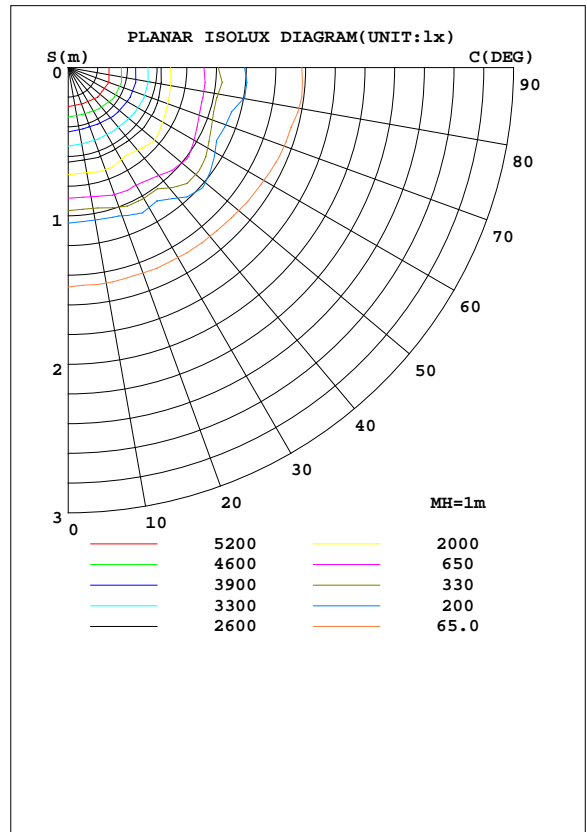
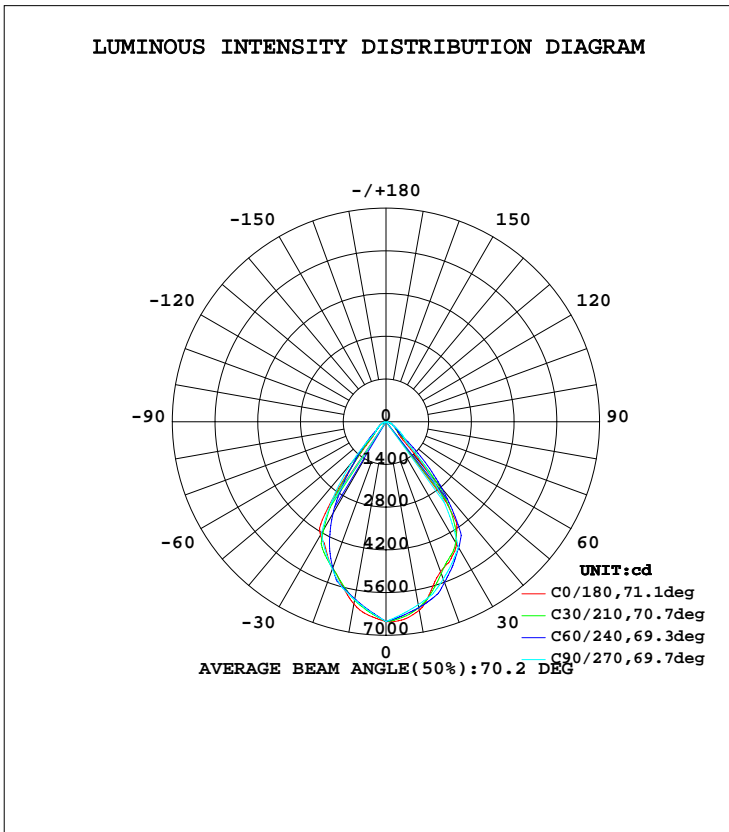


EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.0V I:0.4540A P:100.0W PF:0.9000 Lamp Flux:7679.44x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:320mm	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 76.79 lm/W			
MODEL	M5-6-100-30-90	Imax(cd)	6558	S/MH(C0/180)	0.99
NOMINAL POWER(W)	100	LOR(%)	100.0	S/MH(C90/270)	0.99
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	7679.4	η UP, DN(C0-180)	0.0, 53.9
NOMINAL FLUX(lm)	7679.44	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 46.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)		η down(%)	100.0	CIBSE SHR MAX	1.05



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2014-08-29

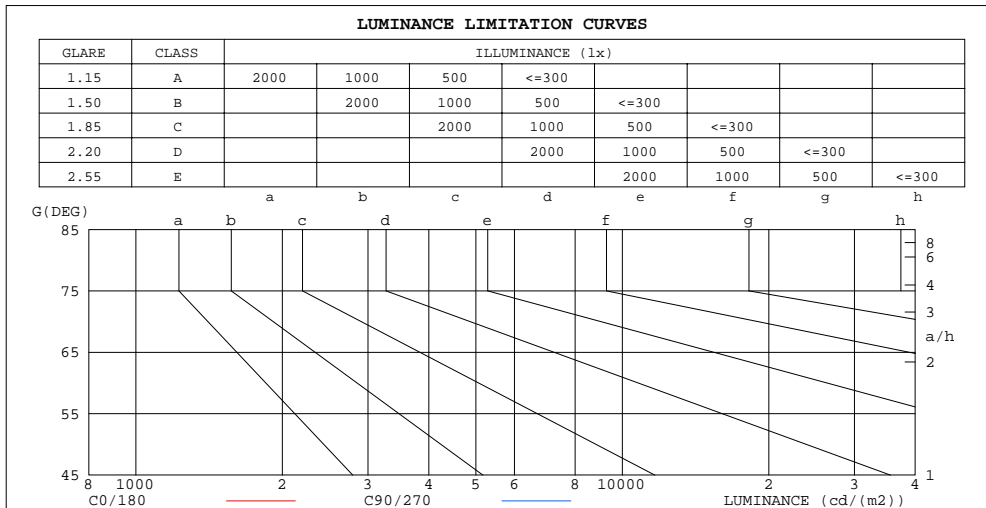
γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity: 65.0%
 Test Distance: 7.900m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ZONAL FLUX DIAGRAM
AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	lum, lamp
5	6506	6396	6317	6252	6374	6229	6233	6312	0- 5	153.0	153.0	1.99,1.99
10	6277	6189	6089	5902	6064	5905	5920	5998	5- 10	440.9	593.9	7.73,7.73
15	5719	5886	5861	5503	5556	5563	5608	5588	10- 15	691.6	1286	16.7,16.7
20	5231	5529	5488	5081	5112	5219	5148	5213	15- 20	893.5	2179	28.4,28.4
25	4998	5027	5115	4699	4647	4426	4689	4552	20- 25	1049	3228	42,42
30	4618	4599	4742	4345	4295	3301	4230	3565	25- 30	1145	4372	56.9,56.9
35	4025	4216	3481	3378	2909	1822	2988	2501	30- 35	1114	5486	71.4,71.4
40	2084	3212	2220	1989	1019	679.9	1746	1040	35- 40	834.6	6321	82.3,82.3
45	657.8	1668	958.6	992.0	526.5	503.1	503.7	643.3	40- 45	469.2	6790	88.4,88.4
50	486.9	820.0	742.9	525.6	401.3	381.1	410.0	480.1	45- 50	251.5	7042	91.7,91.7
55	384.2	396.1	527.2	375.8	306.5	282.5	316.2	363.4	50- 55	184.2	7226	94.1,94.1
60	297.3	308.8	311.6	291.8	230.0	215.1	222.4	282.5	55- 60	146.7	7372	96,96
65	222.3	231.3	247.8	217.7	168.5	154.2	170.1	207.8	60- 65	113.5	7486	97.5,97.5
70	161.6	168.6	183.9	158.1	117.6	104.1	117.8	145.4	65- 70	87.16	7573	98.6,98.6
75	109.4	118.7	120.1	110.5	74.32	63.54	65.49	94.18	70- 75	62.25	7635	99.4,99.4
80	63.89	62.25	0	57.37	37.08	24.03	0	41.20	75- 80	34.81	7670	99.9,99.9
85	25.09	0	0	0	4.573	0	0	0	80- 85	8.588	7679	100,100
90	0.3938	0	0	0	0.3506	0	0	0	85- 90	0.6041	7679	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	239923	0
80	306584	0
75	352130	386727
70	393679	448158
65	438331	488540
60	495537	519306
55	558174	766025
50	631280	963141
45	775235	1129697

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2014-08-29

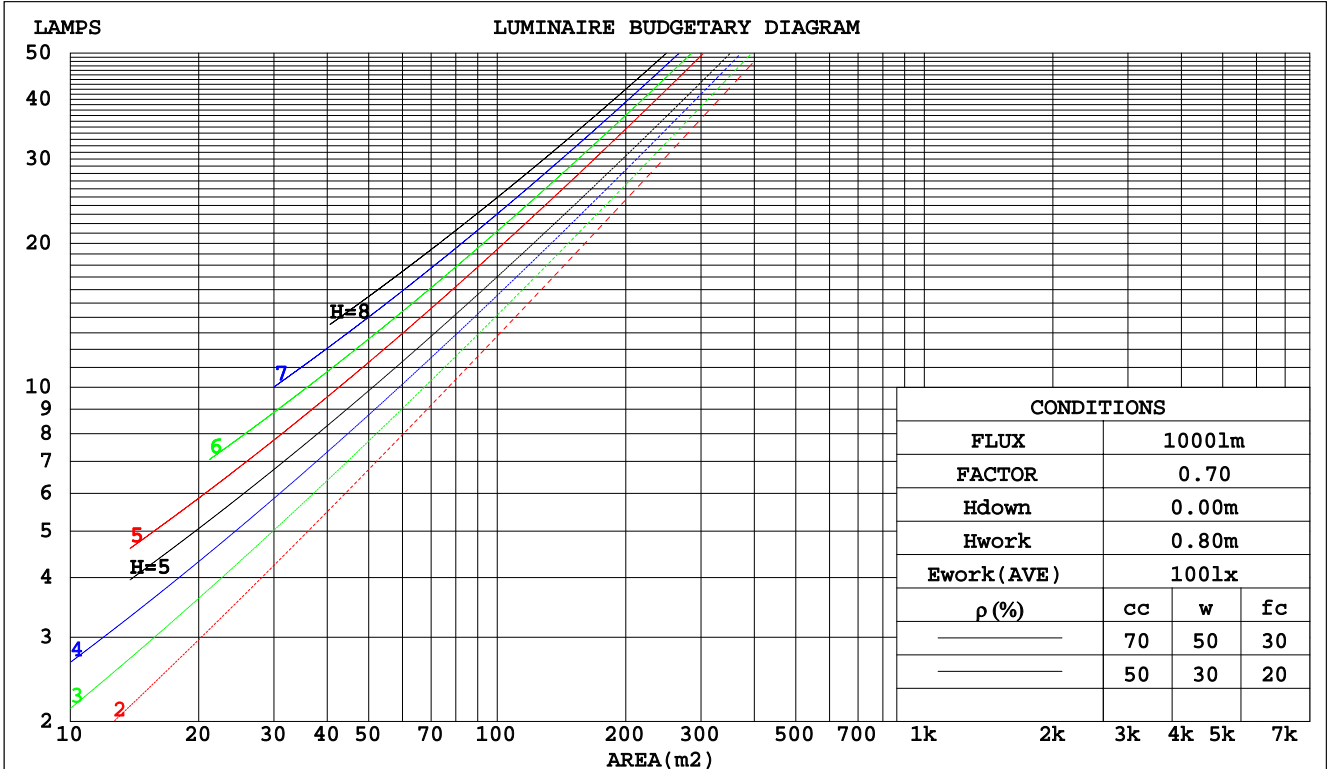
γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.288
Humidity: 65.0%
Test Distance: 7.900m [K=1.0000]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.0V I:0.4540A P:100.0W PF:0.9000 Lamp Flux:7679.44x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:320mm	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																0
pfc																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	1.09	1.06	1.04	1.07	1.05	1.02	1.03	1.01	.99	.99	.98	.96	.96	.95	.93	.91
2.0	1.00	.96	.92	.98	.94	.91	.95	.92	.89	.92	.89	.87	.89	.87	.85	.83
3.0	.92	.86	.82	.91	.85	.81	.88	.84	.80	.85	.82	.79	.83	.80	.77	.76
4.0	.85	.79	.74	.84	.78	.73	.82	.76	.72	.79	.75	.72	.77	.74	.71	.69
5.0	.79	.72	.67	.78	.71	.67	.76	.70	.66	.74	.69	.65	.72	.68	.65	.63
6.0	.73	.66	.61	.72	.66	.61	.70	.65	.61	.69	.64	.60	.68	.63	.60	.58
7.0	.68	.61	.56	.67	.61	.56	.66	.60	.56	.65	.59	.56	.63	.59	.55	.54
8.0	.63	.57	.52	.63	.56	.52	.62	.56	.52	.60	.55	.51	.59	.55	.51	.50
9.0	.59	.53	.48	.59	.52	.48	.58	.52	.48	.57	.52	.48	.56	.51	.48	.46
10.0	.56	.49	.45	.55	.49	.45	.54	.49	.45	.53	.48	.45	.53	.48	.44	.43



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2014-08-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.900m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

WEC AND CCEC

Test:U:220.0V I:0.4540A P:100.0W PF:0.9000 Lamp Flux:7679.44x1 lm														
NAME:					TYPE:LED					WEIGHT:				
SPEC.:					DIM.:					SERIAL No.:				
MFR.:					SUR.:320mm					PROTECTION 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	.205	.117	.037	.198	.113	.036	.186	.106	.034	.174	.100	.032	.163	.095	.030	
2.0	.198	.108	.033	.192	.106	.033	.181	.101	.031	.171	.096	.030	.162	.092	.029	
3.0	.188	.100	.030	.183	.098	.030	.174	.094	.029	.165	.091	.028	.157	.087	.027	
4.0	.178	.093	.027	.174	.091	.027	.166	.088	.026	.158	.085	.026	.151	.082	.025	
5.0	.169	.086	.025	.165	.085	.025	.158	.082	.024	.152	.080	.024	.145	.078	.023	
6.0	.161	.081	.023	.157	.079	.023	.151	.077	.023	.145	.075	.022	.140	.073	.022	
7.0	.153	.076	.021	.150	.075	.021	.144	.073	.021	.139	.071	.021	.134	.070	.020	
8.0	.145	.071	.020	.143	.070	.020	.138	.069	.020	.133	.067	.019	.128	.066	.019	
9.0	.139	.067	.019	.136	.066	.019	.132	.065	.018	.127	.064	.018	.123	.063	.018	
10.0	.132	.063	.018	.130	.063	.018	.126	.062	.017	.122	.061	.017	.119	.060	.017	

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	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.173	.157	.143	.148	.135	.123	.101	.093	.085	.058	.054	.049	.019	.017	.016	
2.0	.160	.132	.109	.137	.114	.095	.094	.079	.066	.054	.046	.039	.017	.015	.013	
3.0	.149	.114	.086	.128	.098	.074	.088	.068	.052	.051	.040	.031	.016	.013	.010	
4.0	.139	.099	.069	.120	.086	.060	.082	.060	.042	.048	.035	.025	.015	.011	.008	
5.0	.131	.088	.056	.113	.076	.049	.078	.053	.035	.045	.031	.021	.015	.010	.007	
6.0	.124	.079	.047	.107	.069	.041	.074	.048	.029	.043	.028	.017	.014	.009	.006	
7.0	.118	.072	.039	.102	.062	.034	.070	.044	.024	.041	.026	.015	.013	.008	.005	
8.0	.112	.066	.034	.097	.057	.030	.067	.040	.021	.039	.024	.012	.013	.008	.004	
9.0	.107	.061	.029	.092	.053	.026	.064	.037	.018	.037	.022	.011	.012	.007	.004	
10.0	.102	.056	.026	.088	.049	.023	.061	.034	.016	.036	.020	.010	.012	.007	.003	

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2014-08-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.900m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

UGR(Unified Glare Rating) Table

Test:U:220.0V I:0.4540A P:100.0W PF:0.9000 Lamp Flux:7679.44x1 lm										
NAME:					TYPE:LED			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.:					SUR.:320mm			PROTECTION 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	34.8	35.9	35.0	36.1	36.2	35.7	36.8	35.9	37.0	37.2
3H	35.0	36.0	35.3	36.2	36.4	35.9	36.9	36.2	37.1	37.3
4H	35.1	36.0	35.4	36.3	36.5	36.0	37.0	36.3	37.2	37.4
6H	35.2	36.1	35.5	36.3	36.6	35.9	36.8	36.3	37.1	37.3
8H	35.2	36.0	35.5	36.3	36.6	35.9	36.8	36.2	37.0	37.3
12H	35.2	36.0	35.5	36.3	36.5	35.9	36.7	36.2	37.0	37.2
4H 2H	34.8	35.7	35.0	35.9	36.2	35.6	36.6	35.9	36.8	37.0
3H	35.1	35.9	35.4	36.2	36.5	36.0	36.8	36.3	37.1	37.3
4H	35.3	36.0	35.6	36.3	36.7	36.1	36.9	36.5	37.2	37.5
6H	35.4	36.1	35.8	36.4	36.8	36.1	36.8	36.5	37.1	37.4
8H	35.5	36.1	35.9	36.4	36.8	36.1	36.7	36.4	37.0	37.4
12H	35.5	36.0	35.9	36.4	36.8	36.0	36.6	36.4	36.9	37.3
8H 4H	35.3	35.9	35.7	36.3	36.7	36.1	36.7	36.5	37.1	37.5
6H	35.6	36.1	36.0	36.4	36.9	36.1	36.6	36.5	37.0	37.4
8H	35.6	36.1	36.1	36.5	36.9	36.1	36.5	36.5	36.9	37.4
12H	35.7	36.1	36.2	36.5	37.0	36.0	36.4	36.5	36.8	37.3
12H 4H	35.3	35.8	35.7	36.2	36.6	36.1	36.6	36.5	37.0	37.4
6H	35.5	36.0	36.0	36.4	36.8	36.1	36.5	36.5	36.9	37.4
8H	35.6	36.0	36.1	36.4	36.9	36.0	36.4	36.5	36.9	37.3
Variations with the observer position at spacings:										
S = 1.0H	+ 1.8 / - 2.8					+ 2.1 / - 2.8				
1.5H	+ 3.4 / - 2.5					+ 2.8 / - 2.6				
2.0H	+ 0.7 / - 0.5					+ 1.6 / - 1.2				

CIE Pub.117 Corrected 7679 lm Total Lamp Luminous Flux.(8log(F/F0) = 7.1)

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2014-08-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.900m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

UTILIZATION FACTORS TABLE

Test:U:220.0V I:0.4540A P:100.0W PF:0.9000 Lamp Flux:7679.44x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:320mm	PROTECTION 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	81	73	68	80	73	68	79	72	68	64
0.80	89	82	77	88	81	77	87	81	77	72
1.00	94	88	83	93	87	83	92	87	82	78
1.25	99	93	89	98	92	88	96	91	87	83
1.50	102	97	92	101	96	92	99	94	91	86
2.00	106	101	97	104	100	96	102	98	95	89
2.50	108	103	100	106	102	99	103	100	97	91
3.00	110	106	103	108	104	102	105	102	99	93
4.00	112	109	106	110	107	105	107	104	102	95
5.00	114	111	109	112	109	107	108	106	104	96
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:DAMIN
 Test Date:2014-08-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.900m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

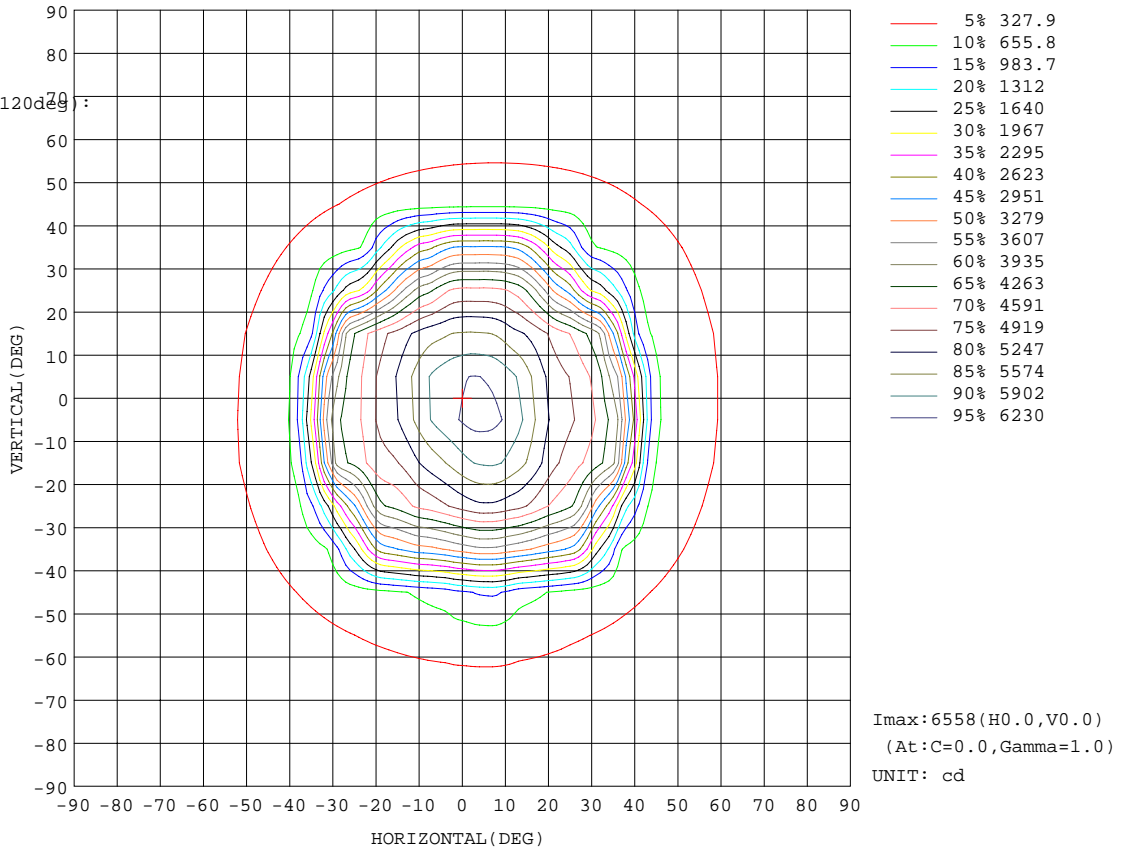
Test:U:220.0V I:0.4540A P:100.0W PF:0.9000 Lamp Flux:7679.44x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:320mm	PROTECTION ANGLE:

Conical surface Flux(90deg):

6790.1 lm
 %lum = 88.4%
 %lamp = 88.4%

Conical surface Flux(120deg):

7372.5 lm
 %lum = 96.0%
 %lamp = 96.0%



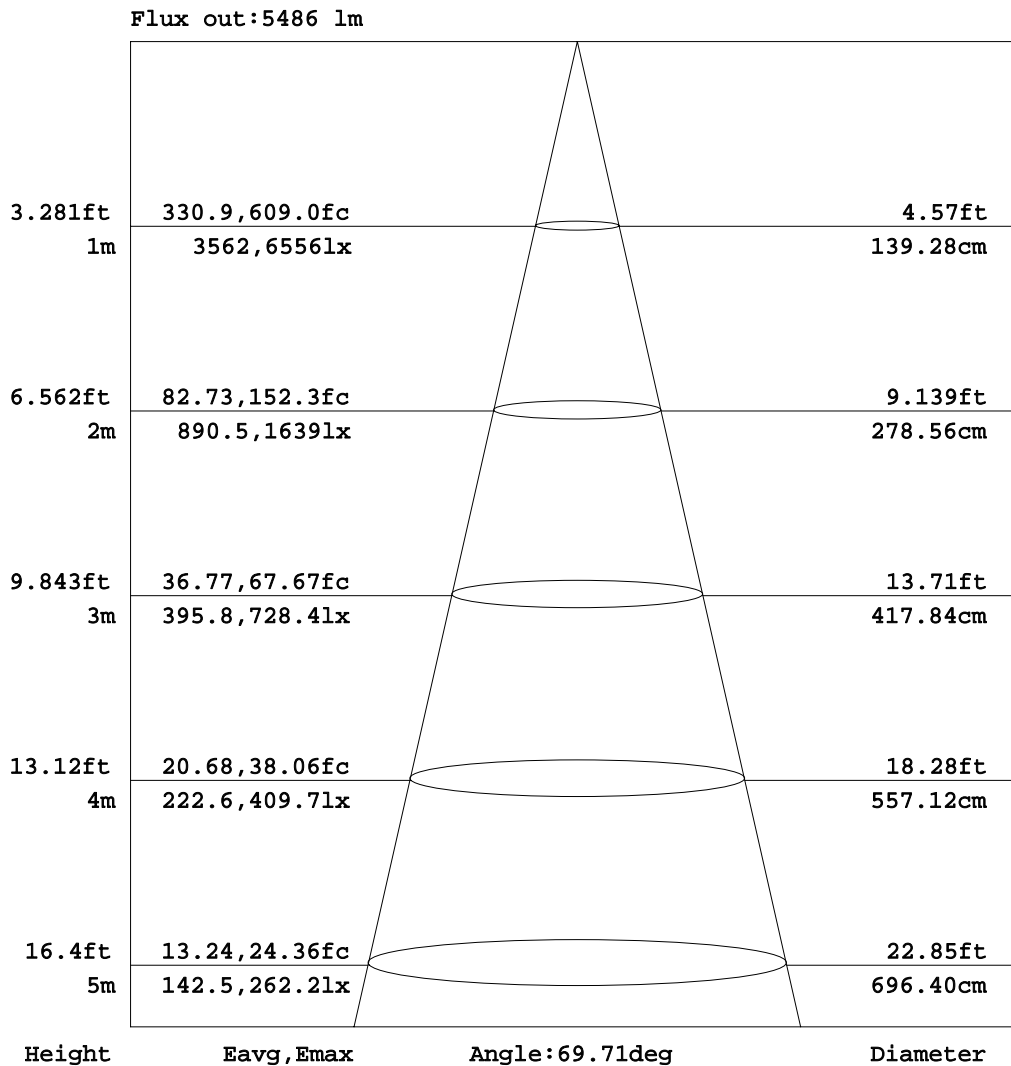
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2014-08-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.900m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

AAI Figure

Test:U:220.0V I:0.4540A P:100.0W PF:0.9000 Lamp Flux:7679.44x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:320mm	PROTECTION ANGLE:



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

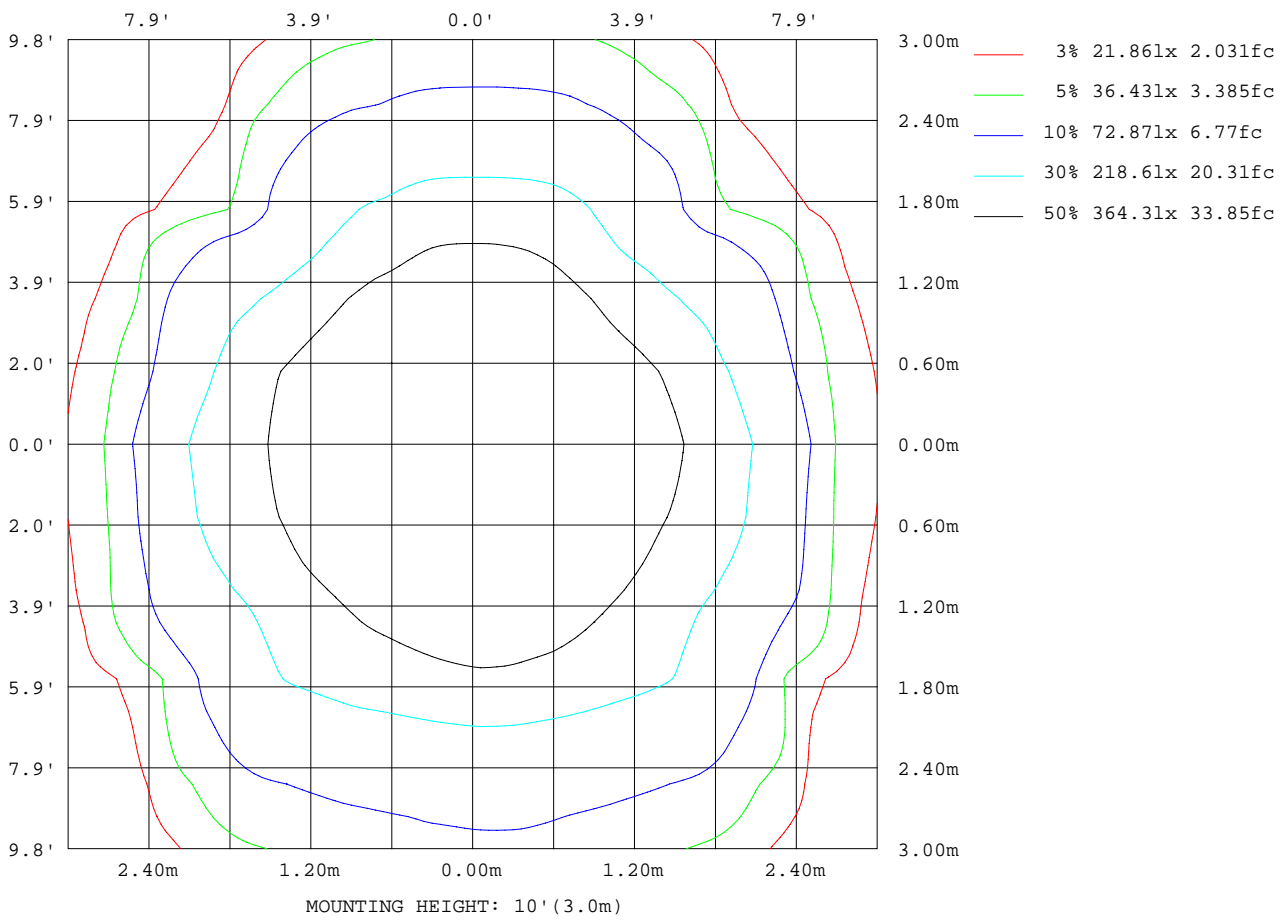
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2014-08-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.900m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

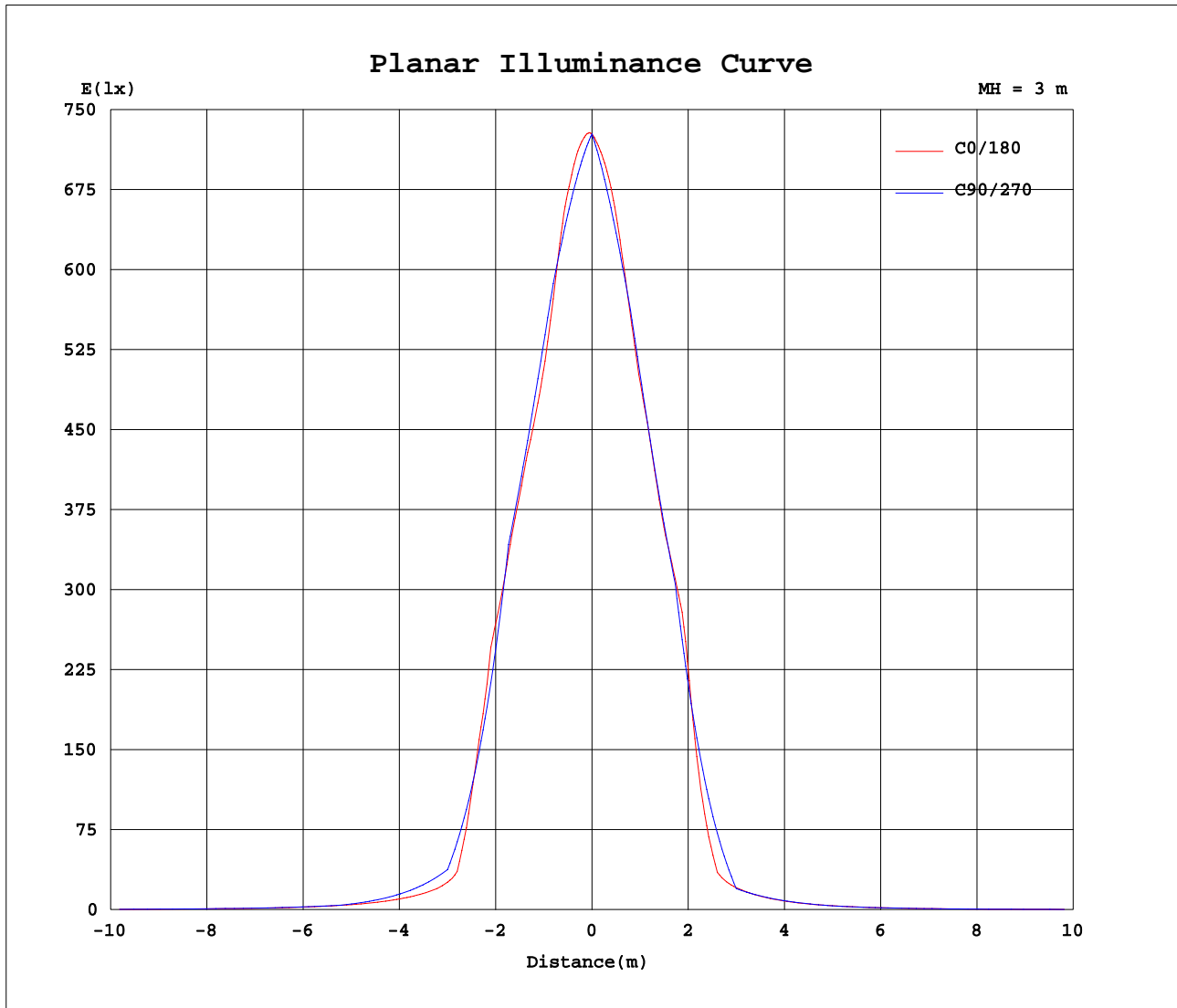
Test:U:220.0V I:0.4540A P:100.0W PF:0.9000 Lamp Flux:7679.44x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:320mm	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2014-08-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.900m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2014-08-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.288
Humidity: 65.0%
Test Distance: 7.900m [K=1.0000]
Remarks:

