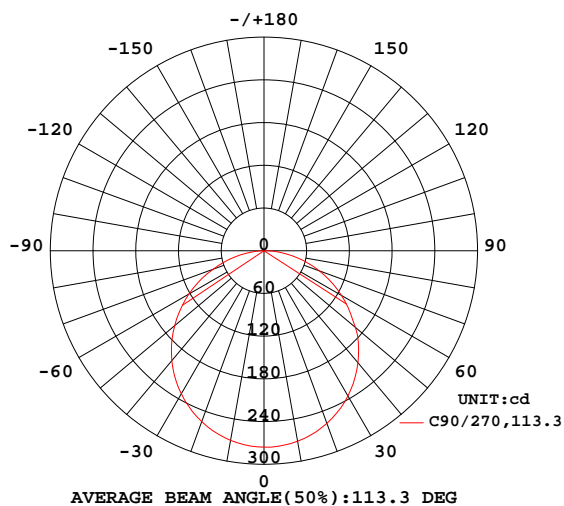


LUMINAIRE PHOTOMETRIC TEST REPORT

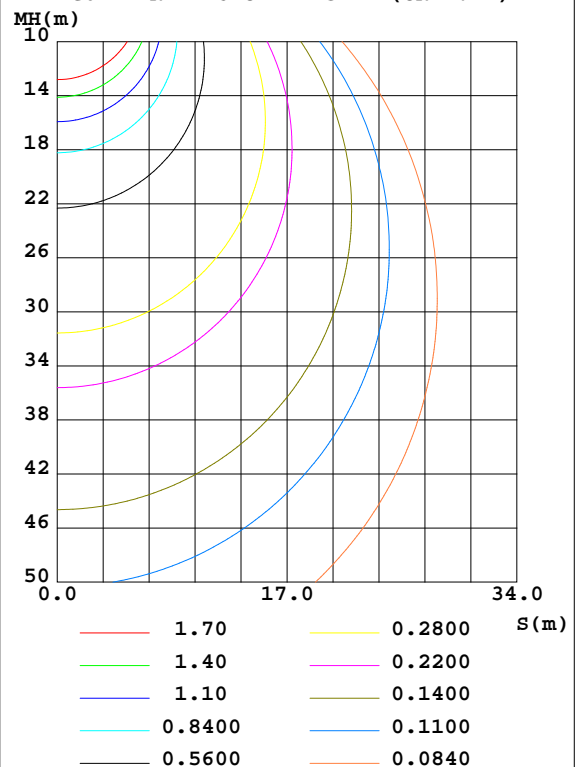
NAME: C-SFR-F2219S12-VB-24CC-35K-WM-84-80-12W-83.3	TYPE:	WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 70.55 lm/W
MODEL	2835	Imax(cd)	279.0	S/MH(C0/180)	1.27	
NOMINAL POWER(W)	12	LOR(%)	104.6	S/MH(C90/270)	1.25	
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	820.47	η UP,DN(C0-180)	0.5,52.3	
NOMINAL FLUX(lm)	784.24	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.5,51.3	
LAMPS INSIDE	1	η up(%)	1.1	CIBSE SHR NOM	1.25	
TEST VOLTAGE(V)	24	η down(%)	103.5	CIBSE SHR MAX	1.35	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:29 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [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	273.9	273.0	271.7	272.1	274.8	272.7	270.4	271.1	0- 10	26.23	26.23	3.2,3.34
20	259.3	259.2	258.1	258.5	260.9	258.4	255.6	256.5	10- 20	75.20	101.4	12.4,12.9
30	236.1	236.7	235.8	235.8	237.7	235.2	232.2	233.3	20- 30	114.2	215.6	26.3,27.5
40	205.4	206.5	205.4	205.4	206.7	204.2	201.5	202.8	30- 40	138.2	353.8	43.1,45.1
50	168.4	169.3	167.6	168.1	168.5	165.9	164.0	164.8	40- 50	144.2	498.0	60.7,63.5
60	126.9	127.7	125.8	126.6	126.0	124.0	121.8	123.3	50- 60	130.9	628.9	76.7,80.2
70	80.57	82.95	82.88	82.20	81.87	79.05	76.23	78.39	60- 70	102.3	731.3	89.1,93.2
80	35.70	38.83	39.48	38.46	36.99	35.05	33.09	34.55	70- 80	61.62	792.9	96.6,101
90	1.089	4.375	5.998	4.715	2.402	3.474	3.492	2.892	80- 90	19.16	812.0	99,104
100	0.8434	1.449	1.770	2.146	2.374	1.983	1.286	1.199	90-100	2.302	814.3	99.3,104
110	1.013	0.7203	0.7259	1.438	2.307	1.448	0.6692	0.7109	100-110	1.471	815.8	99.4,104
120	1.194	0.7876	0.3981	1.358	2.171	1.356	0.4118	0.7238	110-120	1.037	816.9	99.6,104
130	1.283	0.9073	0.5960	1.358	2.009	1.375	0.6094	0.8477	120-130	0.9785	817.8	99.7,104
140	1.314	1.016	0.7711	1.323	1.812	1.332	0.7013	0.9589	130-140	0.8862	818.7	99.8,104
150	1.289	1.092	0.9438	1.286	1.622	1.301	0.9044	1.020	140-150	0.7337	819.5	99.9,104
160	1.286	1.141	1.111	1.258	1.425	1.272	1.108	1.079	150-160	0.5515	820.0	99.9,105
170	1.233	1.181	1.272	1.257	1.297	1.276	1.266	1.154	160-170	0.3450	820.4	100,105
180	1.317	1.332	1.381	1.305	1.353	1.317	1.378	1.303	170-180	0.1203	820.5	100,105
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 440.85 lm

%lum = 53.7%

%lamp = 56.2%

Conical surface Flux(120deg): 628.93 lm

%lum = 76.7%

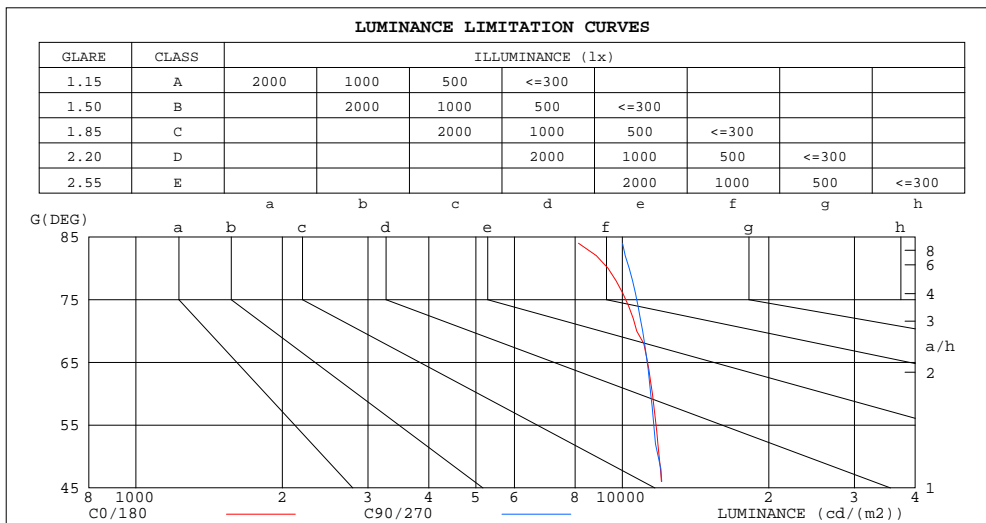
%lamp = 80.2%

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Dillon
 Test Date:29 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.446
 Humidity:65.0%
 Test Distance:6.950m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

NAME: C-SFR-F2219S12-VB-24CC-35K-WM-84-80-12W-83	TYPE:	WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	9749	12001
80	9346	10335
75	10968	11472
70	10708	11014
65	11758	11716
60	11535	11440
55	12061	11926
50	11909	11849
45	12290	12305

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Dillon
Test Date: 29 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.446
Humidity: 65.0%
Test Distance: 6.950m [K=1.0000]
Remarks:

WEC AND CCEC

NAME: C-SFR-F2219S12-VB-24CC-35K-WM-84-80-12W-83.3	TYPE:	WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	Shielding Angle:

pcc	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	.311	.170	.052	.304	.167	.052	.291	.162	.050	.279	.157	.049	.268	.152	.048		
3.0	.286	.152	.046	.280	.150	.045	.269	.146	.044	.258	.142	.043	.249	.138	.043		
4.0	.264	.137	.040	.258	.135	.040	.248	.132	.039	.239	.128	.039	.230	.125	.038		
5.0	.243	.124	.036	.238	.122	.036	.229	.119	.035	.221	.117	.035	.213	.114	.034		
6.0	.225	.113	.032	.221	.112	.032	.213	.109	.032	.205	.107	.031	.198	.104	.031		
7.0	.209	.103	.029	.206	.102	.029	.198	.100	.029	.192	.098	.029	.185	.096	.028		
8.0	.195	.095	.027	.192	.094	.027	.185	.093	.026	.179	.091	.026	.174	.089	.026		
9.0	.183	.088	.025	.180	.088	.025	.174	.086	.024	.169	.084	.024	.163	.083	.024		
10.0	.172	.082	.023	.169	.082	.023	.164	.080	.023	.159	.079	.022	.154	.078	.022		

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	.207	.207	.207	.177	.177	.177	.121	.121	.121	.070	.070	.070	.022	.022	.022	
1.0	.197	.172	.148	.169	.147	.128	.116	.101	.088	.067	.059	.051	.021	.019	.017	
2.0	.189	.146	.110	.162	.126	.095	.111	.087	.066	.064	.051	.039	.021	.016	.013	
3.0	.181	.128	.086	.155	.110	.074	.107	.077	.052	.062	.045	.031	.020	.015	.010	
4.0	.173	.114	.069	.149	.099	.060	.102	.069	.042	.059	.040	.025	.019	.013	.008	
5.0	.165	.103	.057	.142	.089	.050	.098	.062	.035	.057	.037	.021	.018	.012	.007	
6.0	.158	.095	.049	.136	.082	.043	.094	.057	.030	.054	.034	.018	.018	.011	.006	
7.0	.151	.087	.043	.130	.076	.037	.090	.053	.027	.052	.031	.016	.017	.010	.005	
8.0	.144	.081	.038	.124	.071	.033	.086	.050	.024	.050	.029	.014	.016	.010	.005	
9.0	.137	.076	.035	.118	.066	.030	.082	.046	.022	.048	.027	.013	.015	.009	.004	
10.0	.131	.072	.032	.113	.062	.028	.079	.044	.020	.046	.026	.012	.015	.009	.004	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:29 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

NAME: C-SFR-F2219S12-VB-24CC-35K-WM-84-80-12W-83.3	TYPE:	WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	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	22.3	23.8	22.6	24.0	24.2	22.3	23.8	22.6	24.0	24.3
3H	23.9	25.3	24.2	25.5	25.8	23.9	25.3	24.2	25.6	25.9
4H	24.5	25.9	24.9	26.1	26.4	24.6	26.0	25.0	26.2	26.5
6H	25.0	26.3	25.4	26.6	26.9	25.2	26.4	25.5	26.7	27.0
8H	25.2	26.4	25.5	26.7	27.0	25.4	26.6	25.7	26.9	27.2
12H	25.3	26.4	25.6	26.7	27.1	25.5	26.7	25.9	27.0	27.3
4H 2H	22.9	24.3	23.3	24.5	24.8	22.9	24.3	23.3	24.6	24.8
3H	24.7	25.9	25.1	26.2	26.5	24.8	25.9	25.1	26.3	26.6
4H	25.5	26.6	25.9	26.9	27.3	25.6	26.7	26.0	27.0	27.4
6H	26.1	27.1	26.6	27.5	27.9	26.3	27.2	26.7	27.6	28.0
8H	26.3	27.2	26.8	27.6	28.0	26.5	27.4	27.0	27.8	28.2
12H	26.5	27.3	26.9	27.7	28.1	26.7	27.6	27.2	28.0	28.4
8H 4H	25.8	26.7	26.3	27.1	27.5	25.9	26.8	26.3	27.2	27.6
6H	26.6	27.4	27.1	27.8	28.2	26.8	27.5	27.2	27.9	28.4
8H	26.9	27.6	27.4	28.0	28.5	27.1	27.8	27.6	28.2	28.7
12H	27.1	27.7	27.6	28.2	28.7	27.4	28.0	27.9	28.4	28.9
12H 4H	25.9	26.7	26.3	27.1	27.5	25.9	26.7	26.4	27.2	27.6
6H	26.7	27.4	27.2	27.8	28.3	26.8	27.5	27.3	27.9	28.4
8H	27.1	27.6	27.6	28.1	28.6	27.3	27.8	27.7	28.3	28.8
Variations with the observer position at spacings(CIE Pub.117):										
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, 784.2 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.8)
Area: 0.022 m2

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:29 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

NAME: C-SFR-F2219S12-VB-24CC-35K-WM-84-80-12W-83.3	TYPE:	WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	Shielding Angle:

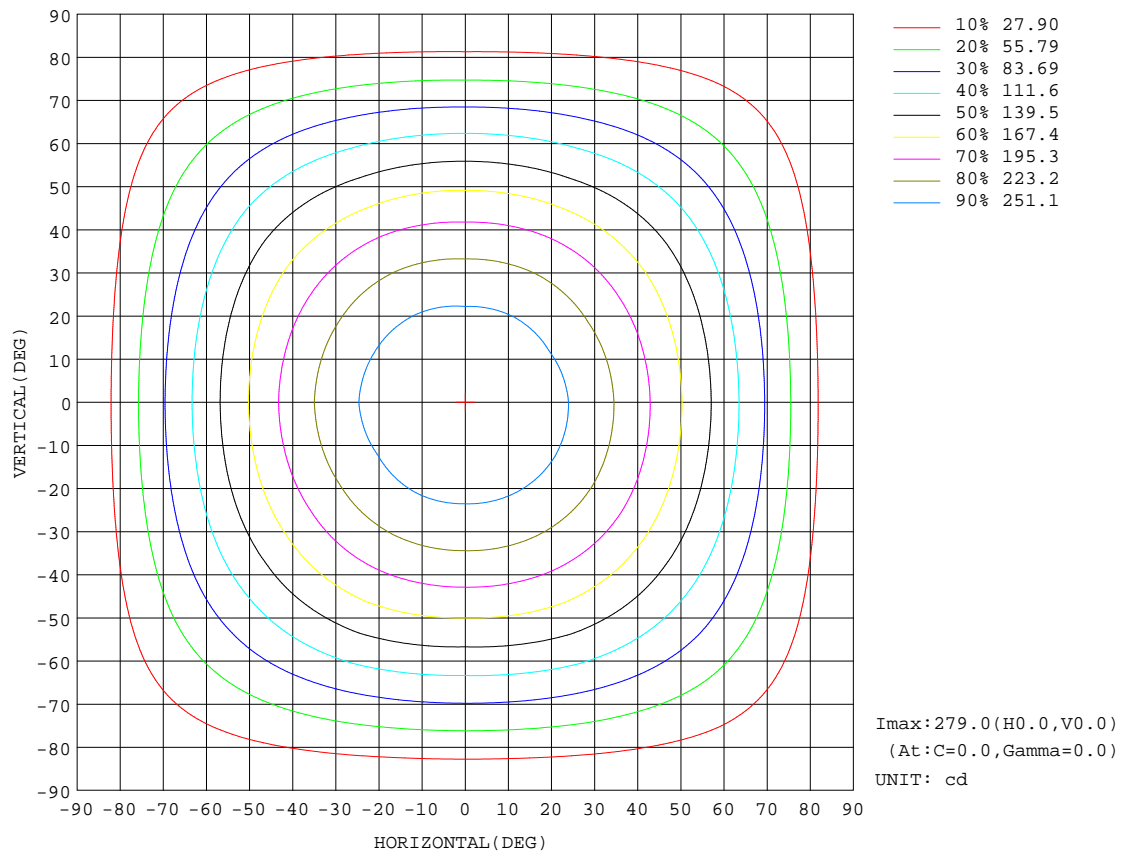
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	59	47	40	58	47	40	57	46	39	33
0.80	70	57	50	69	57	49	67	56	49	42
1.00	78	67	59	77	66	59	75	67	58	50
1.25	86	75	67	84	74	67	81	72	66	58
1.50	91	81	73	89	80	73	86	78	71	63
2.00	98	89	82	96	88	81	93	85	80	71
2.50	103	94	88	100	93	87	96	90	85	76
3.00	106	99	93	104	97	92	99	94	89	80
4.00	110	104	99	108	102	98	103	99	95	85
5.00	113	108	103	110	106	102	105	102	98	88
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNM = 1.25										

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:29 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

NAME: C-SFR-F2219S12-VB-24CC-35K-WM-84-80-12W-83.3TYPE:	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:
DIM.: 22*19mm	
SUR.: 22*1000mm	



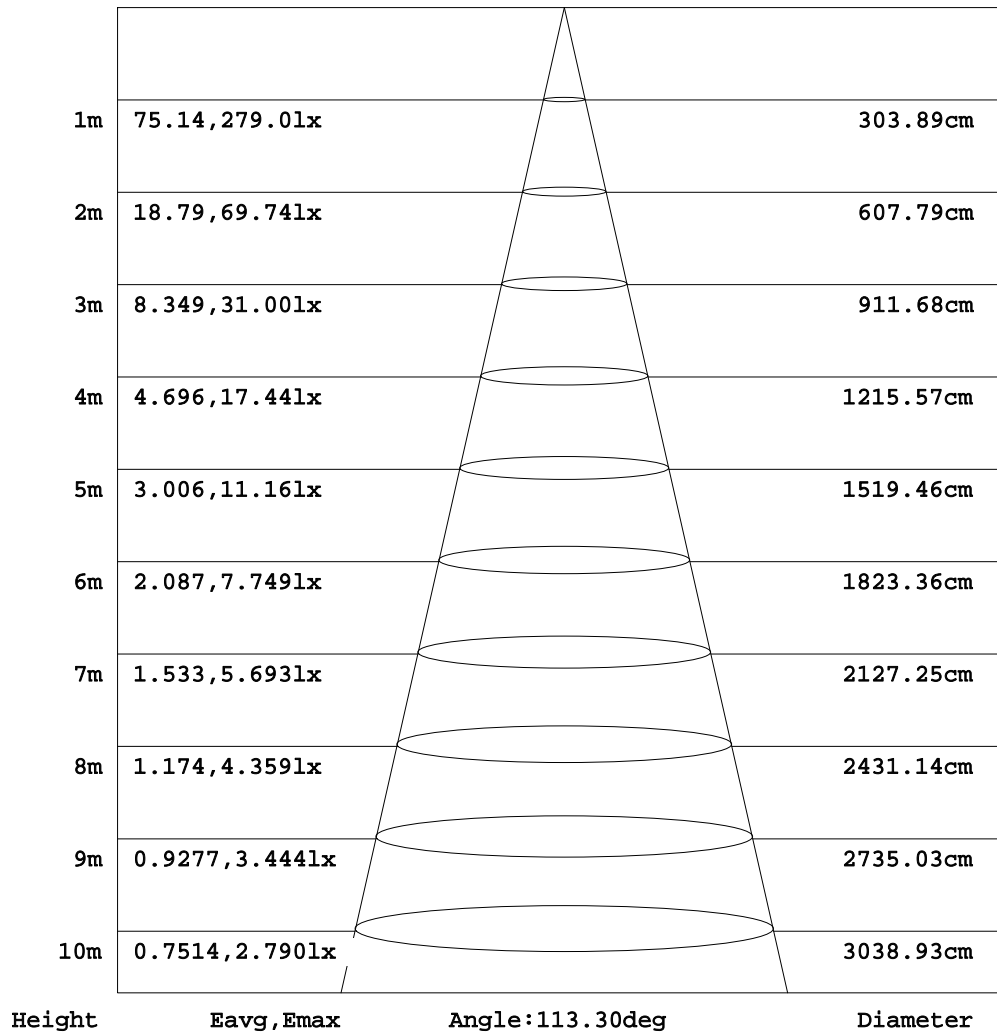
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Dillon
 Test Date: 29 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.446
 Humidity: 65.0%
 Test Distance: 6.950m [K=1.0000]
 Remarks:

AAI Figure

NAME: C-SFR-F2219S12-VB-24CC-35K-WM-84-80-12W-83.3TYPE:	WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm
MFR.: CLEAR	SUR.: 22*1000mm
	Shielding Angle:

Flux out:604.6 lm

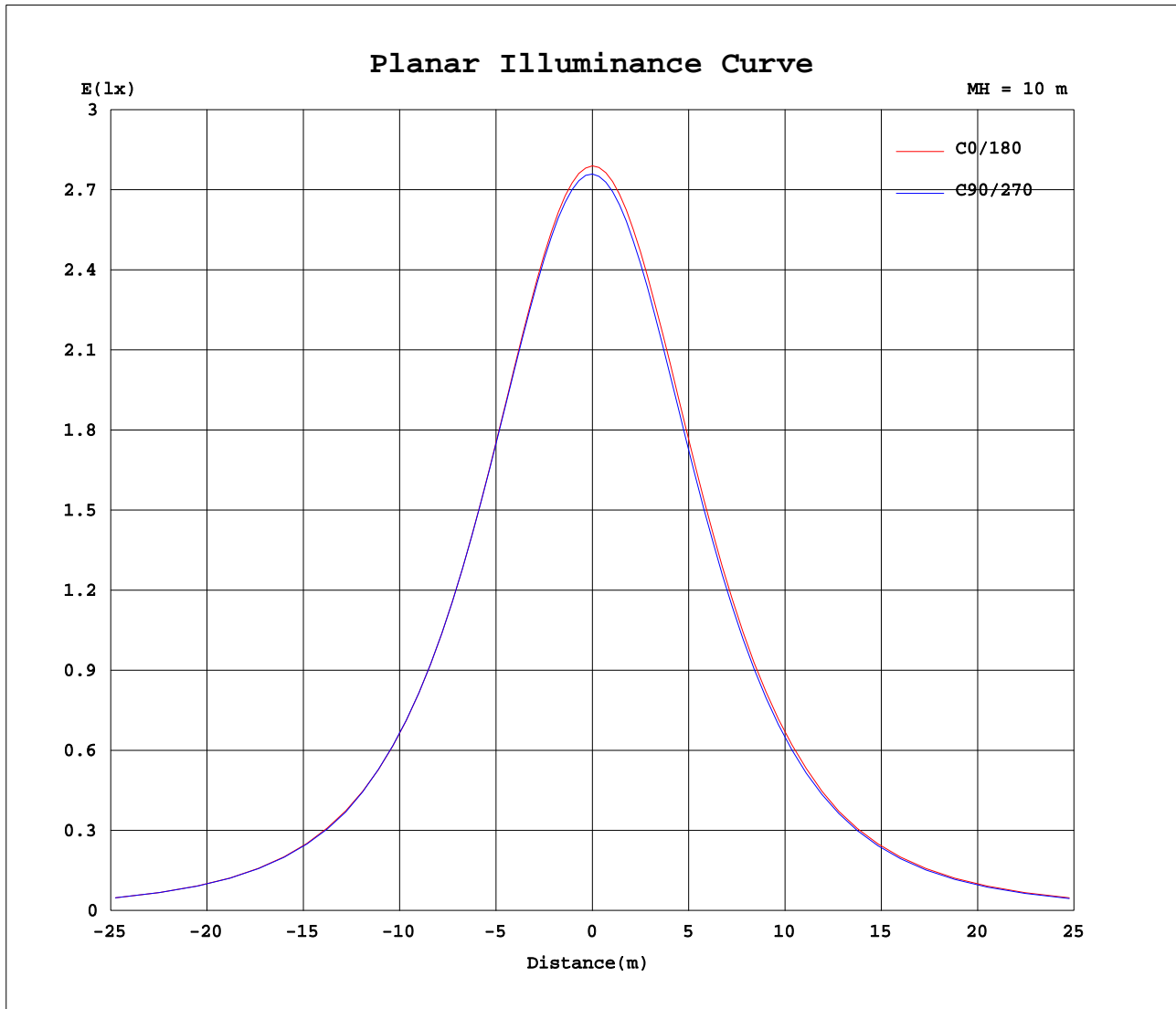


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Dillon
 Test Date: 29 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.446
 Humidity: 65.0%
 Test Distance: 6.950m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Dillon
 Test Date: 29 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.446
 Humidity: 65.0%
 Test Distance: 6.950m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: C-SFR-F2219S12-VB-24CC-35K-WM-84-80-12W-83	TYPE:	WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	Shielding Angle:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	279	278	277	276	277	276	279	278	277	276	277	276							
5	278	278	276	275	276	276	278	277	276	275	276	275							
10	274	274	272	272	272	272	275	273	272	270	271	271							
15	269	269	268	267	268	267	270	269	267	266	266	266							
20	259	260	259	258	259	258	261	259	258	256	256	257							
25	251	251	251	250	251	250	253	251	249	247	248	248							
30	236	237	237	236	236	236	238	236	235	232	233	233							
35	225	226	225	225	225	224	226	224	223	221	222	222							
40	205	206	206	205	206	205	207	205	204	202	203	203							
45	191	193	193	191	192	191	193	191	190	187	189	189							
50	168	169	170	168	169	167	169	168	164	164	163	167							
55	152	152	154	150	153	150	151	152	148	147	147	151							
60	127	127	129	126	128	125	126	126	122	122	122	125							
65	109	109	111	109	111	108	109	108	105	104	104	107							
70	80.6	82.8	83.1	82.9	82.6	81.8	81.9	79.9	78.1	76.2	77.6	79.2							
75	62.5	64.7	65.6	65.3	65.1	64.0	63.6	61.8	60.3	58.7	59.8	61.2							
80	35.7	38.3	39.4	39.5	39.0	37.9	37.0	35.6	34.5	33.1	34.1	35.0							
85	18.7	21.5	22.7	23.0	22.5	21.2	20.0	18.8	18.1	17.3	18.0	18.6							
90	1.09	3.37	5.38	6.00	5.54	3.89	2.40	3.22	3.73	3.49	3.32	2.47							
95	0.92	1.77	2.00	2.03	2.45	2.60	2.39	2.47	2.08	1.50	1.59	1.55							
100	0.84	1.12	1.78	1.77	2.23	2.06	2.37	2.14	1.83	1.29	1.31	1.09							
105	0.86	0.88	1.29	1.67	1.80	1.78	2.36	1.84	1.72	1.20	1.16	0.89							
110	1.01	0.90	0.54	0.73	1.09	1.79	2.31	1.80	1.09	0.67	0.52	0.90							
115	1.09	0.95	0.45	0.42	0.88	1.77	2.25	1.80	0.92	0.44	0.43	0.92							
120	1.19	1.02	0.55	0.40	0.94	1.77	2.17	1.75	0.96	0.41	0.50	0.95							
125	1.21	1.06	0.61	0.49	0.98	1.73	2.12	1.73	1.00	0.51	0.57	1.01							
130	1.28	1.10	0.71	0.60	1.03	1.69	2.01	1.71	1.04	0.61	0.65	1.04							
135	1.30	1.14	0.77	0.68	1.08	1.63	1.94	1.65	1.07	0.67	0.74	1.10							
140	1.31	1.17	0.87	0.77	1.10	1.55	1.81	1.56	1.11	0.70	0.82	1.09							
145	1.30	1.19	0.91	0.84	1.10	1.51	1.72	1.51	1.14	0.77	0.85	1.12							
150	1.29	1.22	0.96	0.94	1.13	1.44	1.62	1.44	1.16	0.90	0.89	1.16							
155	1.27	1.21	1.01	1.00	1.17	1.39	1.53	1.38	1.18	0.99	0.93	1.16							
160	1.29	1.23	1.05	1.11	1.20	1.32	1.42	1.33	1.21	1.11	0.98	1.18							
165	1.28	1.22	1.09	1.19	1.22	1.29	1.38	1.27	1.23	1.17	1.03	1.21							
170	1.23	1.22	1.15	1.27	1.27	1.25	1.30	1.27	1.28	1.27	1.11	1.20							
175	1.22	1.22	1.19	1.34	1.29	1.27	1.30	1.30	1.30	1.33	1.19	1.19							
180	1.32	1.35	1.32	1.38	1.30	1.31	1.35	1.31	1.32	1.38	1.31	1.29							

C Range: 0 - 360DEG

C Interval: 30.0DEG

Test Speed: HIGH

Temperature:25.3DEG

Operators:Dillon

Test Date:29 July 2021

γ Range: 0 - 180DEG

γ Interval: 2.0DEG

Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.446

Humidity:65.0%

Test Distance:6.950m [K=1.0000]

Remarks: