278	.148	.044	.272	.146	.044	.261	.141	.043	.250	.137	.042	.240	.133	.041	
4.0	.255	.132	.039	.249	.131	.039	.239	.127	.038	.230	.123	.037	.221	.120	.037	
5.0	.234	.119	.035	.230	.118	.034	.221	.115	.034	.212	.112	.033	.204	.109	.033	
6.0	.217	.109	.031	.212	.107	.031	.204	.105	.030	.197	.102	.030	.190	.100	.030	
7.0	.201	.099	.028	.197	.098	.028	.190	.096	.028	.183	.094	.027	.177	.092	.027	
8.0	.188	.092	.026	.184	.091	.026	.178	.089	.025	.171	.087	.025	.166	.085	.025	
9.0	.175	.085	.024	.172	.084	.024	.167	.082	.023	.161	.081	.023	.156	.079	.023	
10.0	.165	.079	.022	.162	.078	.022	.157	.077	.022	.152	.075	.021	.147	.074	.021	

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	.205	.205	.205	.175	.175	.175	.120	.120	.120	.069	.069	.069	.022	.022	.022	
1.0	.196	.170	.147	.168	.146	.127	.115	.101	.088	.066	.058	.051	.021	.019	.016	
2.0	.189	.146	.111	.162	.126	.096	.111	.087	.067	.064	.051	.039	.020	.016	.013	
3.0	.181	.129	.088	.155	.111	.076	.106	.077	.053	.061	.045	.031	.020	.015	.010	
4.0	.173	.116	.072	.148	.100	.063	.102	.070	.044	.059	.041	.026	.019	.013	.009	
5.0	.165	.106	.061	.142	.091	.053	.098	.064	.038	.057	.037	.022	.018	.012	.007	
6.0	.158	.097	.054	.136	.084	.047	.094	.059	.033	.054	.035	.020	.018	.011	.006	
7.0	.151	.090	.048	.130	.078	.042	.090	.055	.030	.052	.032	.018	.017	.011	.006	
8.0	.145	.085	.043	.125	.073	.038	.086	.052	.027	.050	.030	.016	.016	.010	.005	
9.0	.138	.080	.040	.119	.069	.035	.083	.049	.025	.048	.029	.015	.016	.009	.005	
10.0	.133	.075	.037	.114	.065	.033	.079	.046	.023	.046	.027	.014	.015	.009	.005	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:15 October 2021

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:8.791m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:230.02V I:0.0773A P:16.995W PF:0.9555 Freq:49.99Hz Lamp Flux:1754.29x1 lm										
NAME: LED Ceiling light					TYPE:			WEIGHT:		
SPEC.:QB18					DIM.: 280x280x70			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	20.3	21.9	20.6	22.1	22.3	20.6	22.1	20.9	22.4	22.6
3H	21.9	23.3	22.3	23.6	23.9	22.3	23.7	22.6	24.0	24.3
4H	22.6	24.0	23.0	24.3	24.6	23.1	24.4	23.4	24.7	25.0
6H	23.3	24.5	23.6	24.8	25.1	23.8	25.1	24.1	25.4	25.7
8H	23.5	24.8	23.9	25.1	25.4	24.1	25.3	24.5	25.7	26.0
12H	23.8	25.0	24.2	25.3	25.7	24.5	25.6	24.8	26.0	26.3
4H 2H	21.0	22.3	21.3	22.6	22.9	21.2	22.5	21.5	22.8	23.1
3H	22.8	24.0	23.2	24.3	24.6	23.1	24.3	23.5	24.6	24.9
4H	23.6	24.7	24.0	25.1	25.4	24.0	25.1	24.4	25.4	25.8
6H	24.4	25.4	24.8	25.8	26.2	24.9	25.8	25.3	26.2	26.6
8H	24.8	25.7	25.2	26.1	26.5	25.3	26.2	25.8	26.6	27.0
12H	25.1	26.0	25.6	26.4	26.8	25.8	26.6	26.2	27.0	27.5
8H 4H	24.0	24.9	24.4	25.3	25.7	24.3	25.2	24.8	25.6	26.1
6H	25.0	25.7	25.5	26.2	26.6	25.4	26.2	25.9	26.6	27.1
8H	25.5	26.2	26.0	26.6	27.1	26.0	26.6	26.5	27.1	27.6
12H	26.0	26.6	26.5	27.1	27.6	26.6	27.2	27.1	27.6	28.2
12H 4H	24.0	24.9	24.5	25.3	25.7	24.4	25.2	24.8	25.6	26.1
6H	25.1	25.8	25.6	26.2	26.7	25.5	26.2	26.0	26.6	27.1
8H	25.7	26.3	26.2	26.8	27.3	26.1	26.7	26.6	27.2	27.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.3					+ 0.1 / - 0.3				

CIE Pub.117, 1754 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 2.0)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:15 October 2021

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:8.791m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.02V I:0.0773A P:16.995W PF:0.9555 Freq:49.99Hz Lamp Flux:1754.29x1 lm		
NAME: LED Ceiling light	TYPE:	WEIGHT:
SPEC.:QB18	DIM.: 280x280x70	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

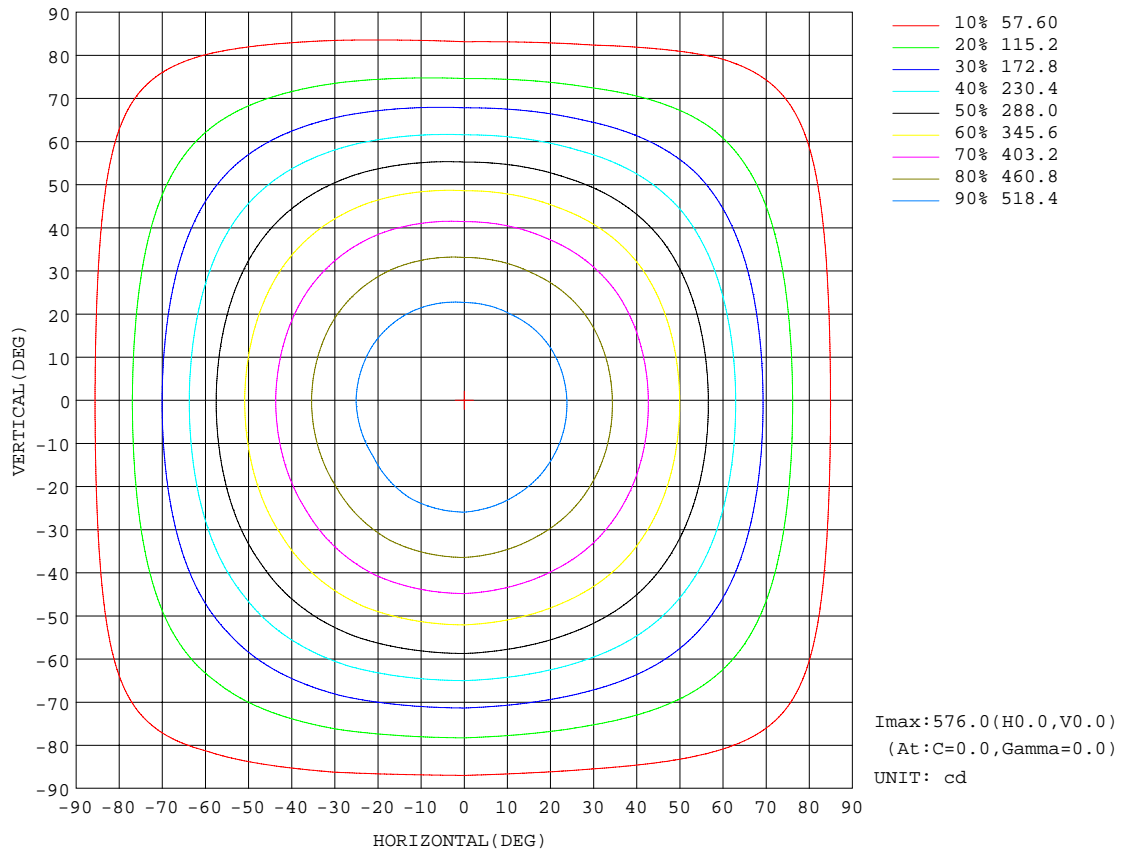
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	56	44	37	55	44	37	54	43	37	30
0.80	66	54	46	65	53	46	63	53	46	39
1.00	74	63	55	73	62	55	70	63	54	47
1.25	81	70	63	80	69	62	77	68	61	54
1.50	86	76	68	84	75	68	81	73	67	59
2.00	93	84	77	91	83	76	87	80	75	66
2.50	97	89	82	95	87	81	91	84	79	70
3.00	100	93	87	98	91	86	94	88	84	74
4.00	105	98	93	102	96	92	97	93	89	79
5.00	107	102	97	104	100	96	100	96	92	82
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:15 October 2021

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:8.791m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:230.02V I:0.0773A P:16.995W PF:0.9555 Freq:49.99Hz Lamp Flux:1754.29x1 lm		
NAME: LED Ceiling light	TYPE:	WEIGHT:
SPEC.:QB18	DIM.: 280x280x70	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

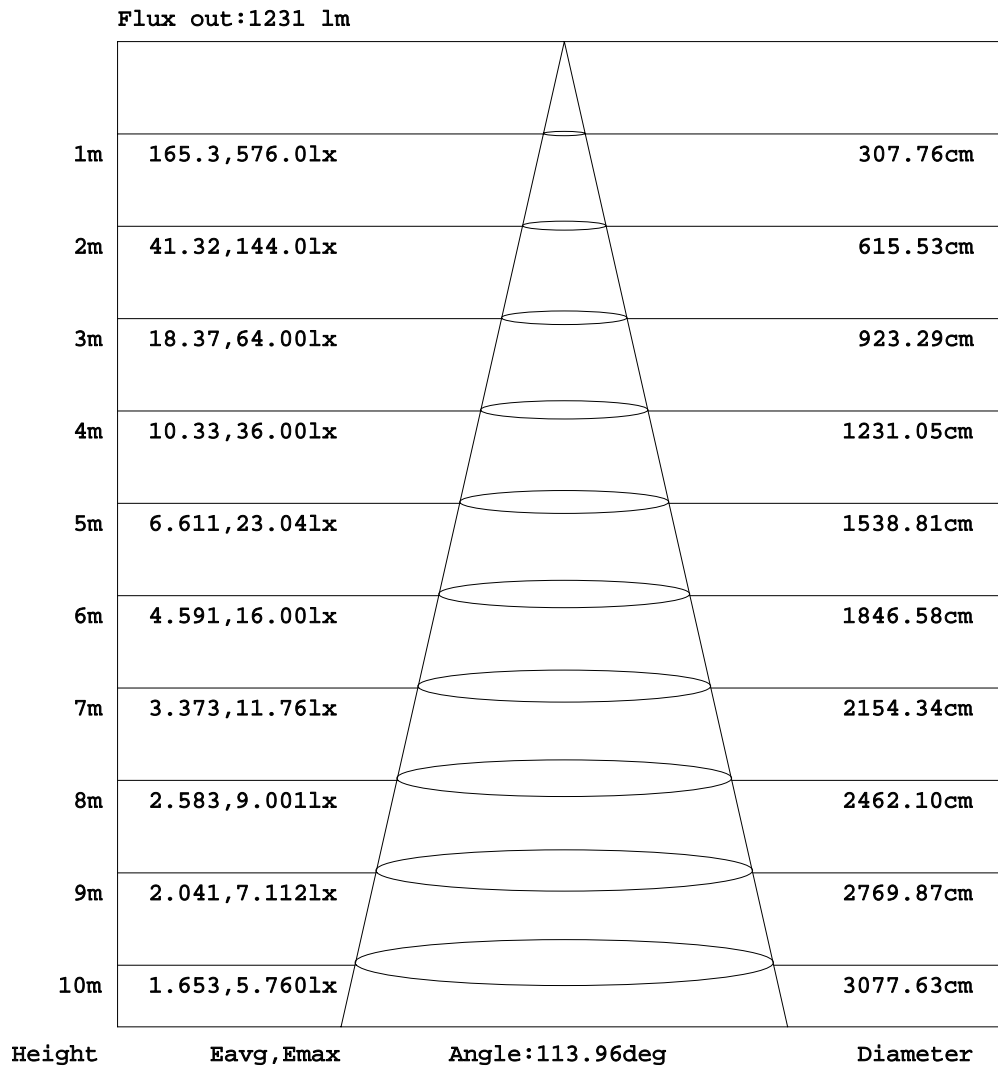


C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 15 October 2021

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.366
 Humidity: 65.0%
 Test Distance: 8.791m [K=1.0000]
 Remarks:

AAI Figure

Test:U:230.02V I:0.0773A P:16.995W PF:0.9555 Freq:49.99Hz Lamp Flux:1754.29x1 lm		
NAME: LED Ceiling light	TYPE:	WEIGHT:
SPEC.:QB18	DIM.: 280x280x70	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

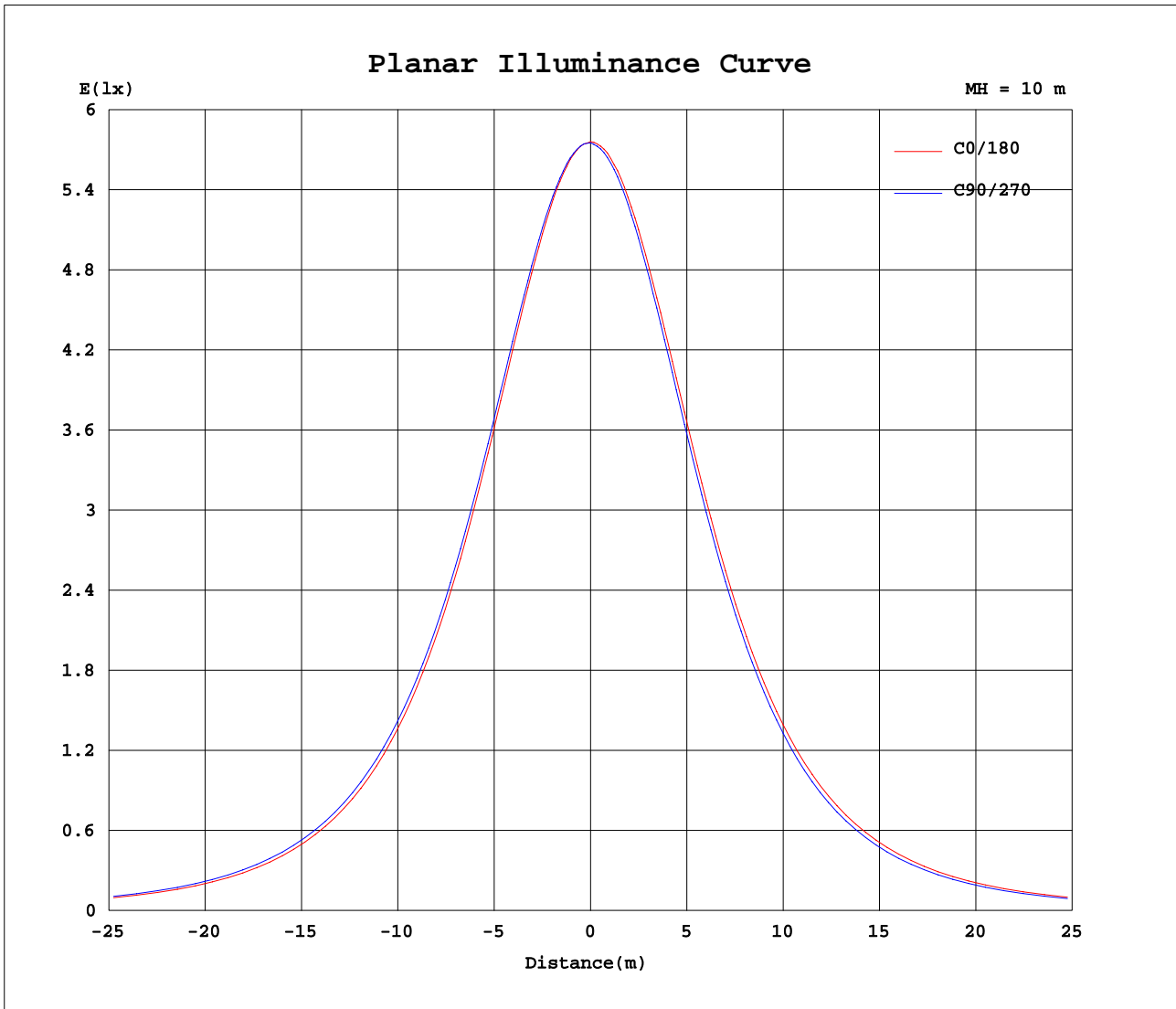


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:15 October 2021

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:8.791m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 15 October 2021

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.366
 Humidity: 65.0%
 Test Distance: 8.791m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.02V I:0.0773A P:16.995W PF:0.9555 Freq:49.99Hz Lamp Flux:1754.29x1 lm		
NAME: LED Ceiling light	TYPE:	WEIGHT:
SPEC.:QB18	DIM.: 280x280x70	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	576	576	575	575	575	573	576	576	575	575	575	573							
5	573	573	573	574	573	572	574	574	573	571	570	570							
10	565	566	566	568	567	566	567	567	564	562	561	562							
15	552	554	555	558	557	554	556	554	552	548	548	550							
20	535	536	539	542	542	538	540	538	535	530	529	532							
25	513	515	518	523	522	517	519	516	512	507	506	511							
30	487	489	493	498	498	492	493	491	486	480	479	485							
35	457	460	463	470	469	463	463	461	456	448	448	454							
40	423	426	430	438	437	429	430	427	422	414	414	420							
45	386	389	394	402	401	393	394	390	384	376	376	383							
50	345	349	354	363	362	353	353	349	344	334	334	342							
55	302	306	312	321	319	310	310	306	300	290	291	299							
60	257	261	267	277	275	266	265	261	254	245	245	254							
65	211	215	222	231	230	219	219	215	208	198	199	209							
70	166	170	177	185	184	174	173	169	163	153	154	164							
75	124	128	134	142	141	131	130	127	121	112	113	122							
80	87.4	91.1	95.5	102	101	93.3	92.6	89.0	84.0	76.4	77.8	85.2							
85	57.1	60.1	63.6	69.1	67.7	61.3	60.8	57.9	53.8	47.7	48.9	55.1							
90	33.6	35.9	38.5	42.5	41.2	36.4	36.1	34.0	31.0	26.5	27.3	32.0							
95	17.1	18.6	20.4	23.1	22.0	18.7	18.5	17.3	15.3	12.4	12.7	15.8							
100	7.03	7.70	8.98	10.5	9.76	7.73	7.75	7.22	6.16	4.56	4.63	6.22							
105	2.21	1.12	1.96	3.74	1.03	2.16	2.60	2.07	1.79	1.54	1.34	1.13							
110	1.37	1.34	1.32	1.25	1.23	1.27	1.30	1.29	1.32	1.39	1.39	1.35							
115	1.60	1.57	1.54	1.48	1.46	1.49	1.50	1.52	1.55	1.61	1.62	1.57							
120	1.82	1.80	1.76	1.69	1.68	1.71	1.72	1.73	1.76	1.83	1.83	1.79							
125	2.04	2.03	1.99	1.92	1.90	1.92	1.94	1.94	1.99	2.04	2.05	2.01							
130	2.26	2.24	2.21	2.14	2.11	2.15	2.15	2.16	2.20	2.26	2.26	2.23							
135	2.47	2.45	2.42	2.36	2.33	2.35	2.36	2.37	2.40	2.46	2.46	2.42							
140	2.66	2.65	2.62	2.56	2.54	2.56	2.56	2.57	2.60	2.66	2.66	2.62							
145	2.85	2.84	2.82	2.76	2.73	2.75	2.76	2.77	2.80	2.85	2.85	2.82							
150	3.03	3.02	3.00	2.96	2.93	2.95	2.95	2.96	2.98	3.02	3.02	3.00							
155	3.20	3.21	3.19	3.15	3.11	3.13	3.14	3.14	3.16	3.20	3.21	3.18							
160	3.37	3.35	3.36	3.32	3.27	3.31	3.30	3.31	3.32	3.36	3.37	3.32							
165	3.47	3.47	3.48	3.42	3.40	3.44	3.42	3.45	3.43	3.46	3.48	3.43							
170	3.55	3.55	3.57	3.52	3.50	3.54	3.52	3.55	3.53	3.53	3.57	3.52							
175	3.61	3.62	3.62	3.58	3.58	3.60	3.60	3.62	3.61	3.60	3.62	3.59							
180	3.63	3.65	3.64	3.62	3.63	3.62	3.63	3.66	3.65	3.62	3.63	3.63							

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:15 October 2021

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:8.791m [K=1.0000]
 Remarks: