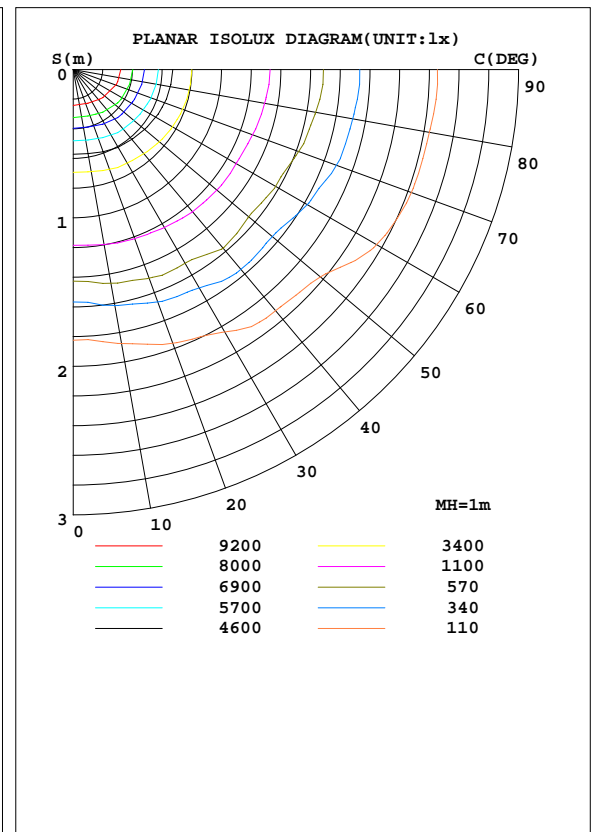
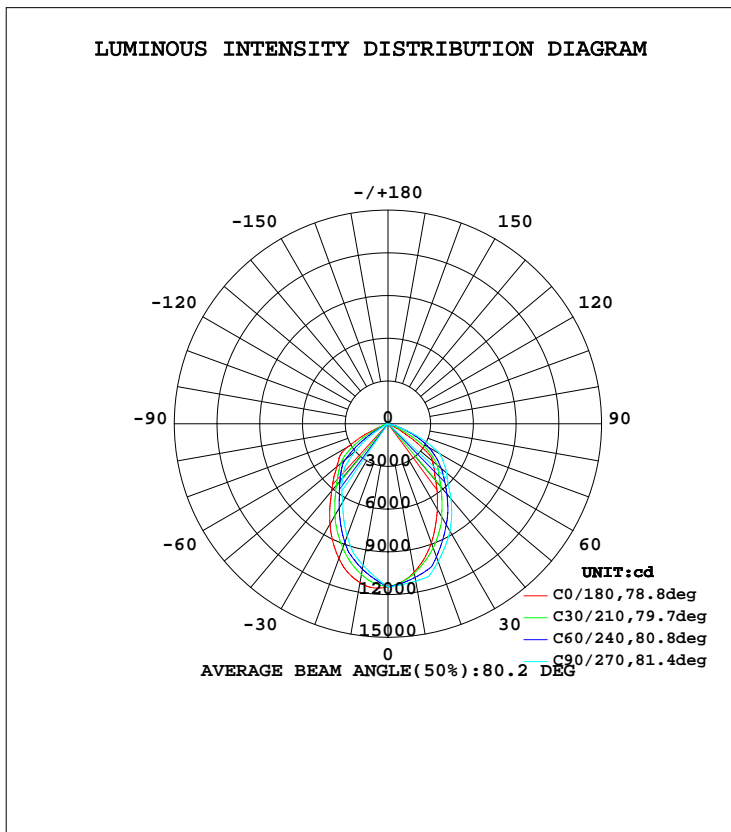


EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.0V I:0.9000A P:200.0W PF:1.000 Lamp Flux:19112.0x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:495mm	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 95.56 lm/W			
MODEL		Imax(cd)	11572	S/MH(C0/180)	1.09
NOMINAL POWER(W)	200	LOR(%)	100.0	S/MH(C90/270)	0.90
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	19112	η UP, DN(C0-180)	0.0, 57.5
NOMINAL FLUX(lm)	19112.0	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 42.5
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)		η down(%)	100.0	CIBSE SHR MAX	1.15



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DALU
 Test Date:2014-10-20

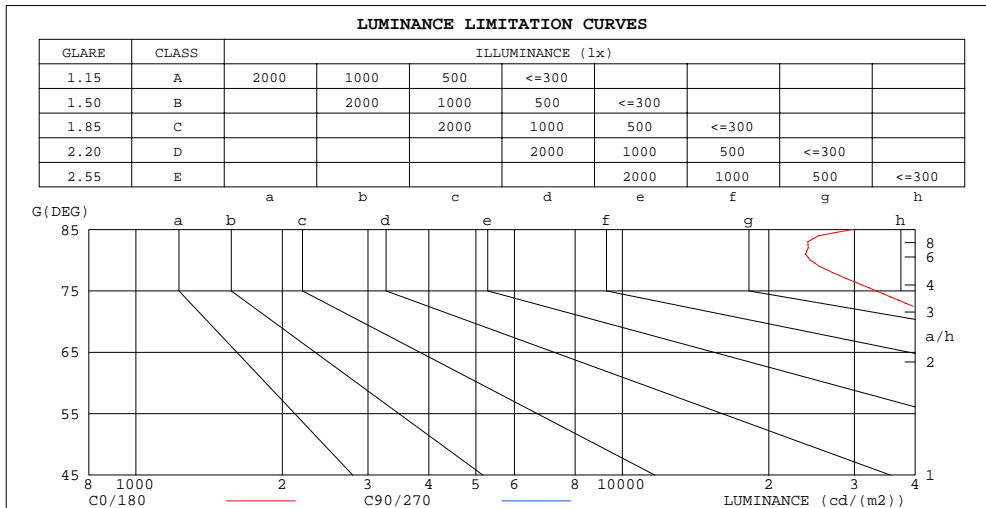
γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.000m [K=1.0000]
 Remarks:

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	1115	1119	1134	1146	1157	1107	1078	1079	0- 5	269.4	269.4	1.33,1.33
10	1058	1081	1122	1131	1133	1054	1009	1001	5- 10	781.4	1051	5.2,5.2
15	981.7	1030	1110	1099	1083	987.8	941.0	914.6	10- 15	1236	2287	11.3,11.3
20	890.1	973.0	1030	1057	1008	913.3	838.8	824.0	15- 20	1607	3894	19.3,19.3
25	789.4	881.0	950.9	968.8	915.7	812.9	736.7	722.7	20- 25	1864	5757	28.5,28.5
30	693.8	782.5	871.5	873.8	814.8	713.4	634.6	629.8	25- 30	2014	7771	38.5,38.5
35	605.0	693.0	779.7	777.9	711.5	619.2	565.9	545.9	30- 35	2075	9846	48.7,48.7
40	523.4	611.3	687.8	685.7	615.7	537.0	497.2	476.7	35- 40	2067	11913	59,59
45	463.8	537.6	596.0	598.0	539.4	478.4	428.6	387.8	40- 45	2003	13916	68.9,68.9
50	405.6	471.0	537.2	524.5	468.9	407.8	295.8	280.2	45- 50	1884	15800	78.2,78.2
55	295.3	418.9	478.4	457.6	420.2	330.9	163.1	154.9	50- 55	1666	17466	86.5,86.5
60	130.7	289.3	419.6	363.4	332.0	187.7	30.37	77.75	55- 60	1304	18771	92.9,92.9
65	6.028	141.8	281.5	254.7	169.6	69.18	20.55	23.34	60- 65	836.0	19607	97.1,97.1
70	1.925	43.55	143.3	150.2	22.67	3.847	10.73	1.718	65- 70	421.8	20028	99.2,99.2
75	1.032	14.39	5.082	61.81	2.700	2.114	0.9078	0.9232	70- 75	148.8	20177	99.9,99.9
80	0.5072	1.118	0	2.201	1.445	0.6751	0	0.2445	75- 80	19.34	20197	100,100
85	0.3116	0	0	0	0.5995	0	0	0	80- 85	2.149	20199	100,100
90	0.4619	0	0	0	0.1878	0	0	0	85- 90	0.3907	20199	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:×10cd									UNIT:lm		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	29794	0
80	24340	0
75	33242	163621
70	46904	3490773
65	118856	5549881
60	2178545	6994096
55	4289812	6950768
50	5258790	6964267
45	5466451	7023399

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators: DALU
Test Date:2014-10-20

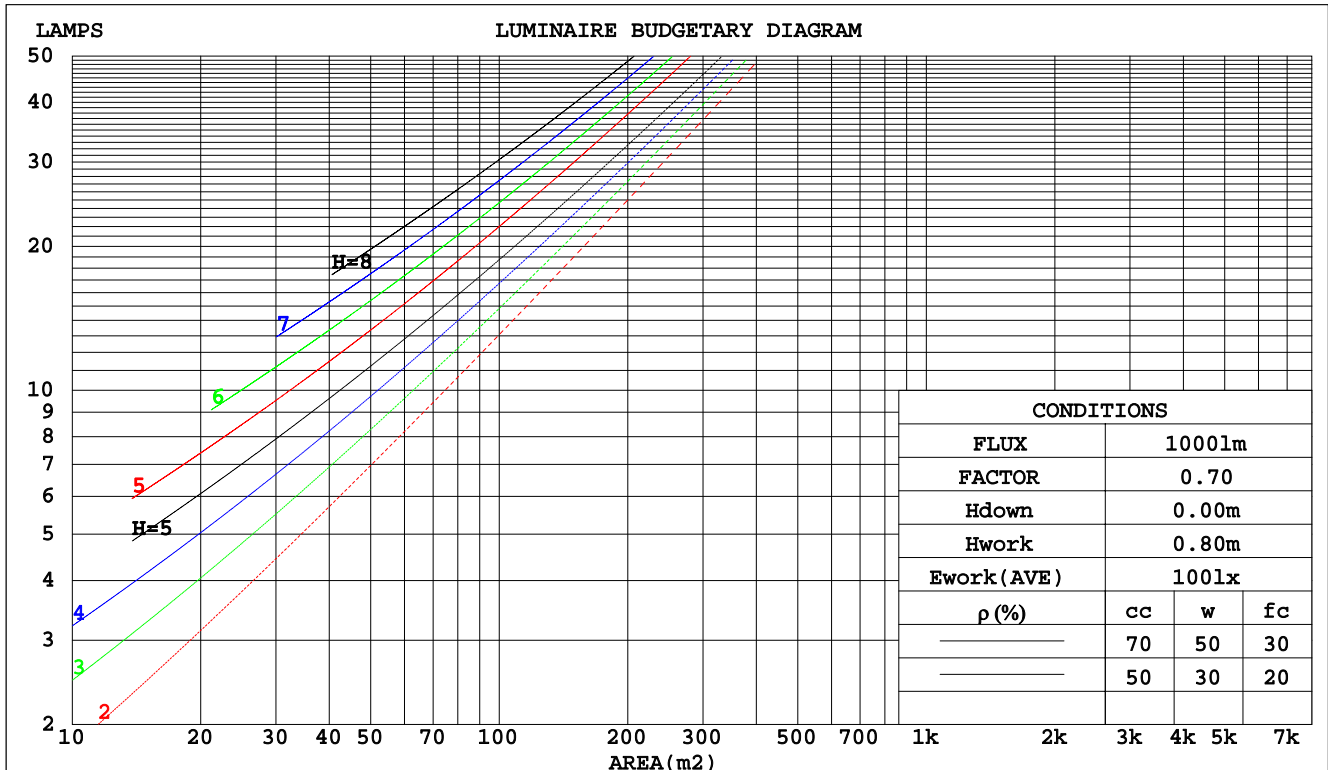
γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.288
Humidity:65.0%
Test Distance:7.000m [K=1.0000]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.0V I:0.9000A P:200.0W PF:1.000 Lamp Flux:19112.0x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:495mm	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	
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	.00
1.0	1.08	1.04	1.01	1.05	1.03	.00	1.01	.99	.97	.98	.96	.94	.94	.92	.91	.89
2.0	.97	.91	.86	.95	.90	.85	.91	.87	.84	.88	.85	.82	.85	.82	.80	.78
3.0	.87	.80	.74	.85	.79	.74	.82	.77	.73	.80	.75	.71	.77	.73	.70	.68
4.0	.78	.71	.65	.77	.70	.64	.74	.68	.64	.72	.67	.63	.70	.66	.62	.60
5.0	.71	.63	.57	.70	.62	.57	.68	.61	.56	.66	.60	.56	.64	.59	.55	.53
6.0	.64	.56	.51	.63	.56	.51	.62	.55	.50	.60	.54	.50	.59	.53	.49	.47
7.0	.59	.51	.45	.58	.51	.45	.57	.50	.45	.55	.49	.45	.54	.49	.44	.43
8.0	.54	.46	.41	.53	.46	.41	.52	.46	.41	.51	.45	.41	.50	.44	.40	.39
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	.39	.34	.44	.38	.34	.43	.38	.34	.32



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DALU
 Test Date:2014-10-20

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.000m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

WEC AND CCEC

Test:U:220.0V I:0.9000A P:200.0W PF:1.000 Lamp Flux:19112.0x1 lm														
NAME:					TYPE:LED					WEIGHT:				
SPEC.:					DIM.:					SERIAL No.:				
MFR.:					SUR.:495mm					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	.237	.135	.043	.230	.131	.042	.217	.124	.040	.205	.118	.038	.194	.112	.036	
2.0	.233	.128	.039	.227	.125	.039	.216	.120	.037	.206	.115	.036	.196	.111	.035	
3.0	.223	.119	.036	.218	.117	.035	.208	.113	.034	.199	.109	.033	.191	.106	.033	
4.0	.212	.110	.032	.207	.108	.032	.198	.105	.031	.190	.102	.031	.183	.099	.030	
5.0	.200	.102	.029	.196	.100	.029	.188	.098	.029	.181	.095	.028	.174	.093	.028	
6.0	.188	.094	.027	.185	.093	.027	.178	.091	.027	.171	.089	.026	.166	.087	.026	
7.0	.178	.088	.025	.174	.087	.025	.168	.085	.025	.163	.083	.024	.157	.082	.024	
8.0	.168	.082	.023	.165	.081	.023	.159	.080	.023	.154	.078	.023	.149	.077	.022	
9.0	.159	.077	.021	.156	.076	.021	.151	.075	.021	.146	.073	.021	.142	.072	.021	
10.0	.150	.072	.020	.148	.071	.020	.144	.070	.020	.139	.069	.020	.135	.068	.020	

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	.175	.157	.140	.150	.135	.121	.103	.093	.083	.059	.054	.049	.019	.017	.016	
2.0	.164	.132	.105	.141	.114	.091	.097	.079	.063	.056	.046	.037	.018	.015	.012	
3.0	.155	.114	.081	.133	.098	.070	.092	.068	.049	.053	.040	.029	.017	.013	.009	
4.0	.148	.100	.064	.127	.087	.056	.087	.060	.039	.050	.035	.023	.016	.012	.008	
5.0	.140	.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	.127	.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:DALU
 Test Date:2014-10-20

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.000m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

UGR(Unified Glare Rating) Table

Test:U:220.0V I:0.9000A P:200.0W PF:1.000 Lamp Flux:19112.0x1 lm										
NAME:					TYPE:LED			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.:					SUR.:495mm			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	41.5	42.8	41.8	43.0	43.2	44.0	45.3	44.2	45.5	45.7
3H	41.3	42.5	41.6	42.8	43.0	44.8	46.0	45.1	46.2	46.5
4H	41.2	42.4	41.5	42.6	42.9	44.8	45.9	45.1	46.1	46.4
6H	41.1	42.2	41.5	42.5	42.7	44.7	45.7	45.0	46.0	46.3
8H	41.1	42.1	41.4	42.4	42.7	44.6	45.6	44.9	45.9	46.2
12H	41.0	42.0	41.4	42.3	42.6	44.6	45.5	44.9	45.8	46.1
4H 2H	42.0	43.1	42.3	43.4	43.6	44.1	45.2	44.4	45.5	45.7
3H	41.8	42.8	42.1	43.1	43.4	45.0	46.0	45.3	46.3	46.6
4H	41.7	42.6	42.1	42.9	43.2	45.0	45.9	45.3	46.2	46.5
6H	41.6	42.4	42.0	42.7	43.1	44.9	45.7	45.3	46.0	46.4
8H	41.6	42.3	42.0	42.6	43.0	44.8	45.6	45.2	45.9	46.3
12H	41.5	42.2	41.9	42.6	43.0	44.8	45.4	45.2	45.8	46.2
8H 4H	41.7	42.4	42.1	42.7	43.1	44.8	45.6	45.2	45.9	46.3
6H	41.6	42.2	42.0	42.6	43.0	44.8	45.3	45.2	45.7	46.2
8H	41.5	42.1	42.0	42.5	42.9	44.7	45.2	45.2	45.6	46.1
12H	41.5	41.9	42.0	42.4	42.8	44.7	45.1	45.1	45.6	46.0
12H 4H	41.6	42.3	42.0	42.7	43.1	44.8	45.5	45.2	45.8	46.2
6H	41.5	42.1	42.0	42.5	42.9	44.7	45.2	45.2	45.6	46.1
8H	41.5	41.9	42.0	42.4	42.8	44.7	45.1	45.1	45.6	46.0
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.8					+ 0.4 / - 0.5				
1.5H	+ 1.1 / - 1.6					+ 0.3 / - 0.3				
2.0H	+ 1.5 / - 4.6					+ 0.8 / - 0.9				

CIE Pub.117 Corrected 20199 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.4)

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DALU
 Test Date:2014-10-20

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.000m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

UTILIZATION FACTORS TABLE

Test:U:220.0V I:0.9000A P:200.0W PF:1.000 Lamp Flux:19112.0x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:495mm	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	65	55	49	65	55	49	63	54	49	43
0.80	76	66	59	75	65	59	73	65	59	53
1.00	84	75	69	83	74	69	81	75	68	62
1.25	91	82	77	90	82	76	87	80	75	69
1.50	95	87	82	94	87	81	91	85	80	74
2.00	101	94	89	99	93	89	96	91	87	81
2.50	104	98	93	102	97	92	99	94	91	83
3.00	107	101	97	105	100	96	101	97	94	86
4.00	110	105	102	107	104	100	104	100	98	90
5.00	111	108	105	109	106	103	105	102	100	92
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:DALU
 Test Date:2014-10-20

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.000m [K=1.0000]
 Remarks:

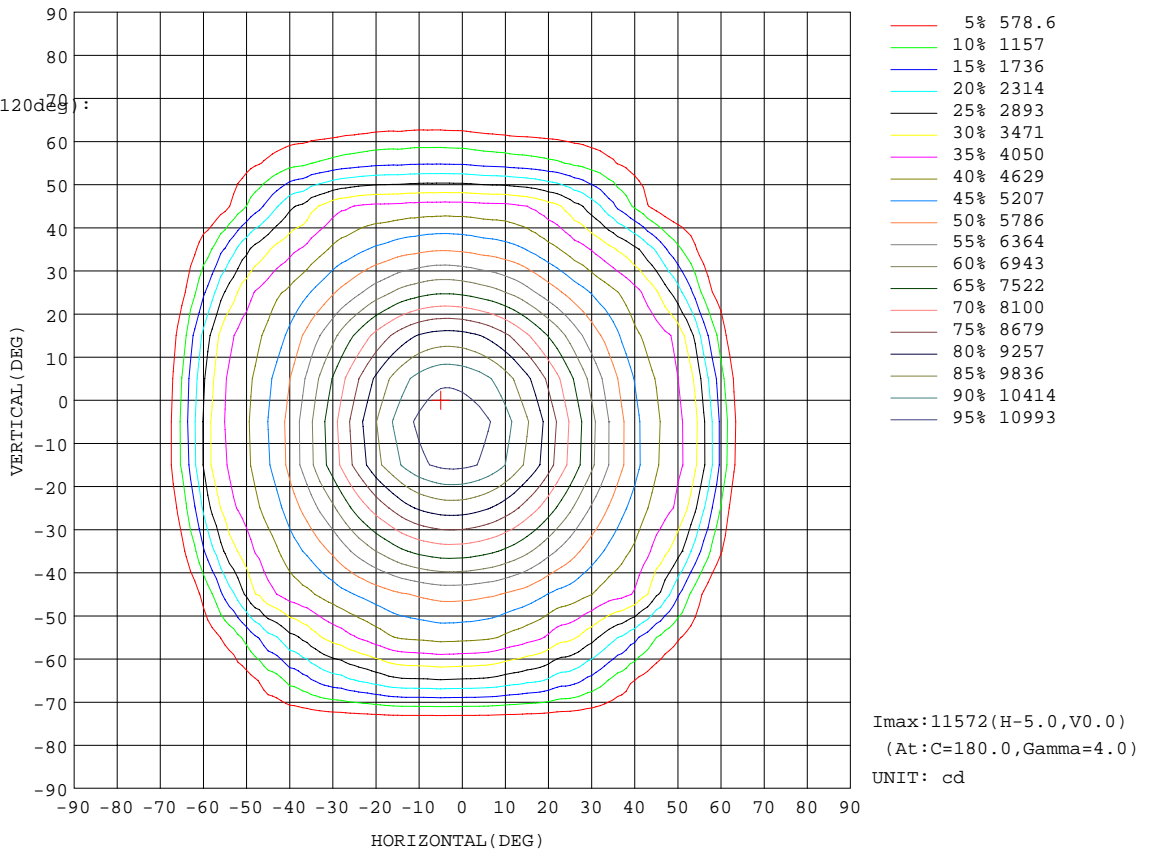
EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

Test:U:220.0V I:0.9000A P:200.0W PF:1.000 Lamp Flux:19112.0x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:495mm	PROTECTION ANGLE:

Conical surface Flux(90deg):
 13916 lm
 %lum = 68.9%
 %lamp = 68.9%

Conical surface Flux(120deg):
 18771 lm
 %lum = 92.9%
 %lamp = 92.9%



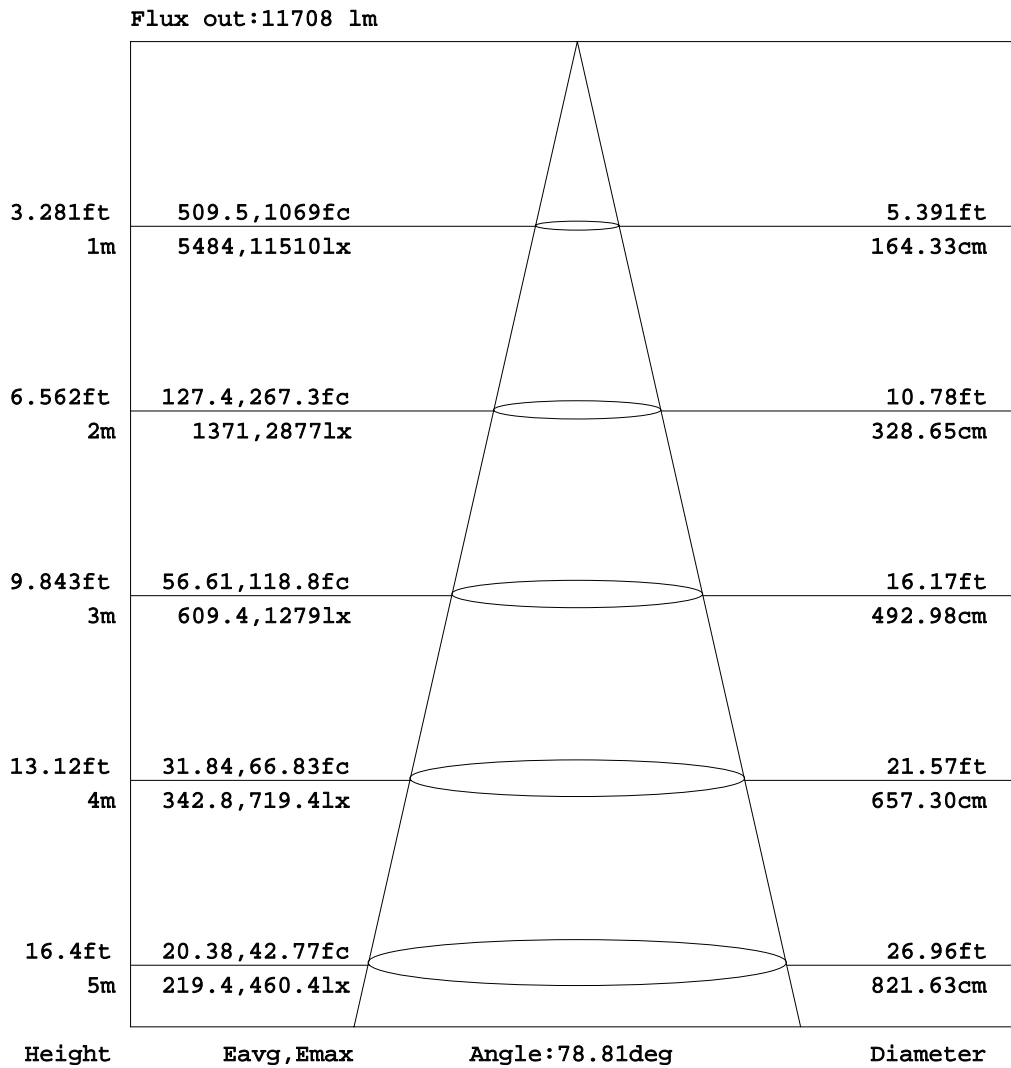
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DALU
 Test Date:2014-10-20

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.000m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

AAI Figure

Test:U:220.0V I:0.9000A P:200.0W PF:1.000 Lamp Flux:19112.0x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:495mm	PROTECTION ANGLE:



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

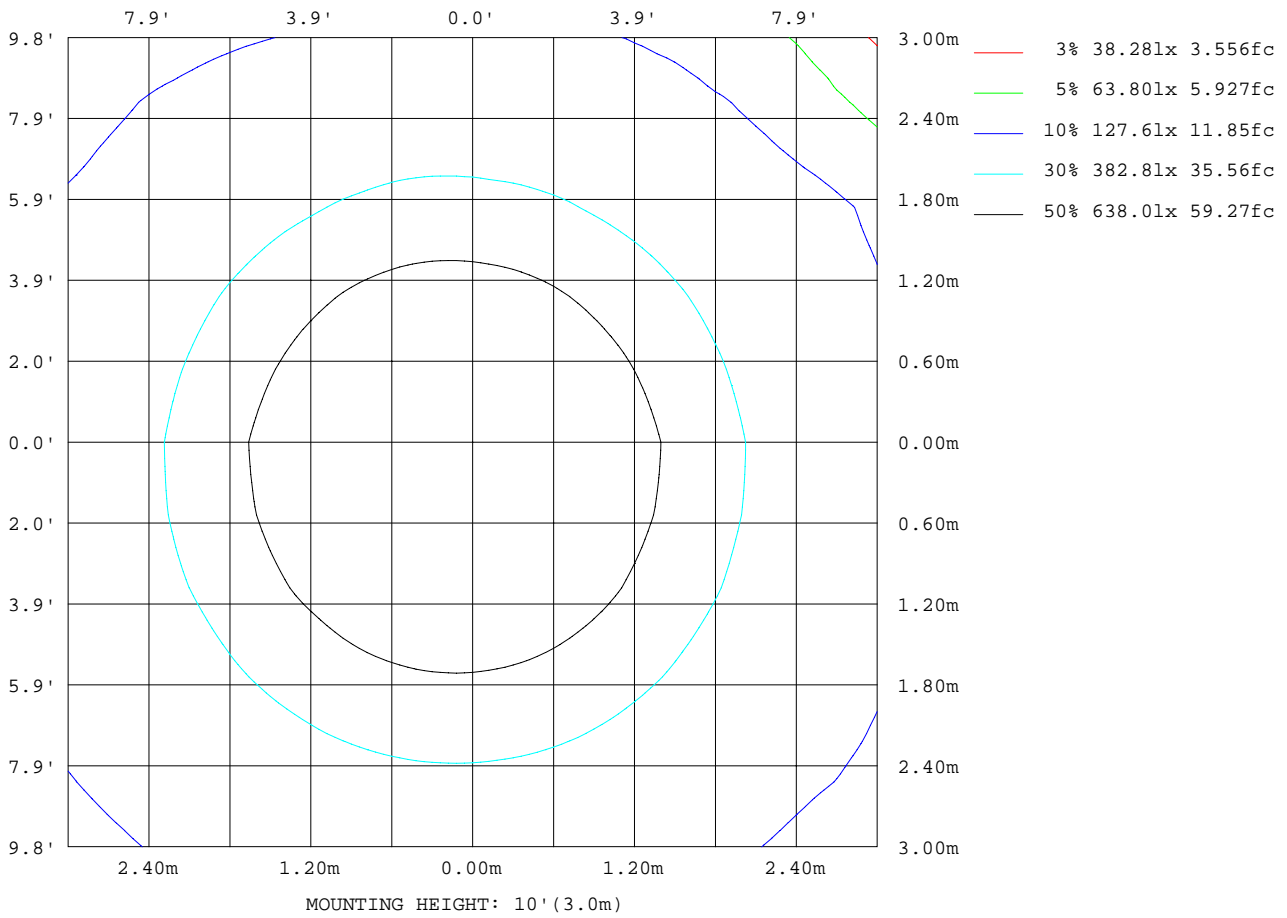
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DALU
 Test Date:2014-10-20

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.000m [K=1.0000]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

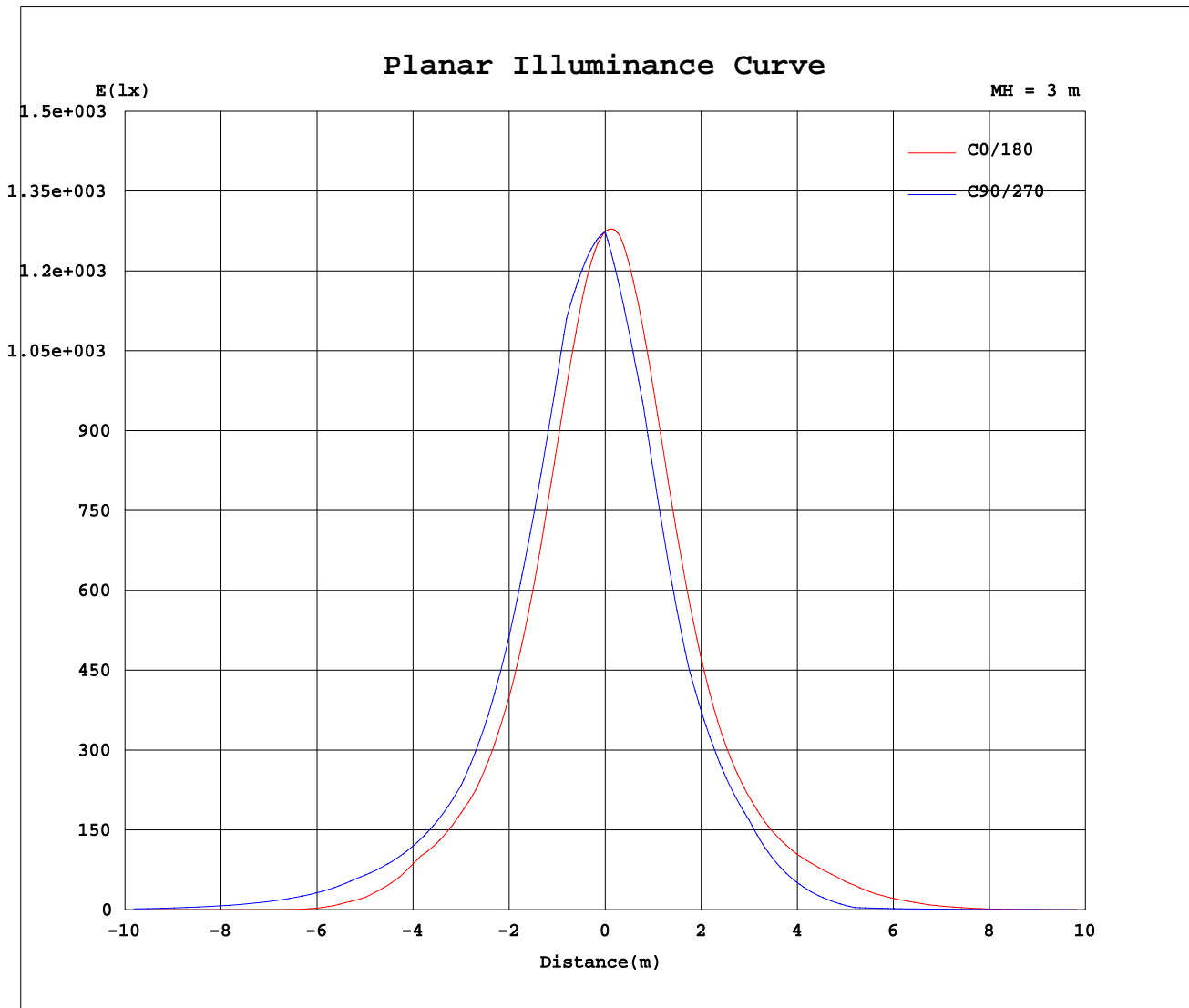
Test:U:220.0V I:0.9000A P:200.0W PF:1.000 Lamp Flux:19112.0x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:495mm	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DALU
 Test Date:2014-10-20

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity:65.0%
 Test Distance:7.000m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DALU
 Test Date: 2014-10-20

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.288
 Humidity: 65.0%
 Test Distance: 7.000m [K=1.0000]
 Remarks:

