

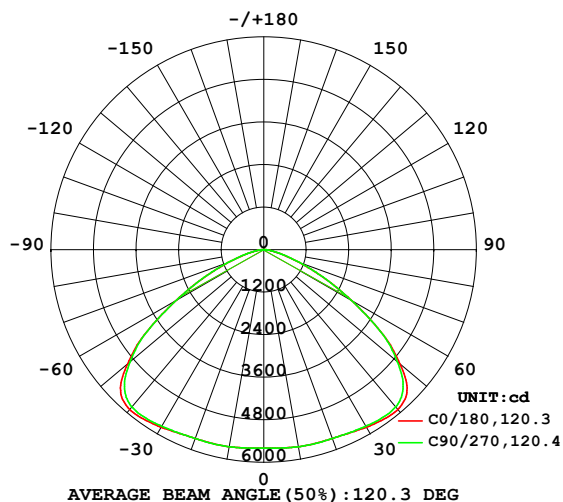
GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

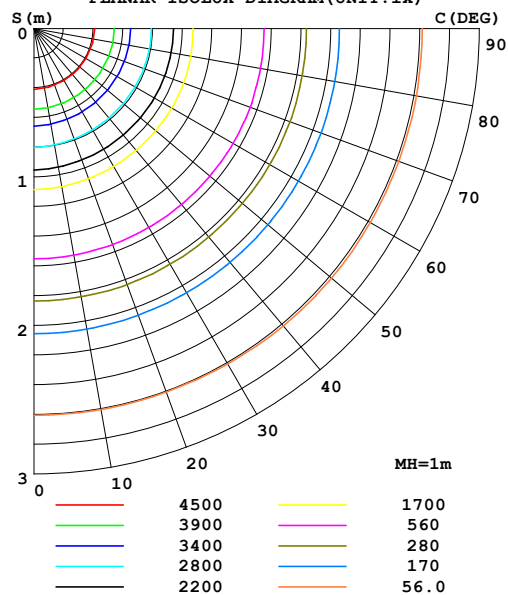
Test:U:230.17V I:0.4569A P:99.613W PF:0.9473 Freq:50.00Hz Lamp Flux:18786.4x1 lm		
NAME: 950-106_120°	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:φ0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 188.59 lm/W			
MODEL	RL283	I _{max} (cd)	5903	S/MH(C0/180)	1.60
NOMINAL POWER(W)	100	LOR(%)	100.0	S/MH(C90/270)	1.59
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	18786	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	18786.4	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.0
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.55

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



PLANAR ISOLUX DIAGRAM(UNIT:lx)



C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-05-11

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

GONIOPHOTOMETERS SYSTEM TEST REPORT

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	5644	5633	5644	5654	5644	5654	5644	5633	0- 10	537.0	537.0	2.86, 2.86
20	5666	5652	5668	5679	5666	5679	5668	5652	10- 20	1603	2140	11.4, 11.4
30	5782	5715	5752	5803	5782	5803	5752	5715	20- 30	2643	4783	25.5, 25.5
40	5885	5749	5791	5829	5885	5829	5791	5749	30- 40	3650	8433	44.9, 44.9
50	5015	4934	4921	4857	5015	4857	4921	4934	40- 50	4256	12688	67.5, 67.5
60	2837	2830	2841	2790	2837	2790	2841	2830	50- 60	3517	16206	86.3, 86.3
70	1078	1103	1103	1079	1078	1079	1103	1103	60- 70	1857	18063	96.1, 96.1
80	243.3	251.3	250.7	249.2	243.3	249.2	250.7	251.3	70- 80	627.8	18691	99.5, 99.5
90	5.632	5.689	5.690	5.573	5.632	5.573	5.690	5.689	80- 90	95.90	18786	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		

Conical surface Flux(90deg): 10551 lm

%lum = 56.2%

%lamp = 56.2%

Conical surface Flux(120deg): 16206 lm

%lum = 86.3%

%lamp = 86.3%

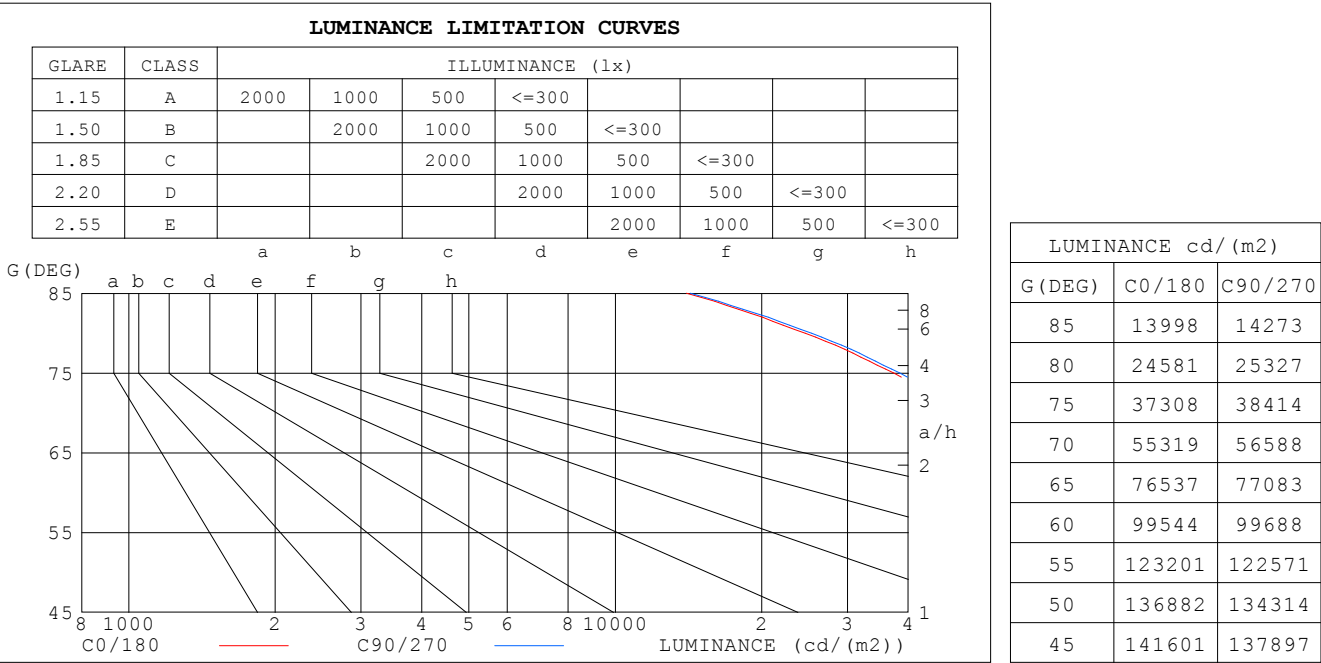
C Range: 0 - 360DEG
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Temperature:25.3DEG
Operators:
Test Date:2019-05-11

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

LUMINANCE LIMITATION CURVES



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C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-05-11

Checker: LI

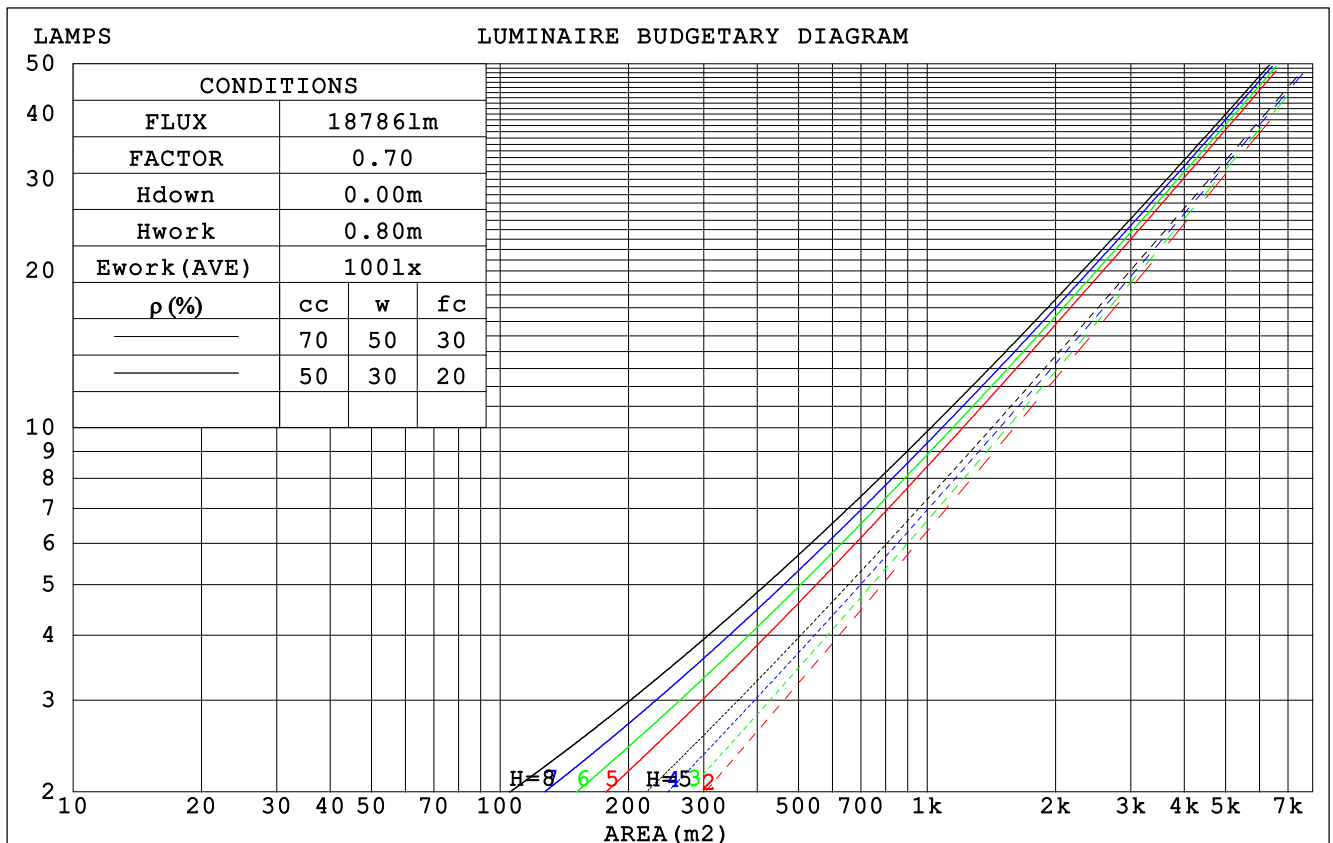
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γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Assessor:

GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

pcc	80%			70%			50%			30%			10%			0
p _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p _{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	1.06	1.02	.98	1.03	.90	.97	.99	.96	.94	.95	.93	.91	.92	.90	.88	.86
2.0	.93	.86	.81	.91	.85	.80	.87	.82	.78	.84	.80	.76	.81	.78	.75	.73
3.0	.82	.74	.68	.80	.73	.67	.77	.71	.66	.74	.69	.65	.72	.67	.64	.61
4.0	.72	.64	.57	.71	.63	.57	.68	.61	.56	.66	.60	.55	.64	.59	.54	.52
5.0	.64	.55	.49	.63	.55	.49	.61	.54	.48	.59	.53	.48	.57	.52	.47	.45
6.0	.58	.49	.42	.57	.48	.42	.55	.47	.42	.53	.46	.41	.52	.46	.41	.39
7.0	.52	.43	.37	.51	.43	.37	.50	.42	.37	.48	.41	.36	.47	.41	.36	.34
8.0	.47	.39	.33	.46	.38	.33	.45	.38	.32	.44	.37	.32	.43	.37	.32	.30
9.0	.43	.35	.29	.42	.35	.29	.41	.34	.29	.40	.34	.29	.39	.33	.29	.27
10.0	.40	.32	.26	.39	.31	.26	.38	.31	.26	.37	.31	.26	.36	.30	.26	.24



C Range: 0 - 360DEG
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Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

GONIOPHOTOMETERS SYSTEM TEST REPORT

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	.277	.158	.050	.270	.154	.049	.257	.148	.047	.245	.141	.045	.234	.136	.044		
2.0	.270	.148	.045	.264	.146	.045	.253	.141	.044	.242	.136	.043	.232	.131	.041		
3.0	.256	.136	.041	.251	.134	.040	.240	.130	.040	.231	.127	.039	.222	.123	.038		
4.0	.240	.125	.037	.235	.123	.036	.226	.120	.036	.218	.117	.035	.210	.114	.035		
5.0	.225	.114	.033	.220	.113	.033	.212	.111	.033	.205	.108	.032	.198	.106	.032		
6.0	.210	.105	.030	.206	.104	.030	.199	.102	.030	.192	.100	.029	.186	.098	.029		
7.0	.197	.097	.028	.193	.096	.027	.187	.095	.027	.181	.093	.027	.175	.091	.027		
8.0	.185	.090	.025	.182	.089	.025	.176	.088	.025	.170	.086	.025	.165	.085	.025		
9.0	.174	.084	.023	.171	.083	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023		
10.0	.164	.078	.022	.161	.078	.022	.157	.077	.022	.152	.076	.021	.148	.074	.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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.178	.156	.137	.152	.134	.118	.104	.092	.081	.060	.053	.047	.019	.017	.015	
2.0	.169	.132	.101	.145	.114	.087	.099	.079	.061	.057	.046	.036	.018	.015	.012	
3.0	.162	.114	.076	.139	.099	.066	.095	.068	.046	.055	.040	.027	.018	.013	.009	
4.0	.155	.101	.060	.133	.087	.052	.091	.061	.036	.053	.036	.022	.017	.012	.007	
5.0	.148	.090	.048	.127	.078	.042	.087	.055	.029	.051	.032	.017	.016	.010	.006	
6.0	.141	.082	.040	.121	.071	.035	.084	.050	.024	.049	.029	.015	.016	.010	.005	
7.0	.135	.075	.033	.116	.065	.029	.080	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.129	.069	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.004	
9.0	.123	.065	.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: 2.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2019-05-11

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:9.470m [K=1.0000]
 Remarks:

Checker: LI

Assessor:

GONIOPHOTOMETERS SYSTEM TEST REPORT

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	29.7	31.2	30.0	31.4	31.6	29.7	31.2	30.0	31.4	31.6
3H	30.2	31.6	30.5	31.8	32.1	30.2	31.6	30.5	31.8	32.1
4H	30.3	31.6	30.6	31.9	32.1	30.3	31.6	30.6	31.9	32.1
6H	30.3	31.5	30.6	31.8	32.1	30.3	31.5	30.7	31.8	32.1
8H	30.3	31.4	30.6	31.7	32.0	30.3	31.5	30.6	31.7	32.0
12H	30.2	31.4	30.6	31.7	32.0	30.3	31.4	30.6	31.7	32.0
4H 2H	30.0	31.3	30.3	31.6	31.8	30.0	31.3	30.3	31.5	31.8
3H	30.6	31.8	31.0	32.1	32.4	30.7	31.8	31.0	32.1	32.4
4H	30.8	31.8	31.1	32.1	32.4	30.8	31.8	31.2	32.1	32.5
6H	30.8	31.7	31.2	32.1	32.4	30.8	31.7	31.2	32.1	32.4
8H	30.8	31.6	31.2	32.0	32.4	30.8	31.7	31.2	32.0	32.4
12H	30.8	31.5	31.2	31.9	32.3	30.8	31.6	31.2	31.9	32.3
8H 4H	30.8	31.6	31.2	32.0	32.3	30.8	31.6	31.2	32.0	32.4
6H	30.9	31.5	31.3	31.9	32.4	30.9	31.6	31.3	32.0	32.4
8H	30.9	31.5	31.3	31.9	32.3	30.9	31.5	31.4	31.9	32.4
12H	30.9	31.4	31.3	31.8	32.3	30.9	31.4	31.4	31.8	32.3
12H 4H	30.7	31.5	31.2	31.9	32.3	30.8	31.5	31.2	31.9	32.3
6H	30.8	31.4	31.3	31.9	32.3	30.9	31.5	31.3	31.9	32.3
8H	30.9	31.4	31.3	31.8	32.3	30.9	31.4	31.4	31.8	32.3
Variations with the observer position at spacings:										
S = 1.0H	+ 0.3 / - 0.4					+ 0.3 / - 0.4				
1.5H	+ 0.4 / - 1.0					+ 0.5 / - 1.0				
2.0H	+ 1.0 / - 1.2					+ 1.0 / - 1.1				

CIE Pub.117, 18786 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 10.2$)
Area: 0.057 m²

C Range: 0 - 360DEG
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γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

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Assessor:

GONIOPHOTOMETERS SYSTEM TEST REPORT

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) $k(RI) \times RCR = 5$									
$k = 0.60$	57	45	38	56	45	38	55	44	38	31
0.80	68	56	49	67	56	49	65	55	48	41
1.00	77	66	59	76	66	59	74	67	59	52
1.25	85	75	68	83	74	68	81	73	67	60
1.50	90	81	74	88	80	73	85	78	72	65
2.00	97	89	83	95	88	82	92	86	81	73
2.50	101	93	88	99	92	87	95	89	85	77
3.00	104	97	92	102	96	91	98	93	89	81
4.00	107	102	98	105	100	97	101	97	94	85
5.00	110	105	101	107	103	100	103	100	97	88
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

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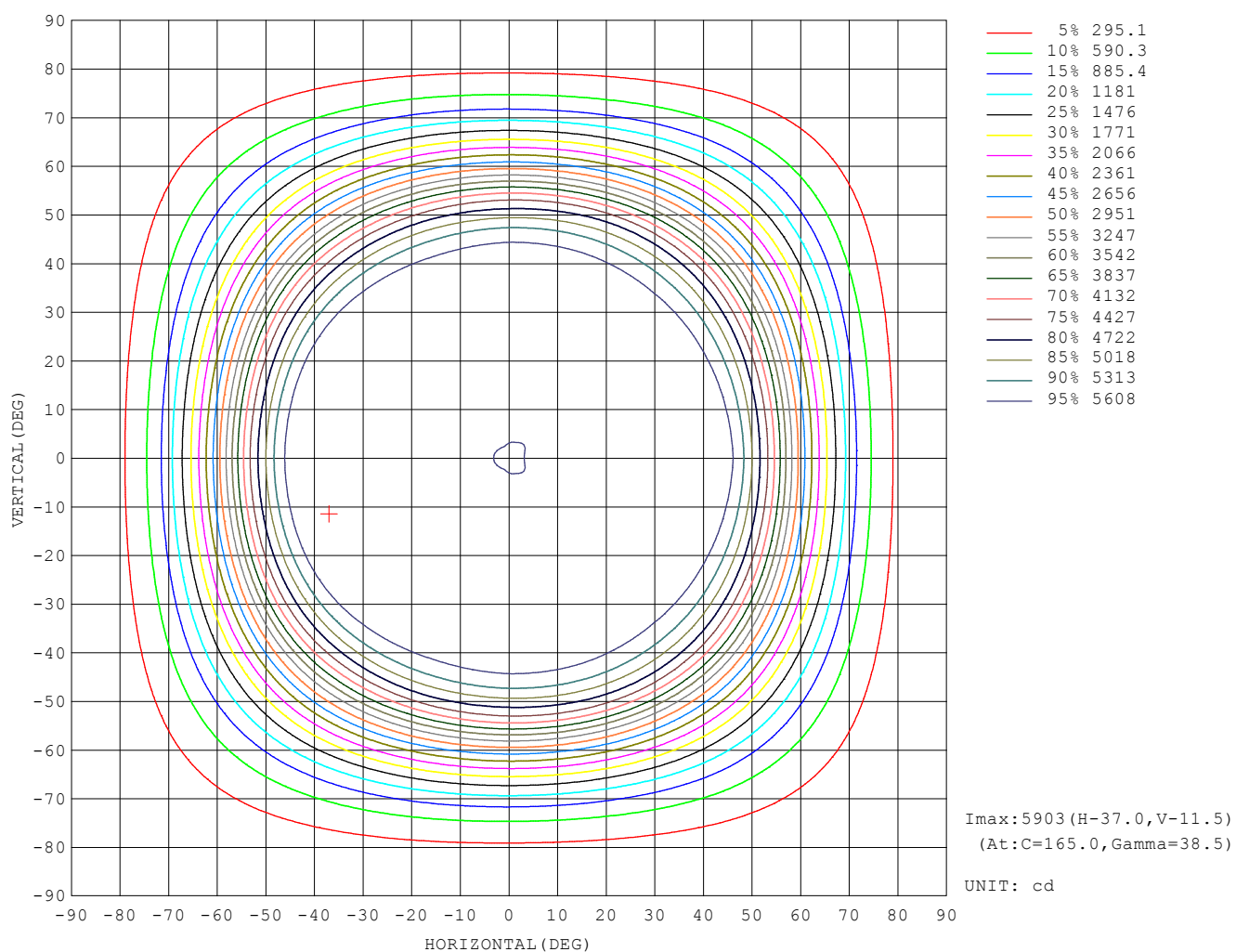
Checker: LI

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.470m [K=1.0000]
 Remarks:

Assessor:

GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM



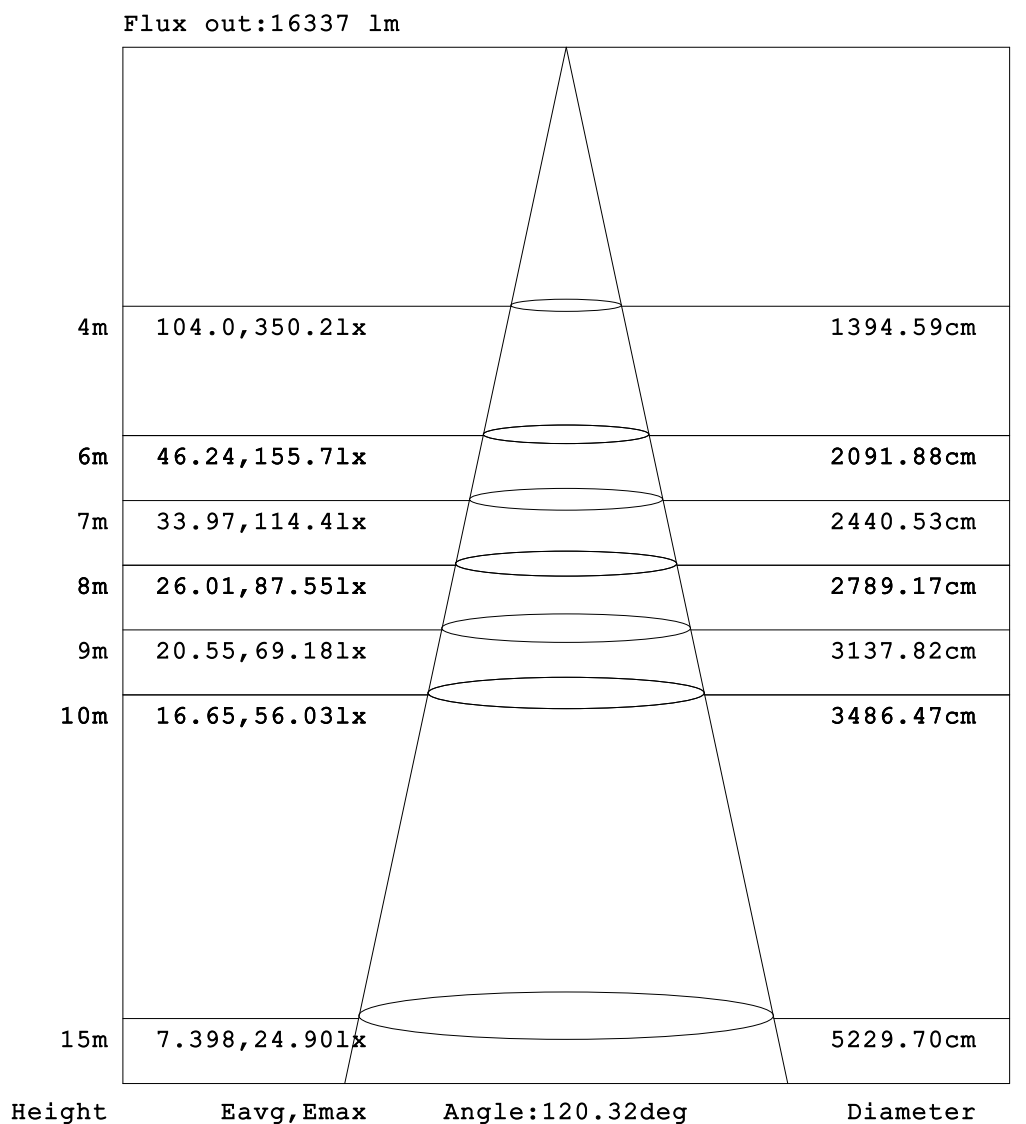
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γ Range: 0 - 90DEG
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Remarks:

Checker: LI

Assessor:

AAI Figure



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

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Temperature:25.3DEG
Operators:
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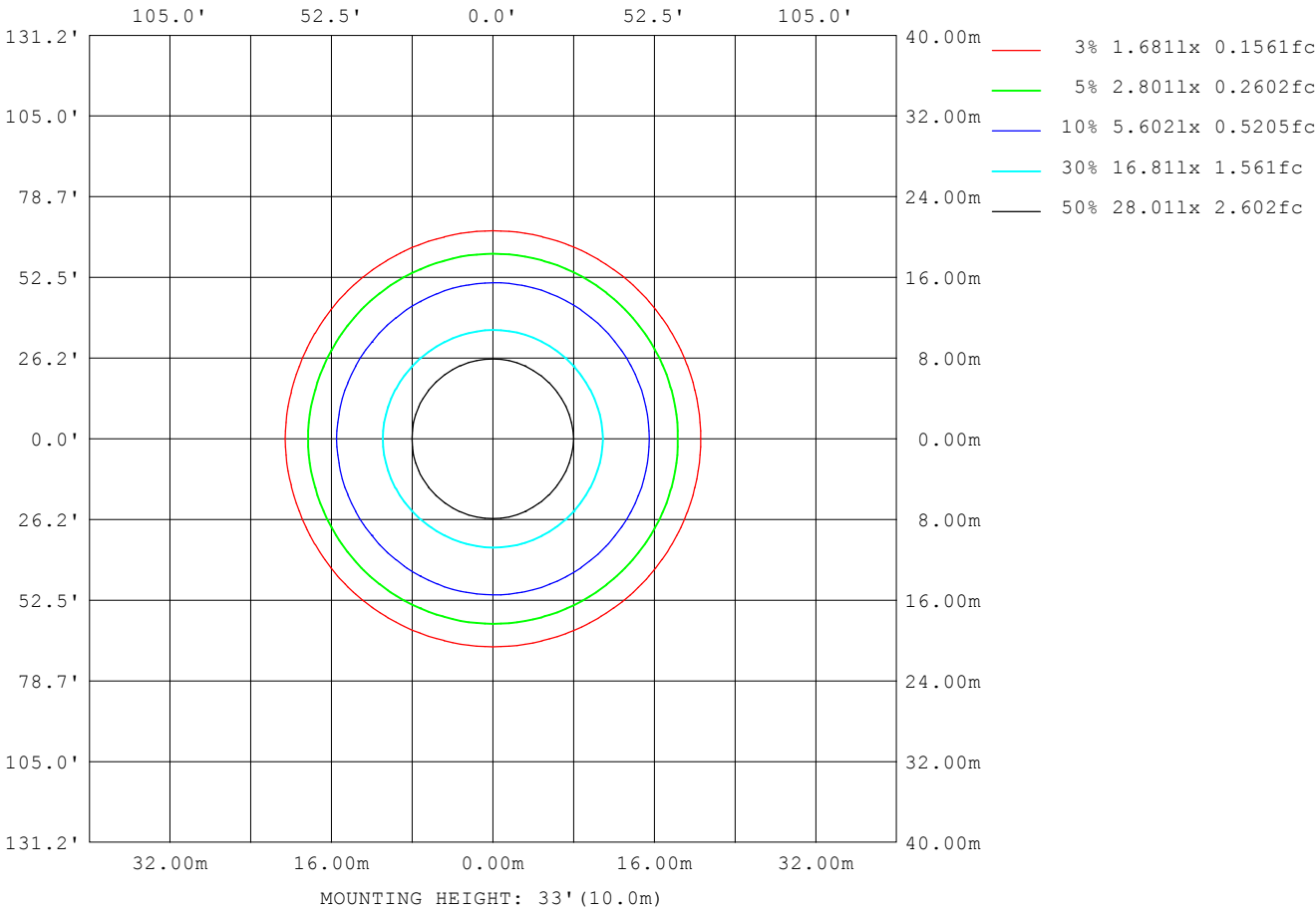
γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
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Humidity:65.0%
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Remarks:

Checker: LI

Assessor:

GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM



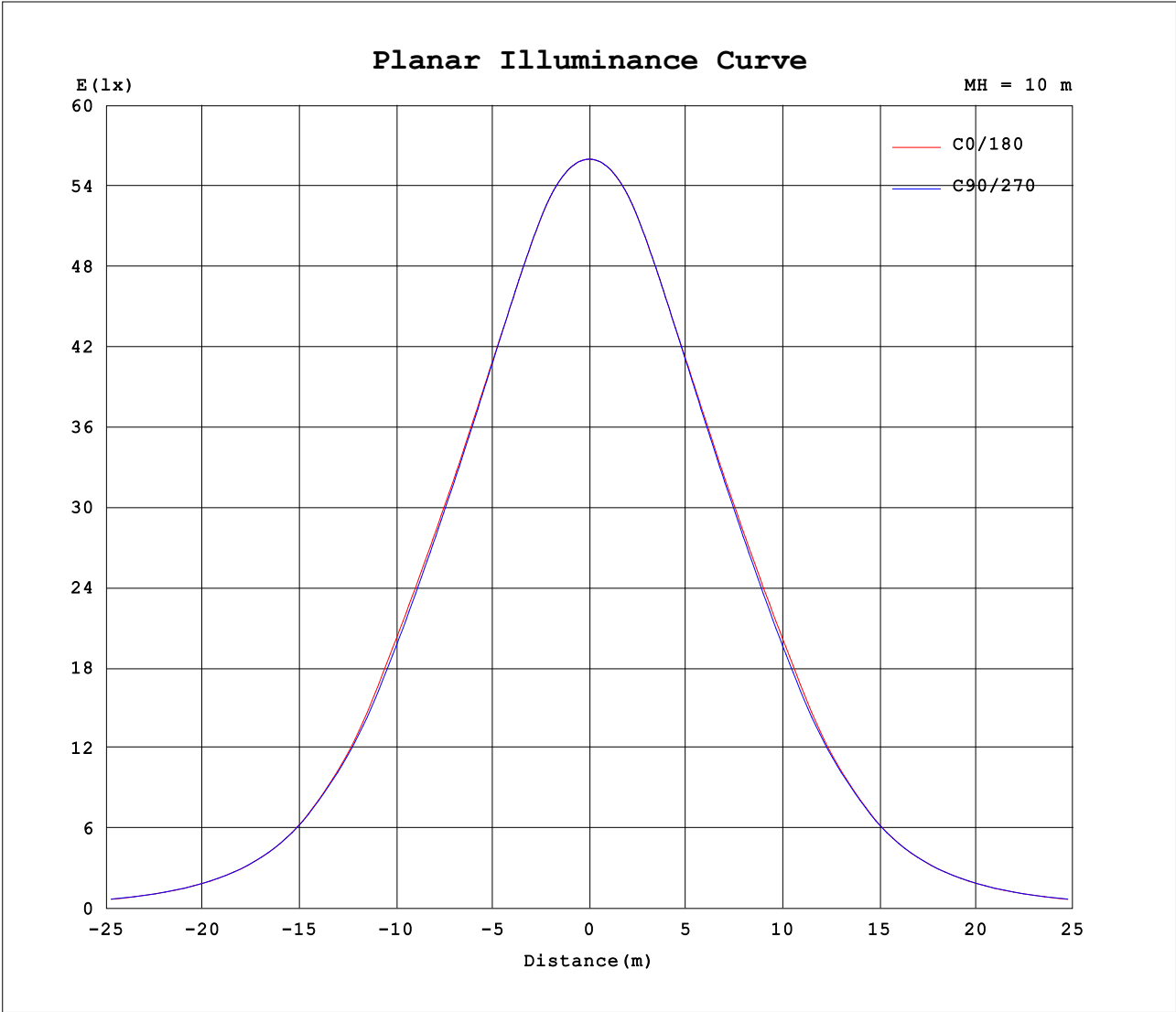
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-05-11

Checker: LI

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Assessor:

Planar Illuminance Curve



C Range: 0 - 360DEG
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Temperature:25.3DEG
Operators:
Test Date:2019-05-11

Checker: LI

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Assessor: