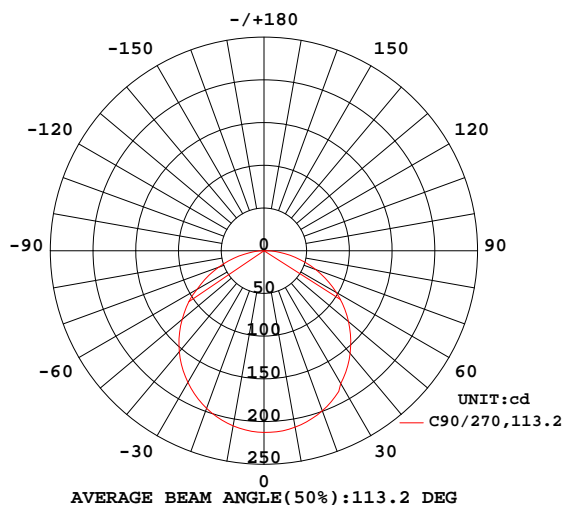


LUMINAIRE PHOTOMETRIC TEST REPORT

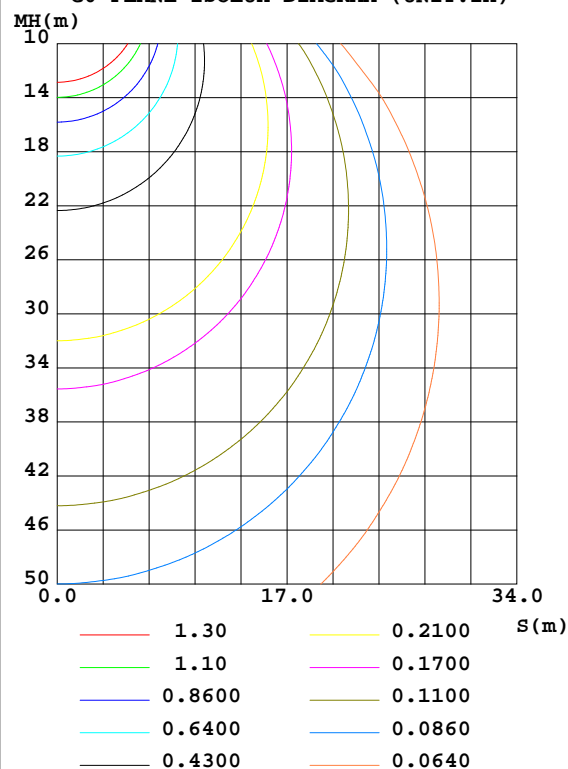
NAME: C-SFR-F2219S12-VB-24CC-RGB-WM-84-16.5W-83.3-RGB	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 38.41 lm/W			
MODEL	5050	Imax(cd)	214.9	S/MH(C0/180)	1.25
NOMINAL POWER(W)	16.5	LOR(%)	100.6	S/MH(C90/270)	1.25
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	628.82	η UP,DN(C0-180)	0.4,50.7
NOMINAL FLUX(lm)	625.04	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.4,49.0
LAMPS INSIDE	1	η up(%)	0.9	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	η 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

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	210.9	210.7	209.6	211.2	211.4	210.2	208.2	210.0	0- 10	20.25	20.25	3.22,3.24
20	199.8	200.4	199.4	200.8	200.8	199.1	196.4	198.4	10- 20	58.09	78.34	12.5,12.5
30	181.9	181.9	179.7	182.1	180.4	179.7	178.1	179.0	20- 30	88.13	166.5	26.5,26.6
40	158.1	159.0	156.8	158.8	156.9	156.0	154.1	155.4	30- 40	106.0	272.5	43.3,43.6
50	129.6	131.0	129.1	130.7	128.8	127.4	125.1	126.8	40- 50	110.6	383.1	60.9,61.3
60	97.32	99.10	97.85	98.96	96.92	94.78	90.66	93.88	50- 60	101.0	484.1	77,77.4
70	60.91	64.11	64.45	64.10	62.48	59.54	56.62	58.87	60- 70	77.99	562.0	89.4,89.9
80	26.38	30.04	31.01	30.17	28.00	25.89	23.75	25.24	70- 80	46.77	608.8	96.8,97.4
90	0.7201	3.770	5.112	3.989	1.676	2.432	2.221	2.061	80- 90	14.61	623.4	99.1,99.7
100	0.4841	1.097	1.074	1.342	1.597	1.244	0.6869	0.9034	90-100	1.650	625.1	99.4,100
110	0.6078	0.5431	0.0603	0.7729	1.527	0.7986	0.1007	0.5429	100-110	0.9038	626.0	99.5,100
120	0.8073	0.6020	0.0304	0.7577	1.422	0.7910	0.0545	0.5839	110-120	0.6248	626.6	99.6,100
130	0.8319	0.6972	0.1514	0.7774	1.291	0.7761	0.1482	0.6670	120-130	0.6023	627.2	99.7,100
140	0.8623	0.7337	0.3146	0.7728	1.152	0.7624	0.2993	0.6700	130-140	0.5429	627.8	99.8,100
150	0.8802	0.7594	0.4539	0.7320	0.9981	0.7473	0.4597	0.6580	140-150	0.4488	628.2	99.9,101
160	0.8501	0.7700	0.5991	0.7290	0.8680	0.7503	0.5807	0.6852	150-160	0.3346	628.5	100,101
170	0.8561	0.8032	0.7079	0.7428	0.7685	0.7803	0.7198	0.7412	160-170	0.2113	628.7	100,101
180	0.7956	0.7880	0.7865	0.7638	0.7774	0.7669	0.7986	0.7669	170-180	0.0740	628.8	100,101
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 339.2 lm

%lum = 53.9%

%lamp = 54.3%

Conical surface Flux(120deg): 484.05 lm

%lum = 77.0%

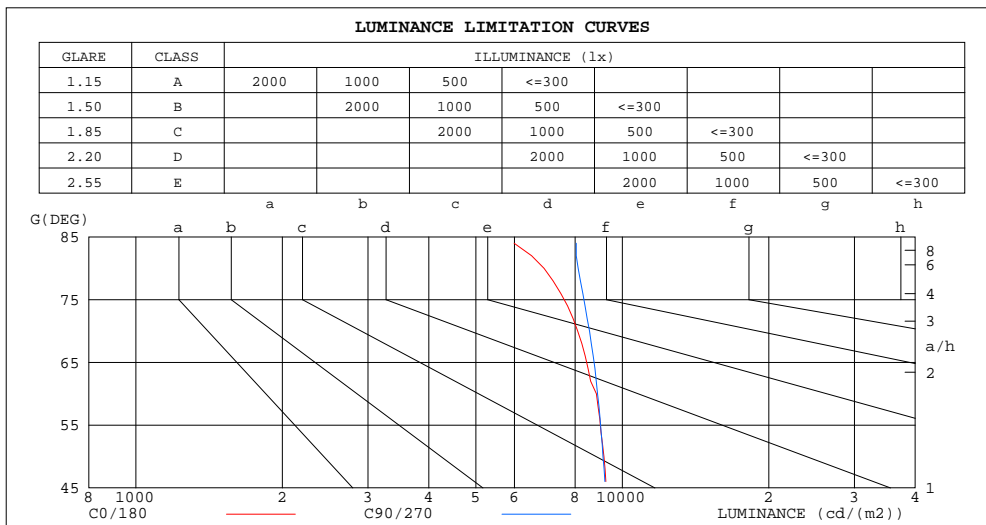
%lamp = 77.4%

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- 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	7184	9645
80	6905	8116
75	8219	8924
70	8095	8565
65	8824	9112
60	8847	8896
55	9260	9266
50	9164	9128
45	9461	9402

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-RGB-WM-84-16.5W-83.3- RGBE :	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	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	.319	.181	.057	.312	.178	.056	.298	.171	.055	.285	.164	.053	.273	.158	.051		
2.0	.298	.163	.050	.292	.161	.049	.279	.155	.048	.268	.150	.047	.258	.146	.046		
3.0	.275	.146	.044	.269	.144	.043	.258	.140	.043	.248	.136	.042	.239	.132	.041		
4.0	.253	.132	.039	.248	.130	.038	.238	.126	.038	.229	.123	.037	.221	.120	.037		
5.0	.234	.119	.034	.229	.118	.034	.220	.115	.034	.212	.112	.033	.205	.109	.033		
6.0	.216	.108	.031	.212	.107	.031	.205	.105	.031	.197	.103	.030	.191	.100	.030		
7.0	.201	.099	.028	.197	.098	.028	.191	.096	.028	.184	.094	.027	.178	.093	.027		
8.0	.188	.092	.026	.184	.091	.026	.178	.089	.025	.173	.087	.025	.167	.086	.025		
9.0	.176	.085	.024	.173	.084	.024	.167	.083	.023	.162	.081	.023	.157	.080	.023		
10.0	.165	.079	.022	.163	.079	.022	.158	.077	.022	.153	.076	.022	.148	.075	.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	.198	.198	.198	.169	.169	.169	.116	.116	.116	.066	.066	.066	.021	.021	.021	
1.0	.189	.164	.141	.161	.140	.122	.110	.097	.084	.064	.056	.049	.020	.018	.016	
2.0	.181	.139	.105	.155	.120	.091	.106	.083	.063	.061	.048	.037	.020	.016	.012	
3.0	.173	.122	.081	.148	.105	.070	.102	.073	.049	.059	.043	.029	.019	.014	.010	
4.0	.165	.108	.065	.142	.094	.057	.097	.065	.040	.056	.038	.024	.018	.012	.008	
5.0	.158	.098	.054	.135	.085	.047	.093	.059	.033	.054	.035	.020	.017	.011	.006	
6.0	.150	.090	.046	.129	.078	.040	.089	.054	.028	.052	.032	.017	.017	.010	.006	
7.0	.143	.083	.040	.123	.072	.035	.085	.050	.025	.050	.030	.015	.016	.010	.005	
8.0	.137	.077	.036	.118	.067	.031	.082	.047	.022	.047	.028	.013	.015	.009	.004	
9.0	.131	.072	.032	.113	.062	.028	.078	.044	.020	.045	.026	.012	.015	.008	.004	
10.0	.125	.068	.029	.108	.059	.026	.075	.041	.018	.044	.024	.011	.014	.008	.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-RGB-WM-84-16.5W-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		22.2	23.7	22.4	23.9	24.1	22.2	23.8	22.5	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		24.4	25.7	24.7	26.0	26.2	24.6	25.9	24.9	26.2	26.5
6H		24.8	26.1	25.2	26.4	26.7	25.1	26.4	25.5	26.7	27.0
8H		25.0	26.2	25.3	26.5	26.8	25.3	26.6	25.7	26.9	27.2
12H		25.0	26.2	25.4	26.5	26.9	25.5	26.7	25.9	27.0	27.3
4H 2H		22.8	24.2	23.1	24.4	24.7	22.9	24.2	23.2	24.5	24.8
3H		24.6	25.8	24.9	26.1	26.4	24.7	25.9	25.1	26.2	26.5
4H		25.3	26.4	25.7	26.8	27.1	25.6	26.6	25.9	27.0	27.3
6H		25.9	26.9	26.4	27.3	27.7	26.3	27.2	26.7	27.6	28.0
8H		26.2	27.0	26.6	27.4	27.8	26.5	27.4	27.0	27.8	28.2
12H		26.3	27.1	26.7	27.5	27.9	26.7	27.5	27.2	28.0	28.4
8H 4H		25.7	26.6	26.1	27.0	27.4	25.9	26.7	26.3	27.1	27.5
6H		26.5	27.2	26.9	27.6	28.1	26.7	27.5	27.2	27.9	28.3
8H		26.8	27.4	27.2	27.9	28.3	27.1	27.8	27.6	28.2	28.7
12H		27.0	27.5	27.5	28.0	28.5	27.4	28.0	27.9	28.4	28.9
12H 4H		25.7	26.5	26.1	26.9	27.4	25.9	26.7	26.3	27.1	27.5
6H		26.5	27.2	27.0	27.6	28.1	26.8	27.5	27.3	27.9	28.4
8H		26.9	27.5	27.4	27.9	28.4	27.2	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, 625.0 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -1.6)
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- TYPE :	WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm
MFR.: CLEAR	SUR.: 22*1000mm
	SERIAL No.:
	Shielding Angle:

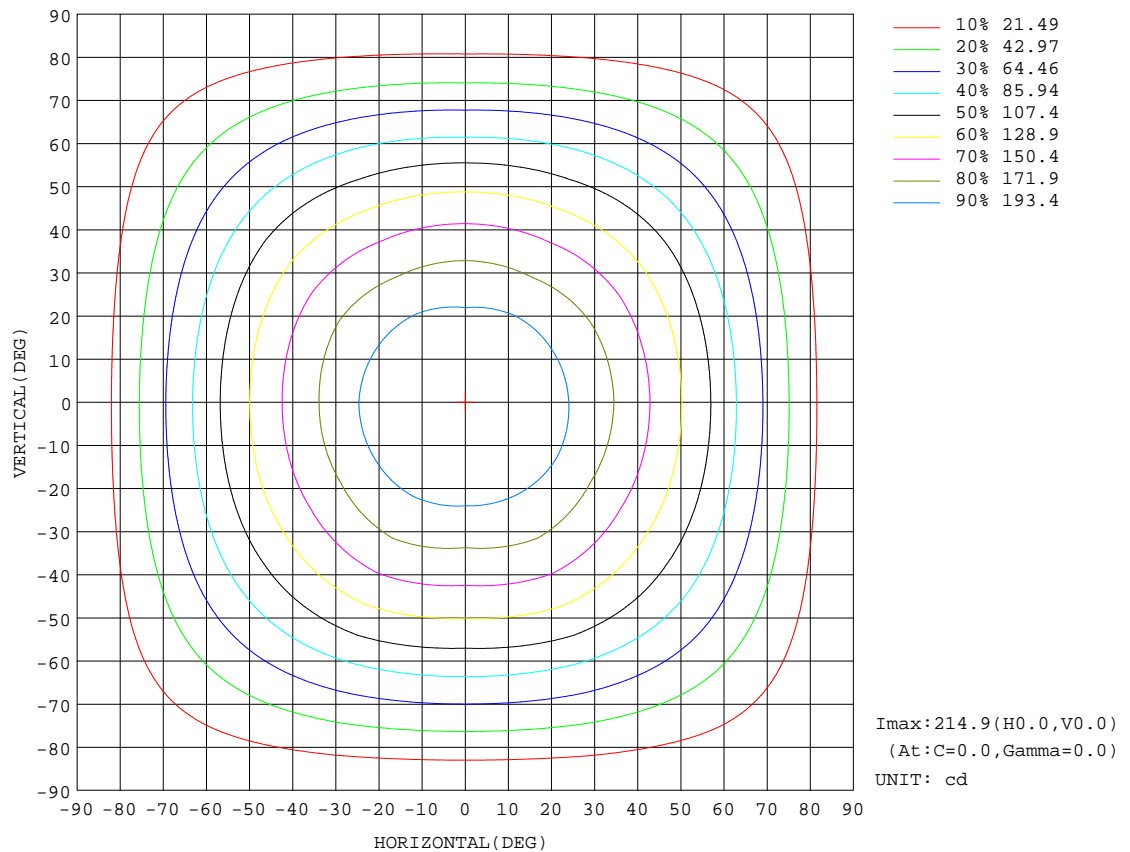
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	57	45	38	56	45	38	55	45	38	31
0.80	67	55	48	66	55	48	64	54	47	40
1.00	76	64	57	74	64	56	72	65	56	49
1.25	83	72	65	81	71	64	78	70	63	56
1.50	88	78	70	86	77	70	83	75	69	61
2.00	95	86	79	93	85	78	89	82	77	69
2.50	99	91	84	97	89	84	93	86	82	73
3.00	102	95	89	100	93	88	96	90	86	77
4.00	106	100	96	104	99	94	99	95	91	82
5.00	109	104	100	106	102	98	102	98	95	85
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-RGB-WM-84-16.5W-83.3- TYPE :		WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	Shielding Angle:



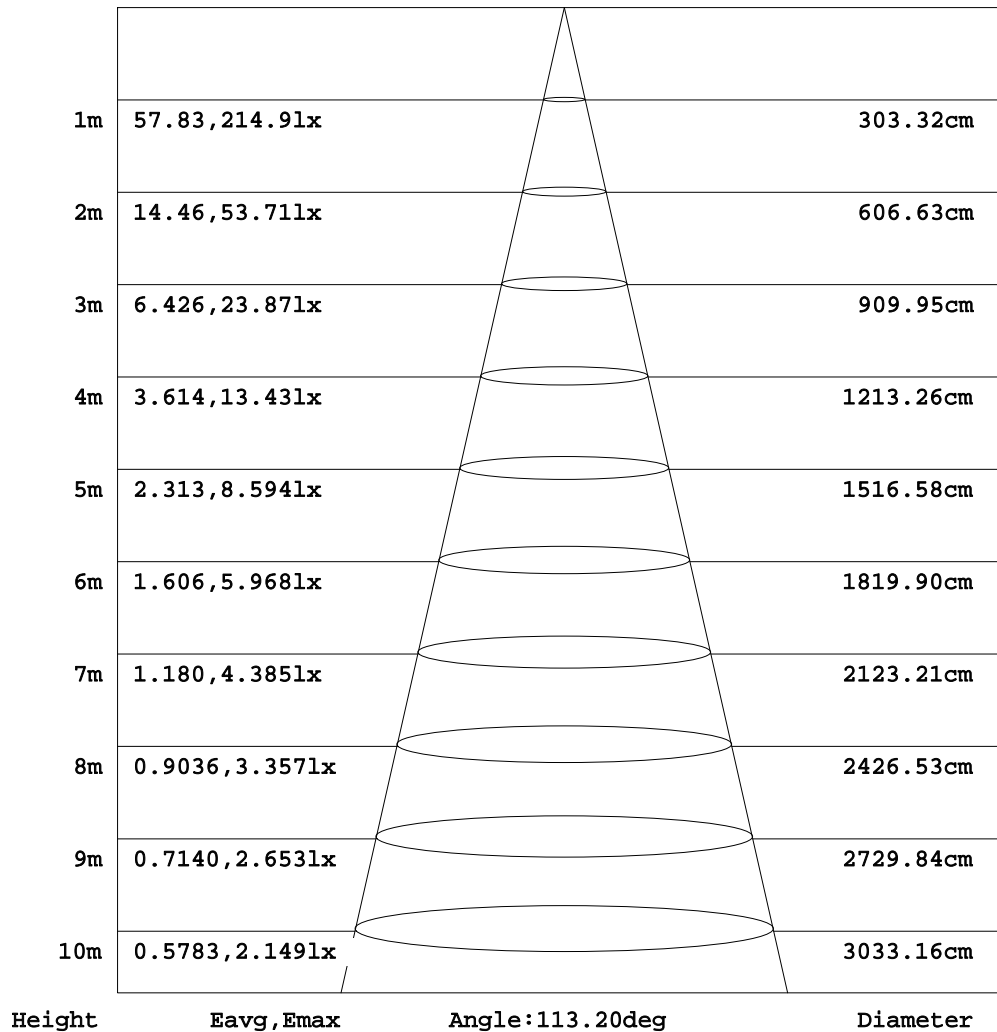
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Dillon
 Test Date: 29 July 2021

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- TYPE :	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

Flux out:465.3 lm

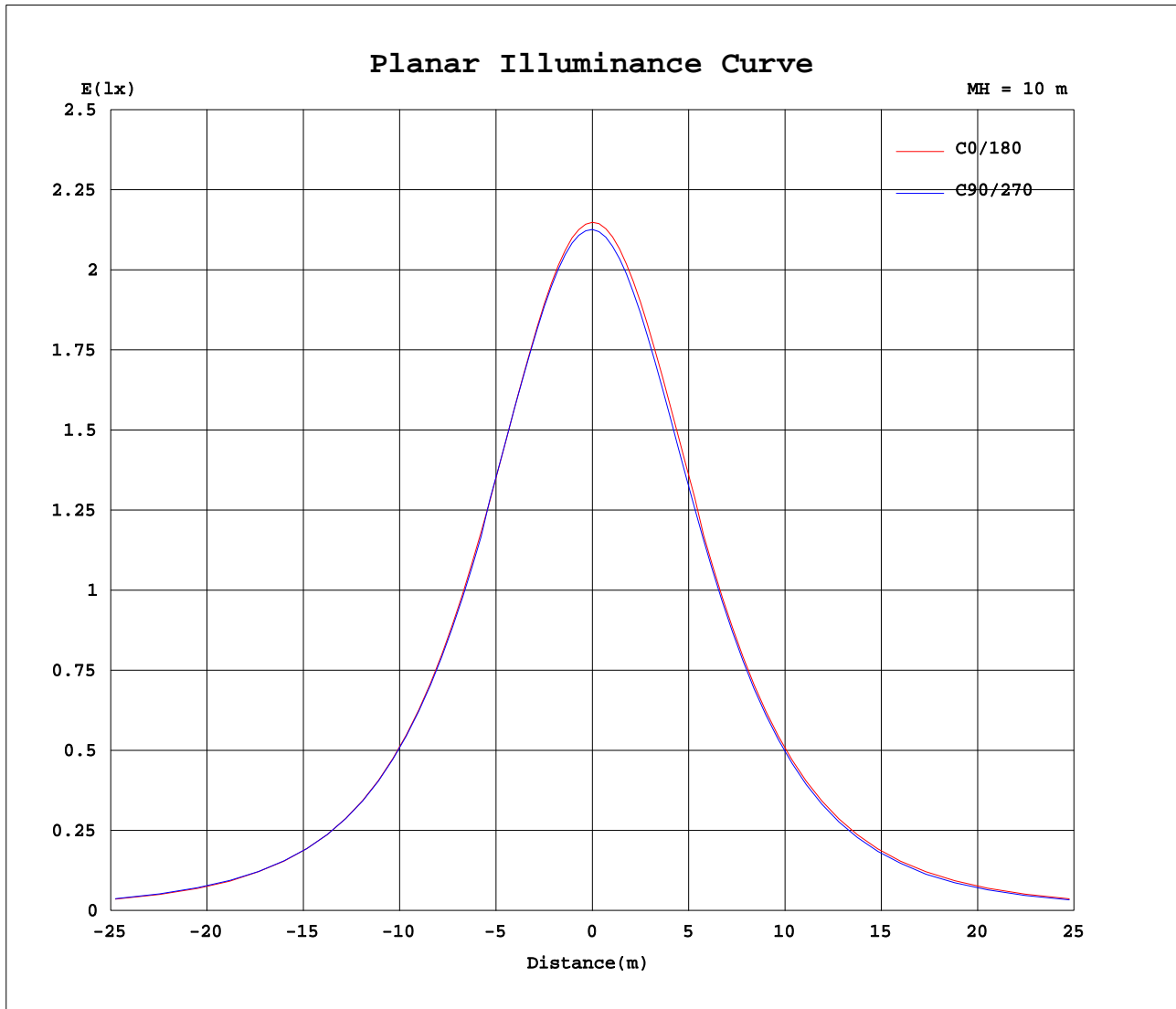


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	215	215	213	213	214	214	215	215	213	213	214	214							
5	214	214	213	212	214	214	214	214	213	212	213	214							
10	211	211	210	210	211	211	211	211	209	208	210	210							
15	207	208	207	206	208	208	208	207	206	204	206	206							
20	200	201	200	199	201	201	201	200	199	196	198	199							
25	193	195	194	193	195	194	195	193	192	190	192	192							
30	182	180	183	180	184	180	180	182	178	178	177	181							
35	173	172	175	171	175	172	172	173	169	169	169	172							
40	158	157	161	157	160	157	157	158	154	154	154	157							
45	147	147	150	146	150	147	146	147	143	143	143	146							
50	130	130	132	129	132	129	129	129	126	125	125	129							
55	117	117	120	117	120	117	117	117	113	112	113	116							
60	97.3	97.8	100	97.9	100	97.6	96.9	96.5	93.0	90.7	92.6	95.1							
65	82.0	84.3	85.4	84.7	85.2	84.3	83.3	81.3	79.4	77.1	78.8	80.6							
70	60.9	63.5	64.8	64.4	64.7	63.5	62.5	60.5	58.6	56.6	58.1	59.6							
75	46.8	49.5	51.1	50.8	51.0	49.6	48.4	46.5	44.8	43.1	44.3	45.6							
80	26.4	29.2	30.9	31.0	30.8	29.5	28.0	26.5	25.3	23.7	24.9	25.6							
85	13.8	16.6	18.3	18.5	18.3	17.0	15.4	14.1	13.1	12.1	12.7	13.3							
90	0.72	2.77	4.77	5.11	4.79	3.19	1.68	2.28	2.58	2.22	2.40	1.72							
95	0.58	1.37	1.70	1.48	1.76	1.78	1.60	1.69	1.32	0.83	1.26	1.13							
100	0.48	0.74	1.46	1.07	1.49	1.19	1.60	1.33	1.16	0.69	1.07	0.73							
105	0.50	0.67	0.97	0.84	1.00	1.12	1.57	1.16	1.06	0.61	0.96	0.64							
110	0.61	0.68	0.40	0.06	0.44	1.11	1.53	1.15	0.45	0.10	0.42	0.67							
115	0.70	0.70	0.44	0.02	0.43	1.08	1.49	1.13	0.44	0.01	0.39	0.65							
120	0.81	0.72	0.48	0.03	0.44	1.08	1.42	1.12	0.46	0.05	0.47	0.70							
125	0.80	0.75	0.52	0.09	0.47	1.06	1.36	1.08	0.48	0.10	0.51	0.74							
130	0.83	0.80	0.59	0.15	0.53	1.03	1.29	1.03	0.52	0.15	0.56	0.77							
135	0.87	0.81	0.61	0.23	0.54	0.99	1.24	0.98	0.51	0.22	0.57	0.78							
140	0.86	0.80	0.66	0.31	0.60	0.95	1.15	0.96	0.57	0.30	0.54	0.80							
145	0.88	0.82	0.69	0.38	0.58	0.92	1.08	0.91	0.61	0.36	0.51	0.81							
150	0.88	0.83	0.69	0.45	0.61	0.85	1.00	0.88	0.61	0.46	0.51	0.80							
155	0.88	0.85	0.70	0.51	0.66	0.82	0.94	0.83	0.64	0.51	0.51	0.82							
160	0.85	0.83	0.71	0.60	0.67	0.79	0.87	0.80	0.70	0.58	0.56	0.81							
165	0.87	0.81	0.72	0.64	0.68	0.75	0.84	0.79	0.73	0.64	0.61	0.83							
170	0.86	0.84	0.77	0.71	0.73	0.75	0.77	0.78	0.78	0.72	0.67	0.82							
175	0.84	0.85	0.77	0.74	0.71	0.80	0.81	0.78	0.74	0.74	0.70	0.84							
180	0.80	0.80	0.78	0.79	0.73	0.80	0.78	0.76	0.77	0.80	0.76	0.78							

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: