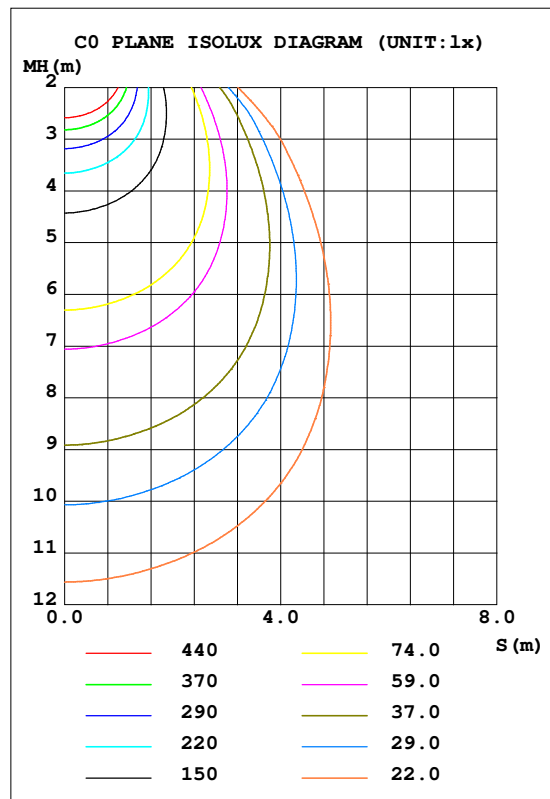
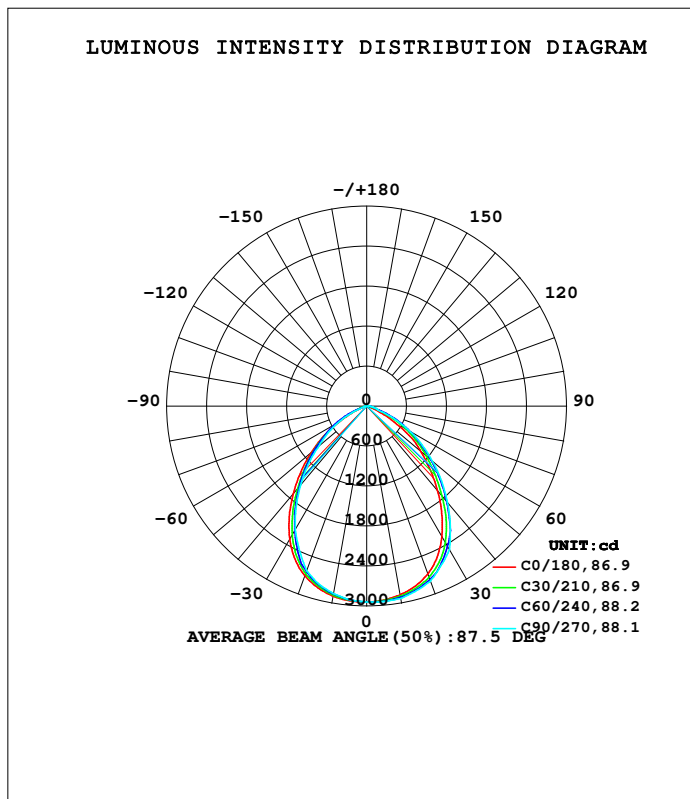


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:221.4V I:0.2493A P:53.47W PF:0.9688 Freq:49.99Hz Lamp Flux:5812.39x1 lm		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 108.70 lm/W			
MODEL	EP60SQ60W40V1	I <sub>max</sub> (cd)	2944	S/MH (C0/180)	1.17
NOMINAL POWER (W)	60	LOR (%)	100.0	S/MH (C90/270)	1.11
RATED VOLTAGE (V)	220.0	TOTAL FLUX (lm)	5812.4	η UP, DN (C0-180)	0.0, 53.5
NOMINAL FLUX (lm)	5812.39	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 46.5
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	220.0	η down (%)	100.0	CIBSE SHR MAX	1.25



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2019 9/16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 7.280m [K=1.0000]  
 Remarks:

ZONAL FLUX DIAGRAM

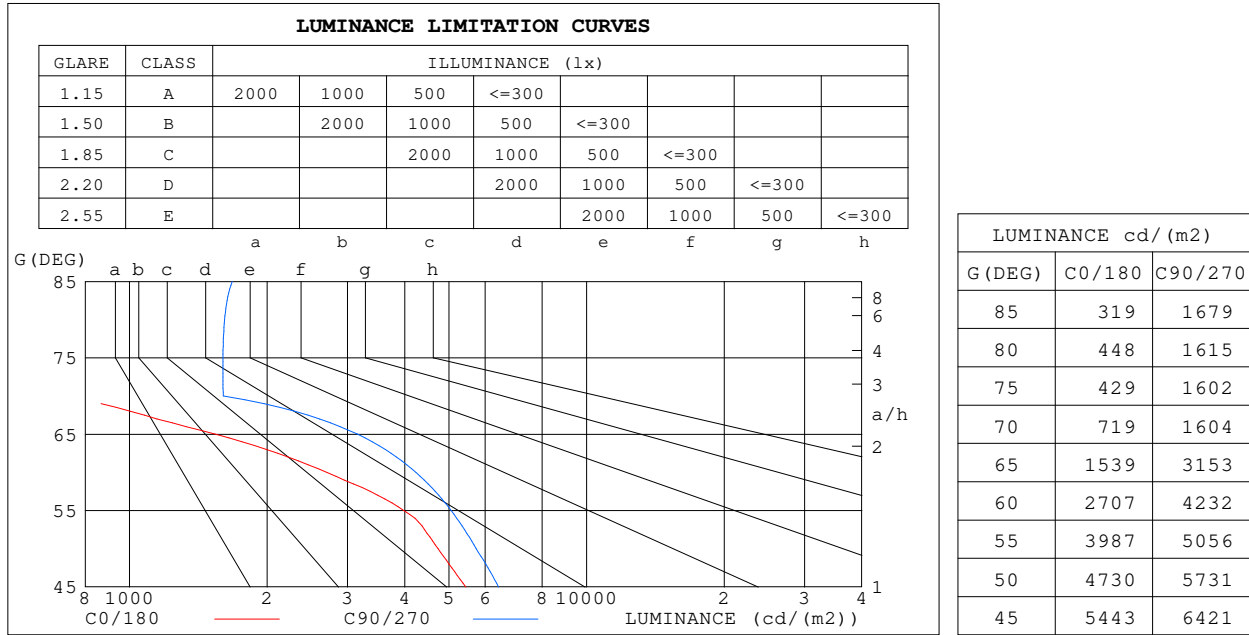
ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	2876	2903	2932	2913	2896	2871	2857	2857	0- 10	278.1	278.1	4.79,4.79
20	2681	2757	2797	2772	2711	2660	2632	2642	10- 20	793.4	1072	18.4,18.4
30	2259	2398	2488	2435	2309	2201	2147	2170	20- 30	1160	2232	38.4,38.4
40	1657	1830	1889	1879	1713	1580	1544	1551	30- 40	1255	3487	60,60
50	1064	1229	1289	1276	1084	1043	941.9	1025	40- 50	1082	4569	78.6,78.6
60	473.6	752.1	740.7	783.7	471.6	592.0	492.5	604.0	50- 60	765.6	5335	91.8,91.8
70	86.11	307.6	192.0	315.4	102.4	210.2	43.04	213.3	60- 70	366.5	5701	98.1,98.1
80	27.20	48.84	98.16	53.77	25.84	22.53	21.83	22.61	70- 80	87.95	5789	99.6,99.6
90	0.1952	1.980	4.279	2.015	0.3588	0.6727	0.6126	0.6727	80- 90	23.25	5812	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		

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2019 9/16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity:65.0%  
 Test Distance:7.280m [K=1.0000]  
 Remarks:

LUMINANCE LIMITATION CURVES

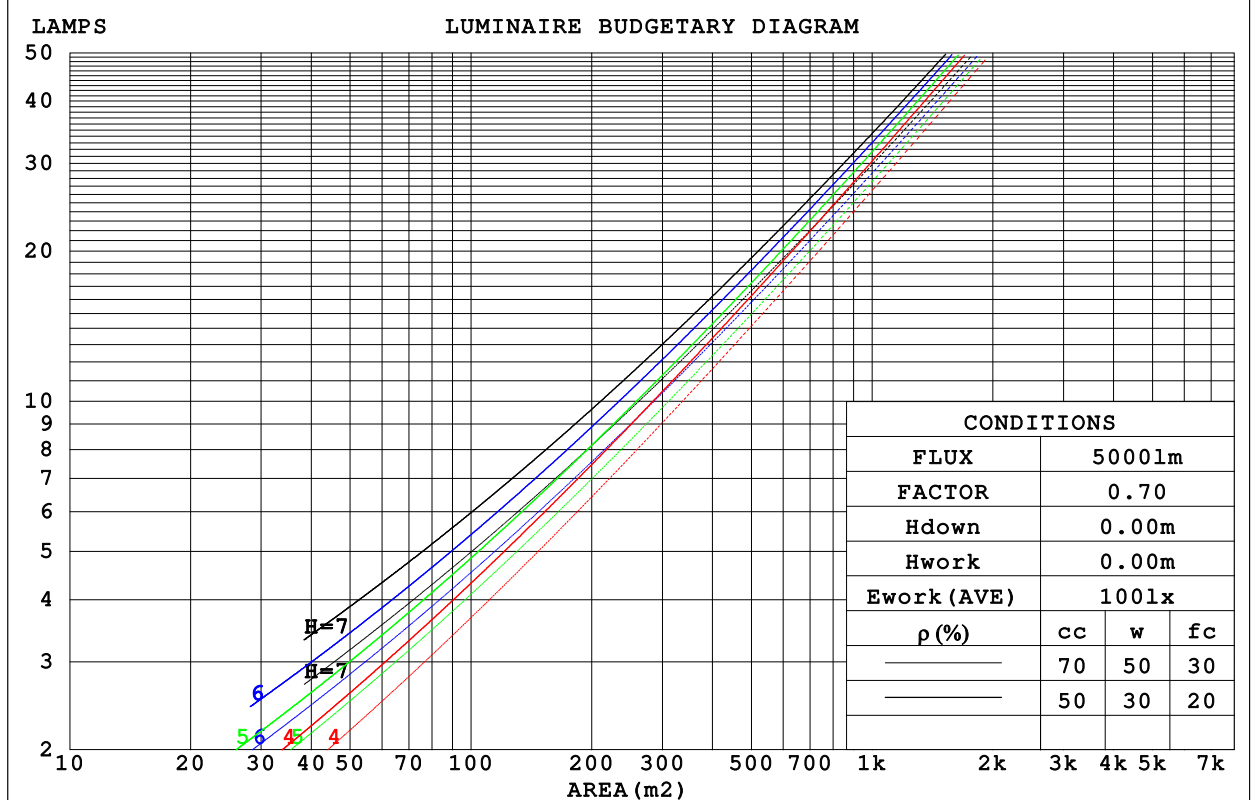


C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2019 9/16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 7.280m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	1.07	1.04	1.01	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.94	.92	.91	.89
2.0	.96	.91	.86	.94	.89	.85	.91	.87	.83	.88	.84	.81	.85	.82	.79	.77
3.0	.86	.79	.74	.85	.78	.73	.82	.77	.72	.79	.75	.71	.77	.73	.70	.68
4.0	.78	.70	.64	.77	.70	.64	.74	.68	.63	.72	.67	.62	.70	.65	.62	.60
5.0	.70	.63	.57	.69	.62	.57	.67	.61	.56	.66	.60	.55	.64	.59	.55	.53
6.0	.64	.56	.51	.63	.56	.50	.62	.55	.50	.60	.54	.49	.58	.53	.49	.47
7.0	.59	.51	.45	.58	.50	.45	.56	.50	.45	.55	.49	.45	.54	.48	.44	.42
8.0	.54	.46	.41	.53	.46	.41	.52	.45	.41	.51	.45	.40	.50	.44	.40	.38
9.0	.50	.42	.37	.49	.42	.37	.48	.42	.37	.47	.41	.37	.46	.41	.37	.35
10.0	.46	.39	.34	.46	.39	.34	.45	.38	.34	.44	.38	.34	.43	.38	.34	.32



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2019 9/16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 7.280m [K=1.0000]  
 Remarks:

WEC AND CCEC

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	.243	.138	.044	.236	.135	.043	.223	.128	.041	.211	.122	.039	.200	.116	.037	
2.0	.237	.130	.040	.231	.127	.039	.220	.122	.038	.209	.117	.037	.200	.113	.036	
3.0	.225	.120	.036	.220	.118	.035	.210	.114	.035	.201	.110	.034	.193	.107	.033	
4.0	.213	.111	.033	.208	.109	.032	.200	.106	.032	.192	.103	.031	.184	.100	.030	
5.0	.200	.102	.030	.196	.101	.029	.189	.098	.029	.182	.096	.029	.175	.093	.028	
6.0	.189	.095	.027	.185	.094	.027	.178	.091	.027	.172	.089	.026	.166	.087	.026	
7.0	.178	.088	.025	.175	.087	.025	.169	.085	.025	.163	.084	.024	.158	.082	.024	
8.0	.168	.082	.023	.165	.081	.023	.160	.080	.023	.155	.078	.023	.150	.077	.022	
9.0	.159	.077	.021	.156	.076	.021	.151	.075	.021	.147	.074	.021	.142	.072	.021	
10.0	.151	.072	.020	.148	.072	.020	.144	.070	.020	.140	.069	.020	.136	.068	.020	

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	.176	.157	.140	.150	.135	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016	
2.0	.165	.132	.105	.141	.114	.090	.097	.079	.063	.056	.046	.037	.018	.015	.012	
3.0	.156	.114	.081	.134	.098	.070	.092	.068	.049	.053	.040	.029	.017	.013	.009	
4.0	.148	.100	.064	.127	.087	.055	.087	.060	.039	.050	.035	.023	.016	.012	.008	
5.0	.141	.089	.052	.121	.077	.045	.083	.054	.032	.048	.032	.019	.016	.010	.006	
6.0	.134	.081	.043	.115	.070	.037	.079	.049	.026	.046	.029	.016	.015	.009	.005	
7.0	.128	.074	.036	.110	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.122	.068	.031	.105	.059	.027	.072	.041	.019	.042	.024	.011	.014	.008	.004	
9.0	.116	.063	.027	.100	.055	.024	.069	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.111	.059	.024	.096	.051	.021	.066	.036	.015	.039	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2019 9/16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity:65.0%  
 Test Distance:7.280m [K=1.0000]  
 Remarks:

UGR(Unified Glare Rating) Table

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	11.2	12.5	11.4	12.7	12.9	12.2	13.5	12.5	13.7	13.9
3H	11.2	12.4	11.5	12.6	12.9	12.6	13.8	12.9	14.0	14.3
4H	11.1	12.3	11.4	12.5	12.8	12.7	13.8	13.0	14.0	14.3
6H	11.1	12.1	11.4	12.4	12.7	12.7	13.8	13.0	14.0	14.3
8H	11.0	12.0	11.3	12.3	12.6	12.7	13.8	13.1	14.0	14.3
12H	11.0	12.0	11.3	12.2	12.5	12.8	13.7	13.1	14.0	14.3
4H 2H	11.7	12.8	12.0	13.1	13.3	12.5	13.7	12.8	13.9	14.1
3H	11.8	12.8	12.2	13.1	13.4	13.0	14.0	13.3	14.3	14.6
4H	11.8	12.7	12.1	13.0	13.3	13.1	14.0	13.5	14.3	14.6
6H	11.7	12.5	12.1	12.8	13.2	13.2	14.0	13.6	14.4	14.7
8H	11.7	12.4	12.1	12.8	13.1	13.3	14.0	13.7	14.4	14.8
12H	11.6	12.3	12.1	12.7	13.1	13.4	14.0	13.8	14.4	14.8
8H 4H	11.8	12.5	12.2	12.9	13.2	13.1	13.8	13.5	14.1	14.5
6H	11.7	12.3	12.2	12.7	13.1	13.3	13.9	13.7	14.3	14.7
8H	11.7	12.2	12.2	12.7	13.1	13.4	13.9	13.8	14.3	14.8
12H	11.7	12.1	12.2	12.6	13.0	13.5	14.0	14.0	14.4	14.9
12H 4H	11.8	12.4	12.2	12.8	13.2	13.0	13.7	13.4	14.1	14.5
6H	11.7	12.2	12.2	12.7	13.1	13.2	13.8	13.7	14.2	14.6
8H	11.7	12.2	12.2	12.6	13.1	13.4	13.8	13.9	14.3	14.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.7 / - 0.9					+ 0.5 / - 0.6				
1.5H	+ 0.3 / - 0.4					+ 0.2 / - 0.4				
2.0H	+ 0.9 / - 2.2					+ 0.8 / - 0.8				

CIE Pub.117, 5812 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 6.1)

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2019 9/16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity:65.0%  
 Test Distance:7.280m [K=1.0000]  
 Remarks:

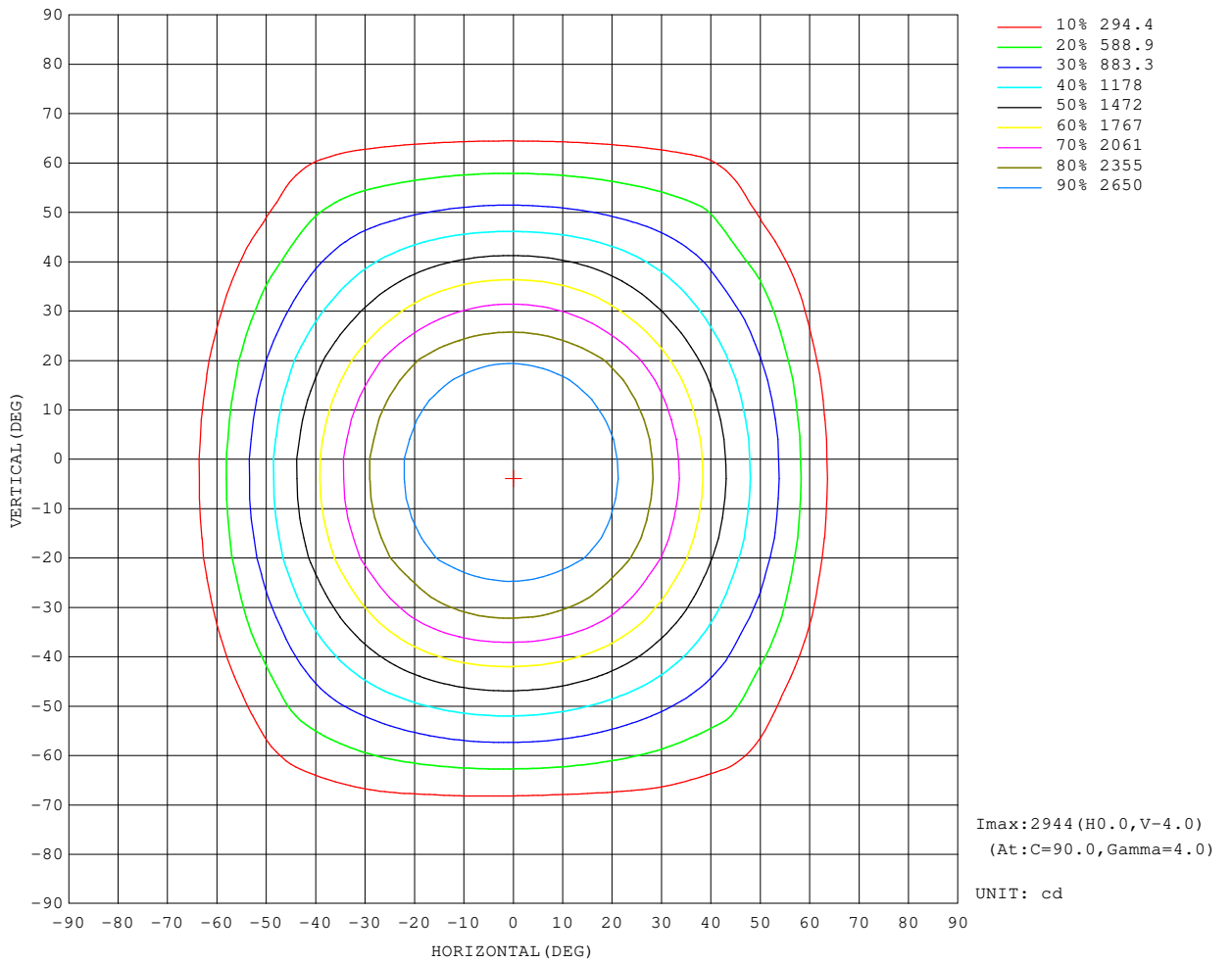
**UTILIZATION FACTORS TABLE**

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	66	56	50	65	56	50	64	55	50	44
0.80	76	66	60	75	66	60	74	65	60	54
1.00	84	75	69	83	75	69	81	76	68	63
1.25	91	82	77	90	82	76	87	80	76	69
1.50	95	87	82	94	87	81	91	85	80	74
2.00	101	94	89	99	93	89	96	91	87	80
2.50	104	98	93	102	97	92	99	94	90	83
3.00	107	101	97	105	100	96	101	97	94	86
4.00	110	105	102	107	103	100	103	100	98	89
5.00	111	108	105	109	106	103	105	102	100	91
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2019 9/16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 7.280m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

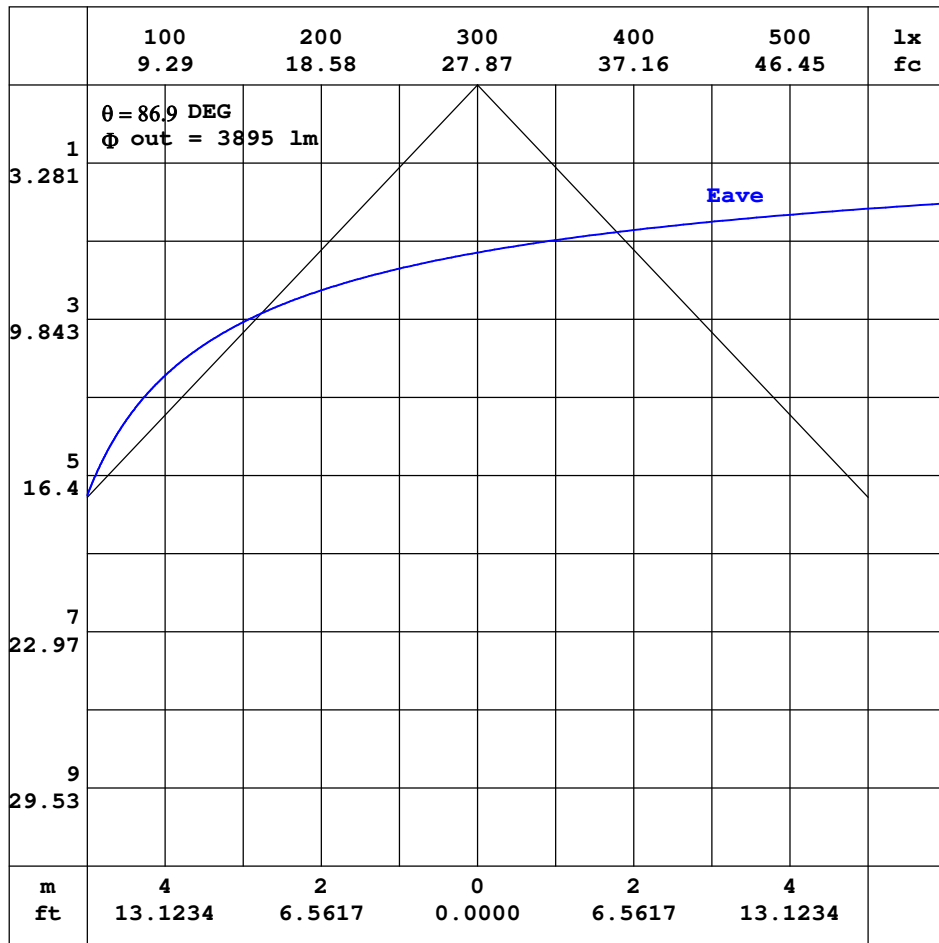


C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2019 9/16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 7.280m [K=1.0000]  
 Remarks:



AAI CURVES

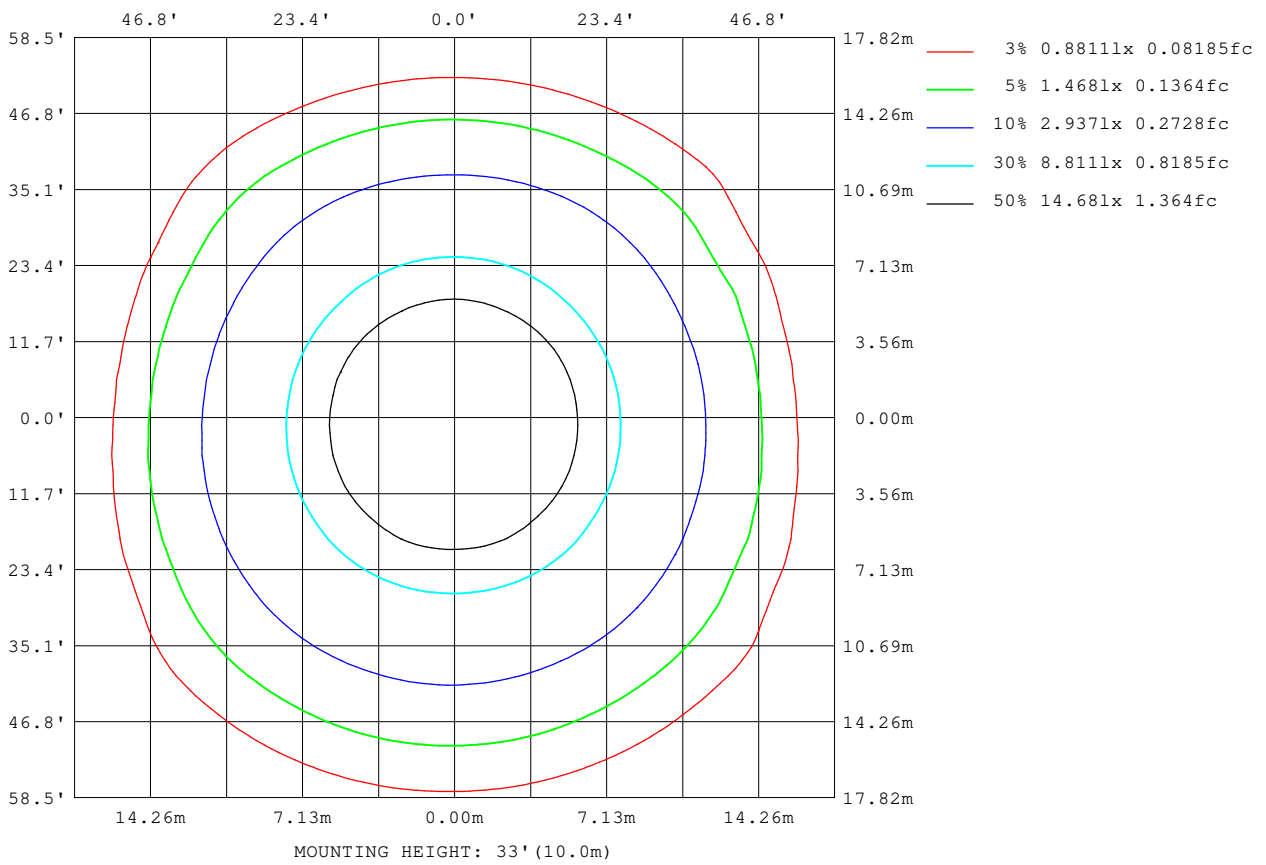


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2019 9/16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 7.280m [K=1.0000]  
 Remarks:

ISOLUX DIAGRAM



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2019 9/16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 7.280m [K=1.0000]  
 Remarks:

## LED Avg.L Report

Test:U:221.4V I:0.2493A P:53.47W PF:0.9688 Freq:49.99Hz Lamp Flux:5812.39x1 lm		

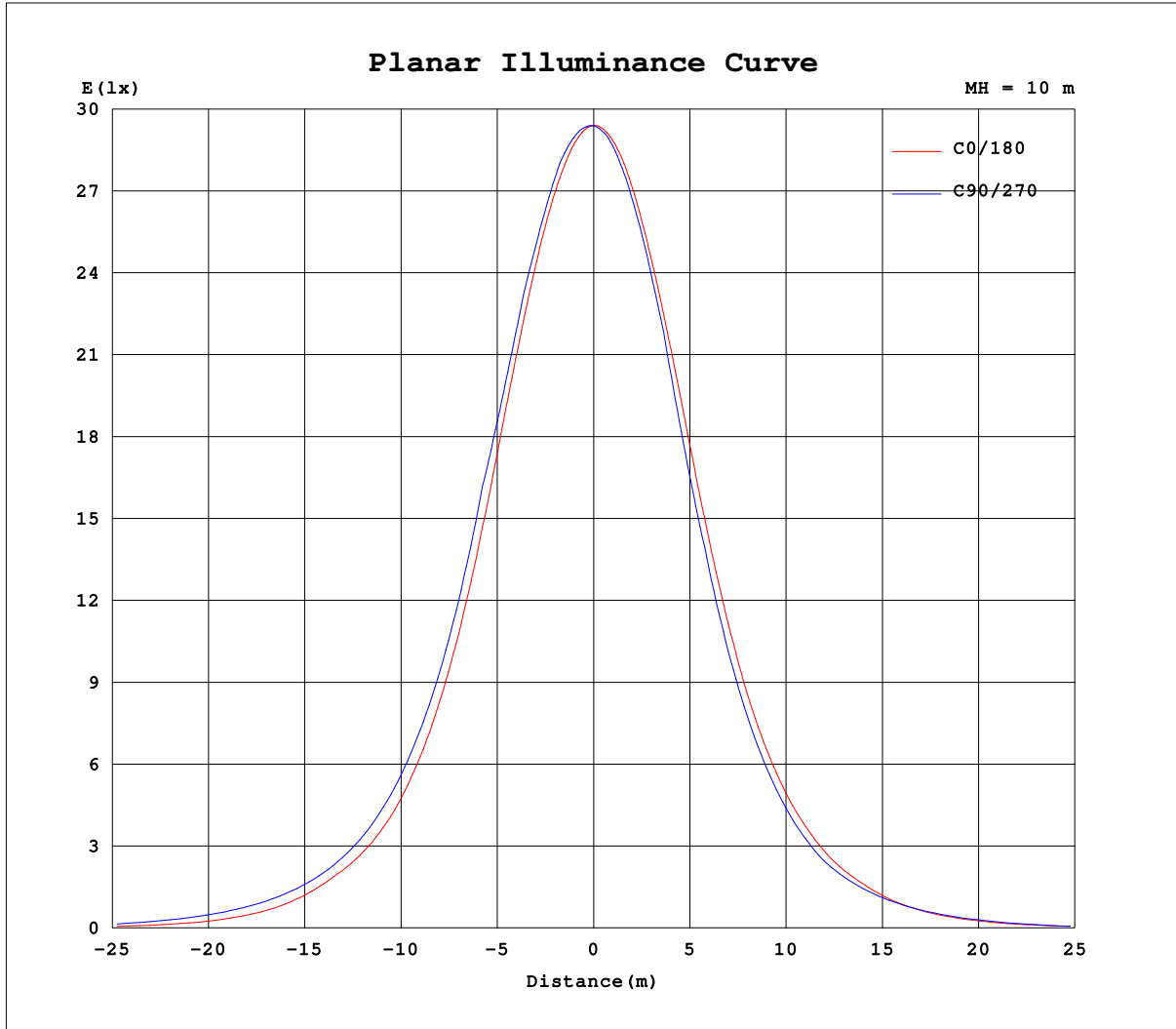
AvgL	cd/m2
L_0~180 (65) av	1570
L_0~180 (75) av	434
L_0~180 (85) av	291
L_90~270 (65) av	2481
L_90~270 (75) av	980
L_90~270 (85) av	1023
L_45 (65) av	3152
L_45 (75) av	827
L_45 (85) av	611

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2019 9/16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity:65.0%  
 Test Distance:7.280m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2019 9/16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 7.280m [K=1.0000]  
 Remarks:







