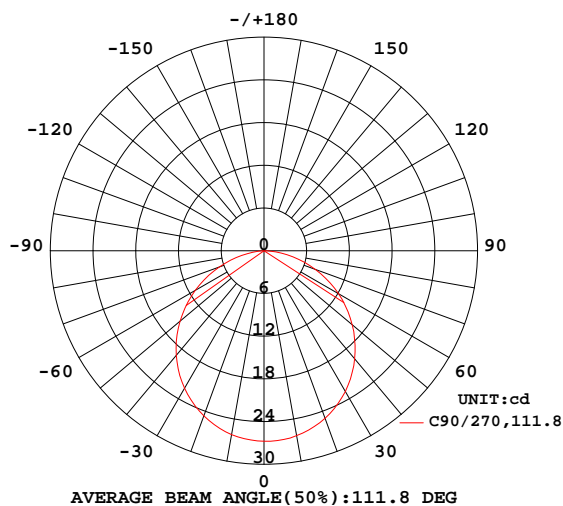


LUMINAIRE PHOTOMETRIC TEST REPORT

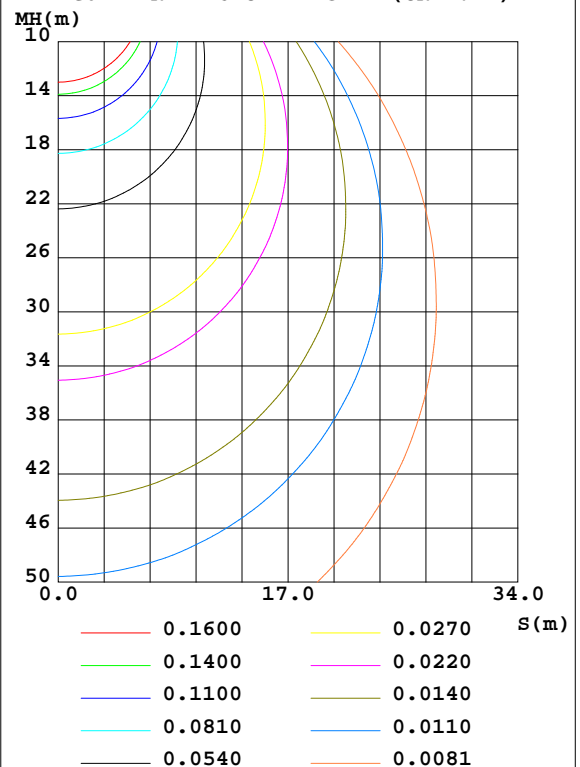
NAME: C-SFR-F2219S12-VB-24CC-RGB-WM-84-16.5W-83.3-B	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 11.91 lm/W			
MODEL	5050	Imax(cd)	27.07	S/MH(C0/180)	1.26
NOMINAL POWER(W)	16.5	LOR(%)	99.7	S/MH(C90/270)	1.24
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	76.627	$\eta$ UP,DN(C0-180)	0.0,50.7
NOMINAL FLUX(lm)	76.843	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,49.0
LAMPS INSIDE	1	$\eta$ up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	$\eta$ down(%)	99.7	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

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  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	26.54	26.53	26.37	26.67	26.61	26.47	26.22	26.49	0- 10	2.552	2.552	3.33,3.32
20	25.07	25.17	25.05	25.30	25.23	25.01	24.68	24.99	10- 20	7.310	9.863	12.9,12.8
30	22.73	22.94	22.84	23.03	22.94	22.69	22.30	22.64	20- 30	11.08	20.94	27.3,27.2
40	19.68	19.94	19.82	20.01	19.88	19.56	19.17	19.52	30- 40	13.35	34.29	44.7,44.6
50	15.97	16.29	16.19	16.33	16.17	15.84	15.37	15.77	40- 50	13.83	48.11	62.8,62.6
60	11.80	12.12	12.09	12.18	11.99	11.60	11.16	11.50	50- 60	12.48	60.59	79.1,78.8
70	7.239	7.657	7.695	7.692	7.498	7.082	6.706	6.977	60- 70	9.485	70.08	91.4,91.2
80	2.700	3.206	3.316	3.245	2.972	2.654	2.367	2.562	70- 80	5.357	75.43	98.4,98.2
90	0	0.0046	0.0441	0.0119	0	0.0000	0.0000	0	80- 90	1.195	76.63	100,99.7
100	0	0	0	0	0	0	0	0	90-100	0.0007	76.63	100,99.7
110	0	0	0	0	0	0	0	0	100-110	0	76.63	100,99.7
120	0	0	0	0	0	0	0	0	110-120	0	76.63	100,99.7
130	0	0	0	0	0	0	0	0	120-130	0	76.63	100,99.7
140	0	0	0	0	0	0	0	0	130-140	0	76.63	100,99.7
150	0	0	0	0	0	0	0	0	140-150	0	76.63	100,99.7
160	0	0	0	0	0	0	0	0	150-160	0	76.63	100,99.7
170	0	0	0	0	0	0	0	0	160-170	0	76.63	100,99.7
180	0	0	0	0	0	0	0	0	170-180	0	76.63	100,99.7
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 42.644 lm

%lum = 55.7%

%lamp = 55.5%

Conical surface Flux(120deg): 60.59 lm

%lum = 79.1%

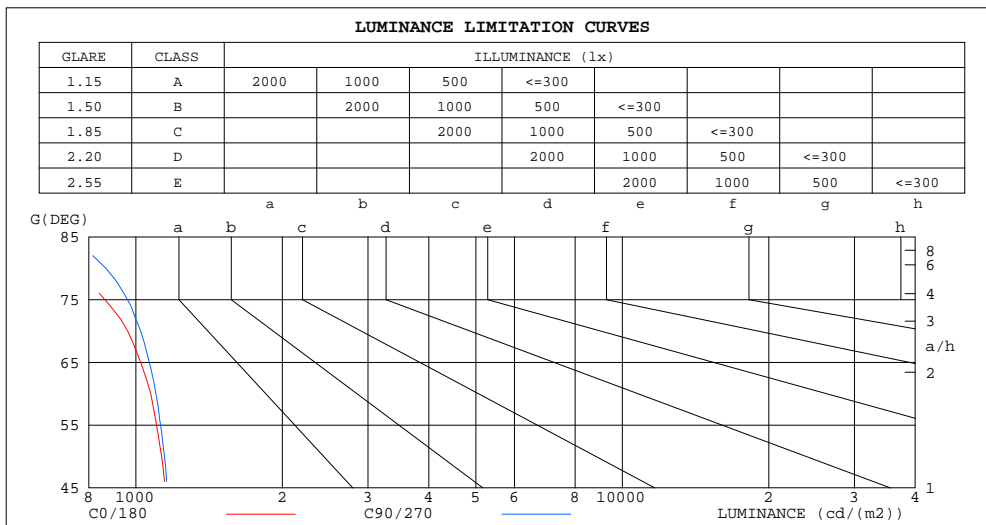
%lamp = 78.8%

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-RGB-WM-84-16.5W-83.3-BYPE:		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	576	882
80	707	868
75	943	1040
70	962	1023
65	1072	1114
60	1073	1099
55	1136	1157
50	1129	1145
45	1172	1185

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

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  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-RGB-WM-84-16.5W-83.3-BYPE:	WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm
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	.306	.174	.055	.299	.170	.054	.285	.164	.052	.273	.158	.051	.262	.152	.049		
2.0	.289	.159	.049	.283	.156	.048	.271	.151	.047	.261	.146	.046	.251	.142	.045		
3.0	.268	.143	.043	.263	.141	.042	.253	.137	.042	.243	.133	.041	.234	.130	.040		
4.0	.248	.129	.038	.243	.127	.038	.234	.124	.037	.225	.121	.037	.218	.118	.036		
5.0	.229	.117	.034	.225	.116	.034	.217	.113	.033	.209	.110	.033	.202	.108	.032		
6.0	.213	.107	.031	.209	.106	.030	.202	.103	.030	.195	.101	.030	.189	.099	.029		
7.0	.198	.098	.028	.195	.097	.028	.188	.095	.027	.182	.093	.027	.176	.092	.027		
8.0	.185	.090	.025	.182	.090	.025	.176	.088	.025	.171	.087	.025	.166	.085	.025		
9.0	.173	.084	.023	.171	.083	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023		
10.0	.163	.078	.022	.161	.078	.022	.156	.076	.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	.190	.190	.190	.162	.162	.162	.111	.111	.111	.064	.064	.064	.020	.020	.020		
1.0	.180	.156	.134	.154	.134	.116	.105	.092	.080	.060	.053	.046	.019	.017	.015		
2.0	.172	.132	.098	.147	.113	.085	.101	.078	.059	.058	.046	.035	.019	.015	.011		
3.0	.164	.114	.074	.140	.098	.064	.096	.068	.045	.056	.040	.027	.018	.013	.009		
4.0	.156	.101	.058	.134	.087	.051	.092	.061	.036	.053	.036	.021	.017	.012	.007		
5.0	.149	.090	.047	.128	.078	.041	.088	.055	.029	.051	.032	.017	.016	.010	.006		
6.0	.142	.082	.039	.122	.071	.034	.084	.050	.024	.049	.029	.014	.016	.010	.005		
7.0	.135	.075	.033	.116	.065	.029	.080	.046	.020	.047	.027	.012	.015	.009	.004		
8.0	.129	.069	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.003		
9.0	.122	.064	.025	.106	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003		
10.0	.117	.060	.022	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003		

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-RGB-WM-84-16.5W-83.3-BYPE:						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		22.2	23.7	22.5	23.9	24.2	22.3	23.8	22.6	24.0	24.2
3H		23.7	25.1	24.0	25.4	25.6	23.9	25.3	24.2	25.5	25.8
4H		24.3	25.6	24.6	25.9	26.1	24.5	25.9	24.8	26.1	26.4
6H		24.6	25.9	25.0	26.2	26.4	25.0	26.2	25.3	26.5	26.8
8H		24.7	25.9	25.1	26.2	26.5	25.1	26.3	25.5	26.6	26.9
12H		24.7	25.9	25.1	26.2	26.5	25.2	26.4	25.5	26.7	27.0
4H 2H		22.9	24.2	23.2	24.5	24.7	22.9	24.3	23.3	24.5	24.8
3H		24.6	25.7	24.9	26.0	26.3	24.7	25.9	25.1	26.2	26.5
4H		25.2	26.3	25.6	26.6	27.0	25.5	26.5	25.8	26.9	27.2
6H		25.7	26.7	26.1	27.0	27.4	26.1	27.0	26.5	27.4	27.7
8H		25.8	26.7	26.3	27.1	27.5	26.2	27.1	26.7	27.5	27.9
12H		25.9	26.7	26.3	27.1	27.5	26.4	27.2	26.8	27.6	28.0
8H 4H		25.5	26.4	26.0	26.8	27.2	25.7	26.6	26.2	27.0	27.4
6H		26.2	26.9	26.6	27.3	27.7	26.5	27.2	26.9	27.6	28.0
8H		26.4	27.0	26.8	27.4	27.9	26.8	27.4	27.2	27.8	28.3
12H		26.4	27.0	26.9	27.4	27.9	26.9	27.5	27.4	27.9	28.4
12H 4H		25.6	26.4	26.0	26.8	27.2	25.7	26.6	26.2	26.9	27.3
6H		26.2	26.9	26.7	27.3	27.8	26.5	27.2	27.0	27.6	28.1
8H		26.5	27.0	26.9	27.5	27.9	26.8	27.4	27.3	27.8	28.3
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 0.2 / - 0.2					+ 0.1 / - 0.2				
1.5H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.2 / - 0.3					+ 0.1 / - 0.3				

CIE Pub.117, 76.84 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -8.9)  
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-RGB-WM-84-16.5W-83.3-BYPE:	WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm
MFR.: CLEAR	SUR.: 22*1000mm
	Shielding Angle:

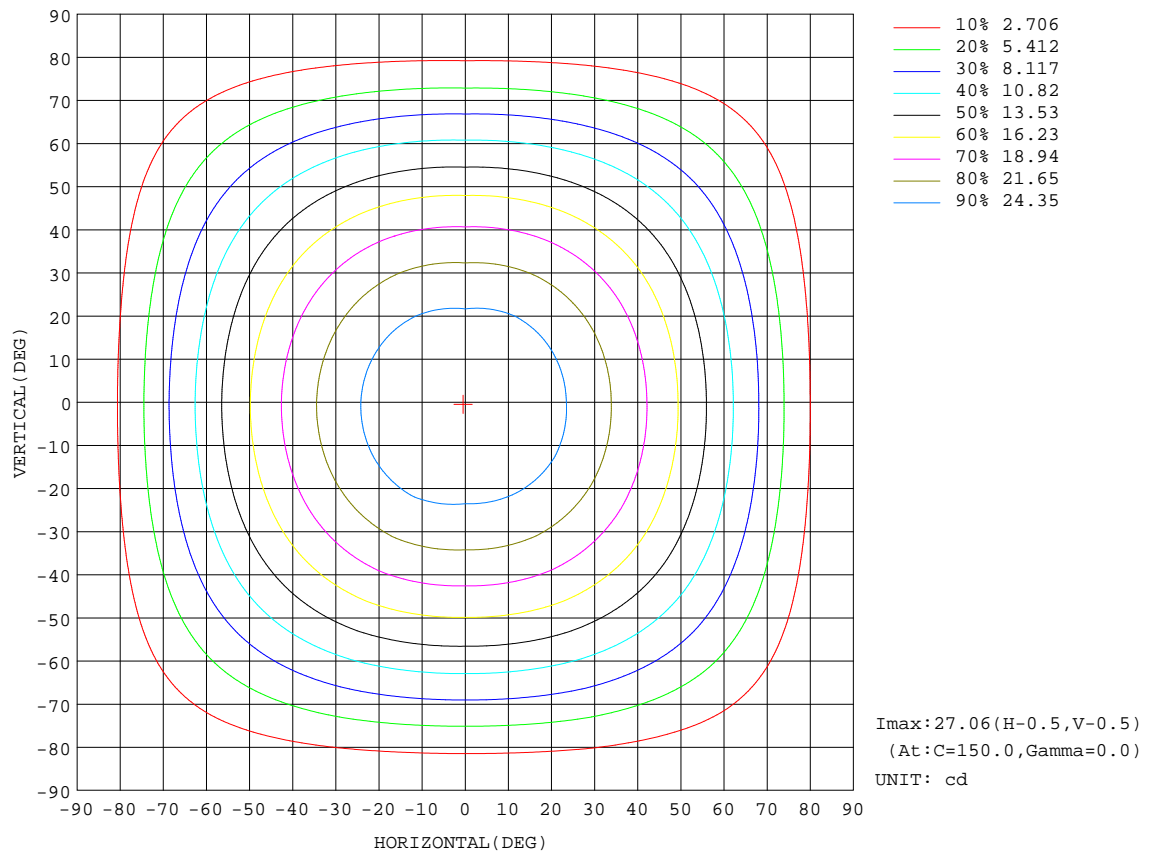
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT)    k(RI) x RCR = 5									
k = 0.60	57	46	39	57	46	39	55	45	39	32
0.80	67	56	49	66	55	48	65	55	48	41
1.00	76	65	58	75	64	57	72	66	57	50
1.25	83	73	65	82	72	65	79	70	64	57
1.50	88	78	71	86	77	71	83	75	70	62
2.00	95	86	80	93	85	79	90	83	78	70
2.50	99	91	85	97	90	84	93	87	82	74
3.00	102	95	90	100	94	89	96	91	87	78
4.00	106	100	96	104	99	94	99	95	92	83
5.00	108	104	100	106	102	98	102	98	95	86
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

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  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-RGB-WM-84-16.5W-83.3-BYPE:	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:



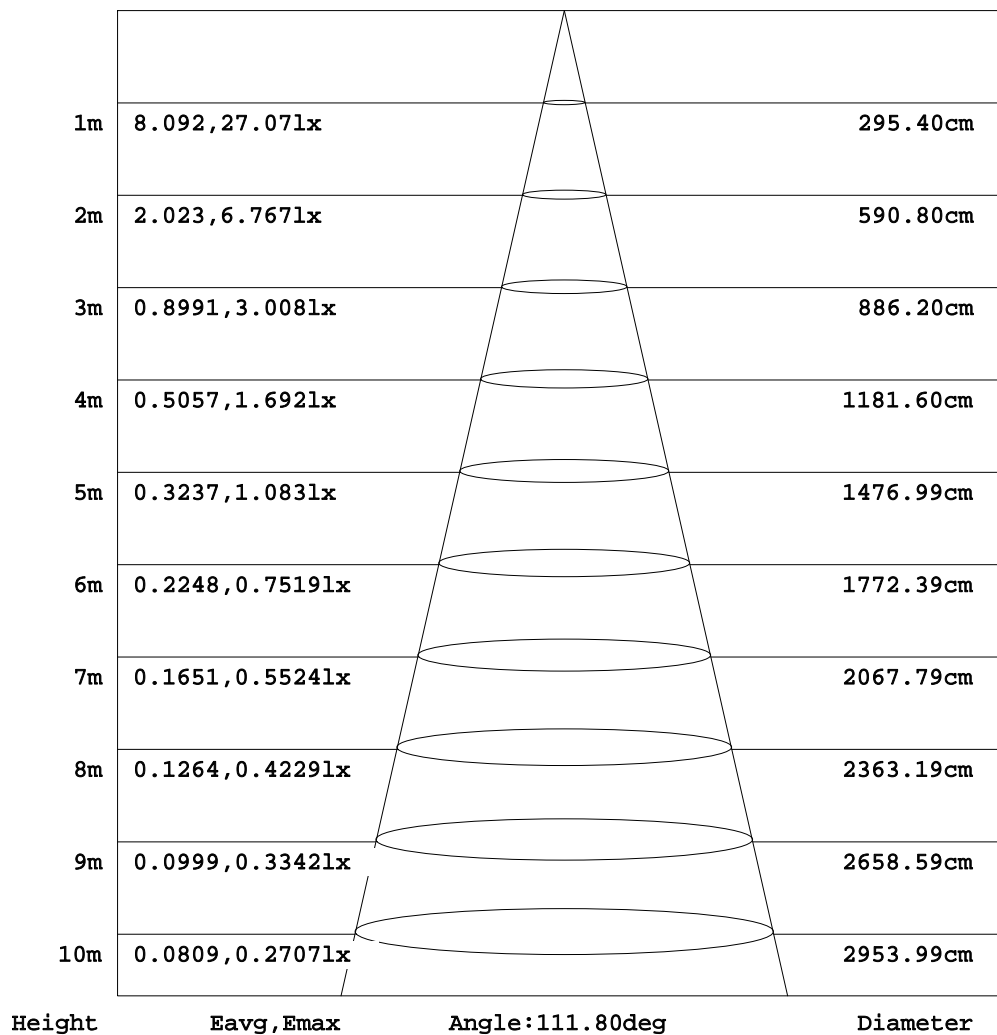
C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: Dillon  
 Test Date: 29 July 2021

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-RGB-WM-84-16.5W-83.3-BYPE:	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

Flux out:55.87 lm



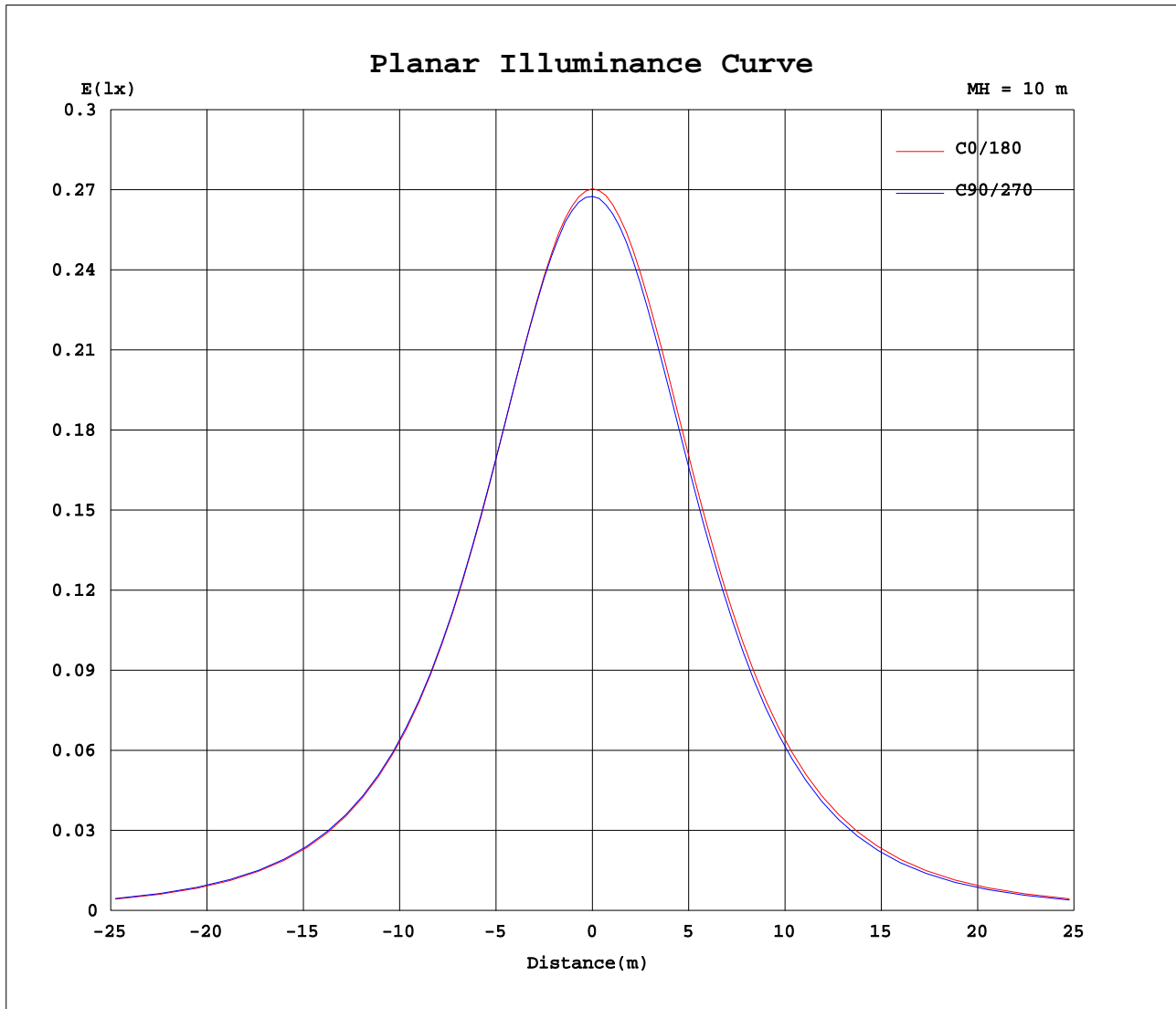
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  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-RGB-WM-84-16.5W-83.3-BYPE:	WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm
MFR.: CLEAR	SUR.: 22*1000mm
	Shielding Angle:

Table--1

UNIT: cd

C(DEC)	0	30	60	90	120	150	180	210	240	270	300	330						
γ (DEC)	0	27.0	27.0	26.9	26.8	27.1	27.1	27.0	27.0	26.9	26.8	27.1	27.1					
5	26.9	27.0	26.8	26.7	27.0	27.0	27.0	27.0	26.8	26.6	26.9	27.0	27.0					
10	26.5	26.6	26.5	26.4	26.7	26.6	26.6	26.5	26.4	26.2	26.5	26.5	26.5					
15	26.0	26.1	26.0	26.0	26.2	26.2	26.2	26.1	25.9	25.7	26.0	26.0	26.0					
20	25.1	25.2	25.2	25.0	25.3	25.3	25.2	25.1	24.9	24.7	25.0	25.0	25.0					
25	24.2	24.4	24.4	24.3	24.5	24.5	24.4	24.3	24.1	23.8	24.1	24.2	24.2					
30	22.7	22.9	23.0	22.8	23.1	23.0	22.9	22.8	22.6	22.3	22.6	22.7	22.7					
35	21.6	21.8	21.8	21.7	22.0	21.9	21.8	21.6	21.4	21.2	21.4	21.5	21.5					
40	19.7	19.9	20.0	19.8	20.0	20.0	19.9	19.7	19.5	19.2	19.4	19.6	19.6					
45	18.2	18.5	18.6	18.4	18.6	18.6	18.5	18.2	18.1	17.7	18.0	18.2	18.2					
50	16.0	16.2	16.3	16.2	16.4	16.3	16.2	16.0	15.7	15.4	15.7	15.9	15.9					
55	14.3	14.6	14.7	14.6	14.7	14.7	14.6	14.3	14.1	13.7	14.0	14.2	14.2					
60	11.8	12.1	12.2	12.1	12.2	12.1	12.0	11.7	11.5	11.2	11.4	11.6	11.6					
65	9.97	10.3	10.4	10.4	10.4	10.3	10.2	9.94	9.66	9.39	9.62	9.83	9.83					
70	7.24	7.56	7.76	7.70	7.74	7.64	7.50	7.21	6.95	6.71	6.87	7.08	7.08					
75	5.37	5.75	5.95	5.92	5.96	5.82	5.65	5.40	5.13	4.89	5.05	5.23	5.23					
80	2.70	3.10	3.31	3.32	3.32	3.17	2.97	2.74	2.57	2.37	2.52	2.61	2.61					
85	1.11	1.45	1.69	1.69	1.64	1.50	1.33	1.14	1.01	0.85	0.96	1.03	1.03					
90	0.00	0.00	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					

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: