

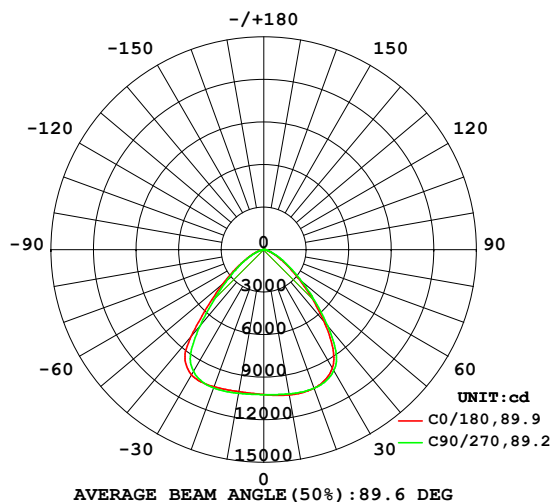
GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

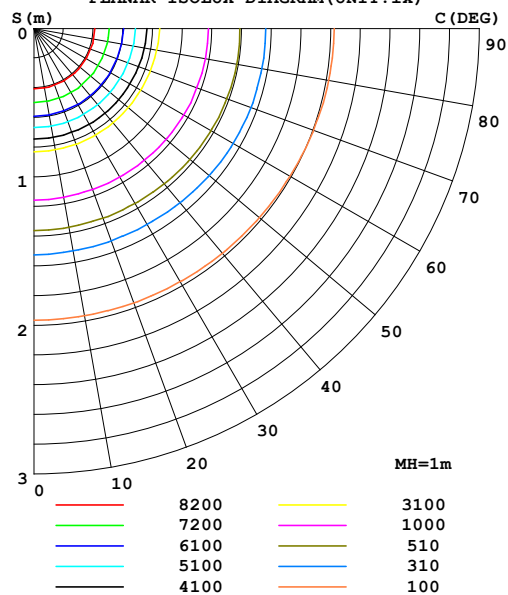
Test:U:230.02V I:0.6632A P:150.33W PF:0.9854 Freq:50.00Hz Lamp Flux:21574.5x1 lm		
NAME: HB39-150-5080-H00125	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:#0.24	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 143.52 lm/W			
MODEL	SE303	I _{max} (cd)	10456	S/MH(C0/180)	1.31
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	21575	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	21574.5	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.0
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.30

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



PLANAR ISOLUX DIAGRAM(UNIT:lx)



C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LI
Test Date:2019-12-17

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:9.432m [K=1.0000]
Remarks:

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	1040	1039	1033	1023	1017	1020	1029	1037	0- 10	979.6	979.6	4.54,4.54
20	1040	1041	1040	1035	1029	1032	1038	1039	10- 20	2934	3914	18.1,18.1
30	966.2	968.9	986.7	1008	1020	1011	992.3	972.2	20- 30	4724	8638	40,40
40	660.2	664.4	702.1	749.5	793.4	757.4	698.1	662.4	30- 40	5510	14148	65.6,65.6
50	329.8	336.0	352.9	370.4	378.5	368.6	339.8	333.3	40- 50	3953	18100	83.9,83.9
60	139.9	145.8	157.0	156.1	163.8	154.9	157.1	141.5	50- 60	2131	20232	93.8,93.8
70	50.85	52.46	59.60	57.16	61.27	56.53	55.42	51.33	60- 70	961.8	21194	98.2,98.2
80	11.85	12.48	14.12	13.89	14.64	13.75	13.27	11.98	70- 80	331.8	21525	99.8,99.8
90	0.7118	0.7178	0.6700	0.6415	0.6585	0.6729	0.7003	0.7274	80- 90	49.12	21575	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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 16382 lm

%lum = 75.9%

%lamp = 75.9%

Conical surface Flux(120deg): 20232 lm

%lum = 93.8%

%lamp = 93.8%

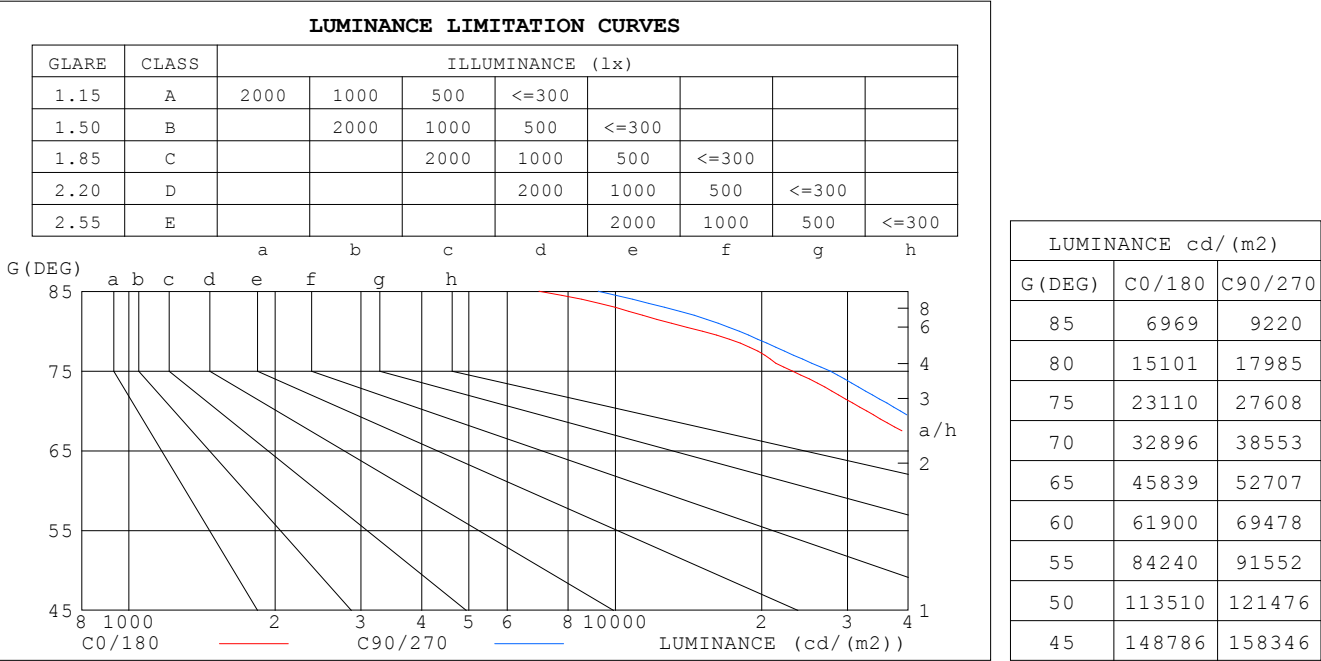
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Test Speed: HIGH
Temperature:25.3DEG
Operators:LI
Test Date:2019-12-17

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:9.432m [K=1.0000]
Remarks:

Assessor:

LUMINANCE LIMITATION CURVES



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Operators:LI
Test Date:2019-12-17

Checker: LI

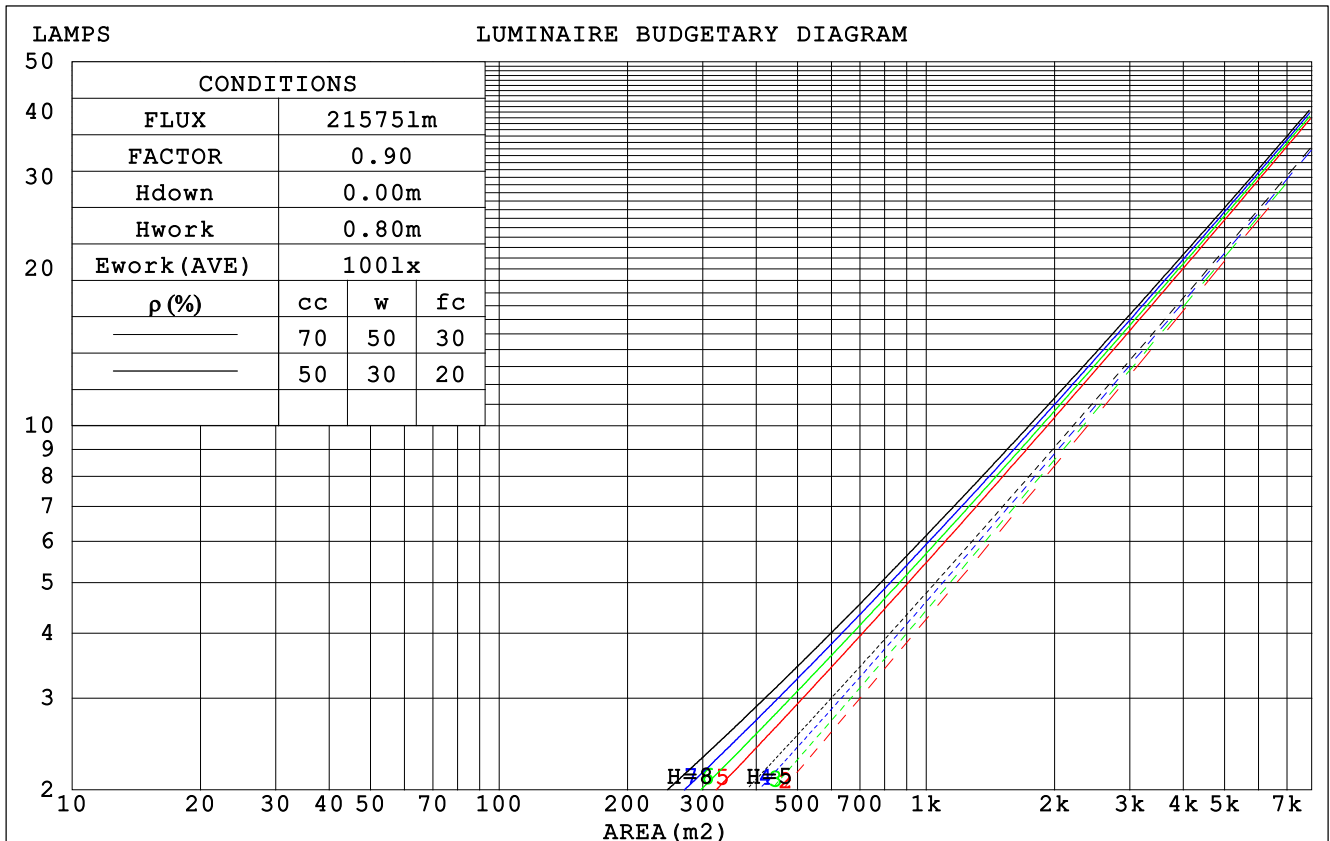
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γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.432m [K=1.0000]
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Assessor:

GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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			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	1.08	1.05	1.02	1.06	1.03	1.00	1.02	.99	.97	.98	.96	.94	.94	.93	.91	.89
2.0	.97	.92	.87	.95	.90	.86	.92	.88	.84	.89	.85	.83	.86	.83	.81	.79
3.0	.88	.81	.76	.86	.80	.75	.83	.78	.74	.81	.76	.73	.78	.75	.72	.70
4.0	.79	.72	.67	.78	.71	.66	.76	.70	.65	.74	.69	.64	.72	.67	.64	.62
5.0	.72	.65	.59	.71	.64	.59	.69	.63	.58	.67	.62	.57	.66	.61	.57	.55
6.0	.66	.58	.53	.65	.58	.52	.63	.57	.52	.62	.56	.52	.60	.55	.51	.49
7.0	.60	.53	.47	.60	.52	.47	.58	.52	.47	.57	.51	.46	.55	.50	.46	.44
8.0	.55	.48	.43	.55	.48	.43	.54	.47	.42	.52	.46	.42	.51	.46	.42	.40
9.0	.51	.44	.39	.51	.44	.39	.50	.43	.39	.49	.43	.38	.48	.42	.38	.37
10.0	.48	.40	.36	.47	.40	.35	.46	.40	.35	.45	.39	.35	.44	.39	.35	.33



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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:9.432m [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	.233	.133	.042	.226	.129	.041	.213	.122	.039	.202	.116	.037	.191	.110	.036		
2.0	.227	.125	.038	.221	.122	.038	.210	.117	.036	.200	.112	.035	.190	.108	.034		
3.0	.217	.115	.035	.212	.113	.034	.202	.109	.033	.193	.106	.032	.185	.102	.032		
4.0	.205	.107	.031	.201	.105	.031	.192	.102	.030	.184	.099	.030	.177	.096	.029		
5.0	.194	.099	.029	.190	.098	.028	.183	.095	.028	.176	.093	.028	.169	.090	.027		
6.0	.183	.092	.026	.180	.091	.026	.173	.089	.026	.167	.087	.025	.161	.085	.025		
7.0	.174	.086	.024	.170	.085	.024	.164	.083	.024	.159	.081	.024	.153	.080	.023		
8.0	.164	.080	.023	.162	.080	.022	.156	.078	.022	.151	.077	.022	.146	.075	.022		
9.0	.156	.075	.021	.153	.075	.021	.148	.073	.021	.144	.072	.021	.140	.071	.020		
10.0	.148	.071	.020	.146	.070	.020	.141	.069	.020	.137	.068	.019	.133	.067	.019		

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	.175	.157	.140	.150	.135	.121	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.164	.132	.106	.140	.114	.091	.096	.079	.064	.055	.046	.037	.018	.015	.012	
3.0	.154	.114	.082	.132	.098	.071	.091	.068	.050	.052	.040	.029	.017	.013	.010	
4.0	.146	.100	.065	.125	.086	.056	.086	.060	.040	.050	.035	.023	.016	.011	.008	
5.0	.139	.089	.053	.119	.077	.046	.082	.054	.032	.048	.032	.019	.015	.010	.006	
6.0	.132	.080	.043	.113	.070	.038	.078	.049	.027	.045	.029	.016	.015	.009	.005	
7.0	.126	.073	.037	.108	.064	.032	.075	.045	.023	.043	.026	.013	.014	.009	.004	
8.0	.120	.068	.031	.103	.059	.027	.072	.041	.019	.042	.024	.012	.013	.008	.004	
9.0	.115	.063	.027	.099	.054	.024	.069	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.110	.058	.024	.095	.051	.021	.066	.036	.015	.038	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LI
 Test Date:2019-12-17

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:9.432m [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	27.5	28.8	27.7	28.9	29.1	27.8	29.1	28.1	29.3	29.5
3H	27.6	28.8	27.9	29.0	29.3	28.1	29.2	28.3	29.4	29.7
4H	27.7	28.8	28.0	29.0	29.2	28.1	29.2	28.4	29.4	29.7
6H	27.6	28.6	27.9	28.9	29.2	28.0	29.1	28.4	29.3	29.6
8H	27.6	28.6	27.9	28.8	29.1	28.0	29.0	28.3	29.3	29.6
12H	27.5	28.5	27.9	28.8	29.1	28.0	28.9	28.3	29.2	29.5
4H 2H	27.5	28.6	27.8	28.9	29.1	27.8	29.0	28.1	29.2	29.4
3H	27.8	28.7	28.1	29.0	29.3	28.2	29.1	28.5	29.4	29.7
4H	27.8	28.7	28.2	29.0	29.3	28.2	29.1	28.6	29.4	29.7
6H	27.8	28.6	28.2	28.9	29.3	28.2	29.0	28.6	29.3	29.7
8H	27.8	28.5	28.2	28.9	29.2	28.2	28.9	28.6	29.3	29.7
12H	27.8	28.4	28.2	28.8	29.2	28.2	28.8	28.6	29.2	29.6
8H 4H	27.8	28.5	28.2	28.9	29.2	28.2	28.9	28.6	29.2	29.6
6H	27.8	28.4	28.3	28.8	29.2	28.2	28.8	28.6	29.2	29.6
8H	27.8	28.3	28.3	28.7	29.2	28.2	28.7	28.7	29.1	29.6
12H	27.8	28.2	28.2	28.6	29.1	28.2	28.6	28.6	29.0	29.5
12H 4H	27.8	28.4	28.2	28.8	29.2	28.1	28.8	28.6	29.2	29.6
6H	27.8	28.3	28.2	28.7	29.2	28.2	28.7	28.6	29.1	29.5
8H	27.8	28.2	28.2	28.6	29.1	28.2	28.6	28.6	29.0	29.5
Variations with the observer position at spacings:										
S = 1.0H	+ 1.2 / - 1.8					+ 1.1 / - 1.6				
1.5H	+ 1.2 / - 1.2					+ 1.1 / - 1.1				
2.0H	+ 2.4 / - 2.2					+ 2.3 / - 2.3				

CIE Pub.117, 21575 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 10.7)
Area: 0.0452 m2

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Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.432m [K=1.0000]
Remarks:

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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) $k(RI) \times RCR = 5$									
$k = 0.60$	70	60	55	69	60	54	68	60	54	49
0.80	79	70	65	79	70	64	77	69	64	59
1.00	87	79	73	86	78	73	84	79	72	67
1.25	93	85	80	92	85	80	90	83	79	73
1.50	97	90	85	96	89	84	93	88	83	77
2.00	102	96	92	101	95	91	98	93	89	83
2.50	105	99	95	103	98	94	100	96	92	85
3.00	108	103	99	106	101	98	102	98	95	88
4.00	110	106	103	108	105	102	104	101	99	91
5.00	112	109	106	110	107	104	105	103	101	93
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

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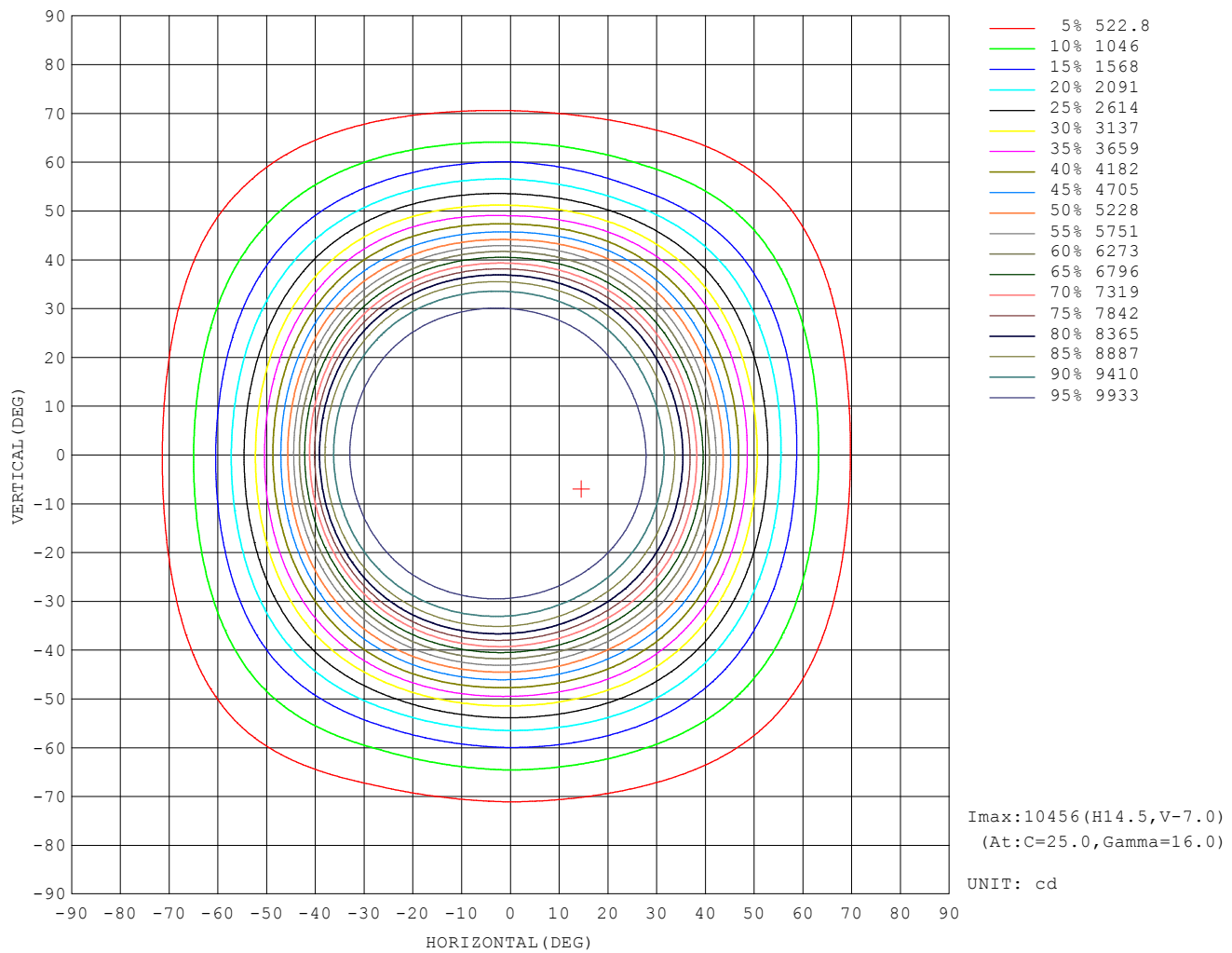
Checker: LI

γ Range: 0 - 90DEG
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 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.432m [K=1.0000]
 Remarks:

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GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM



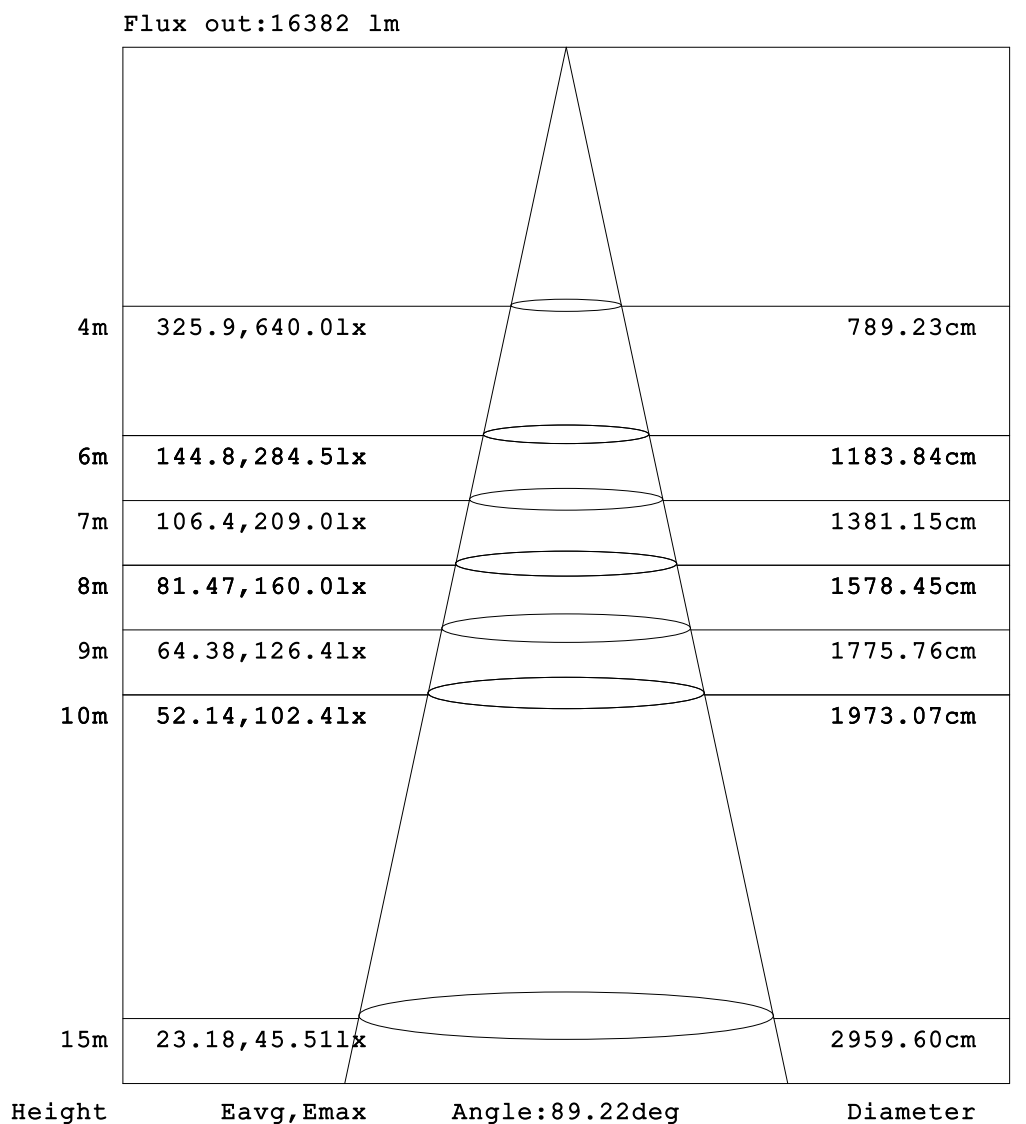
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Remarks:

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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C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LI
Test Date: 2019-12-17

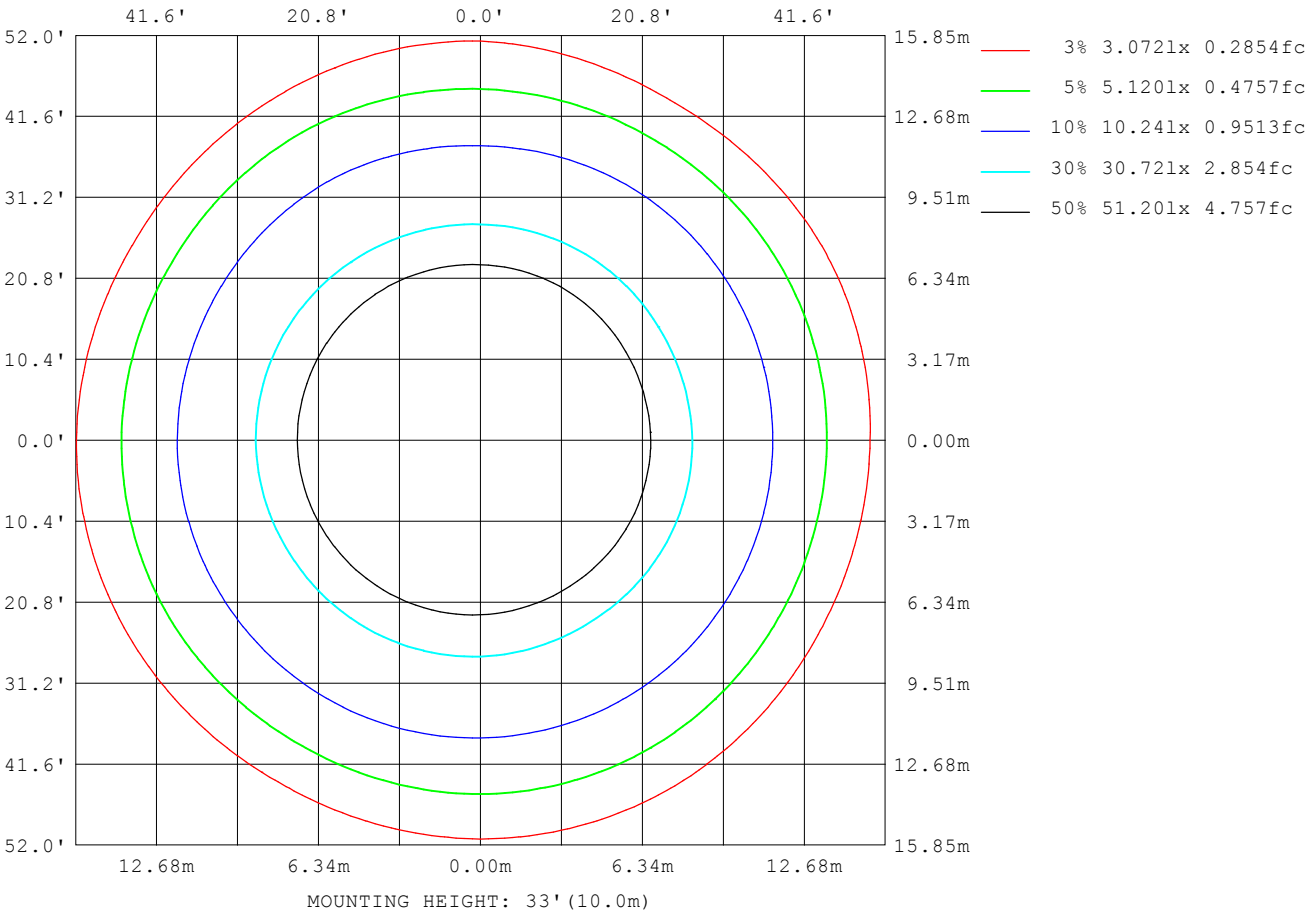
γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
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Checker: LI

Assessor:

GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM



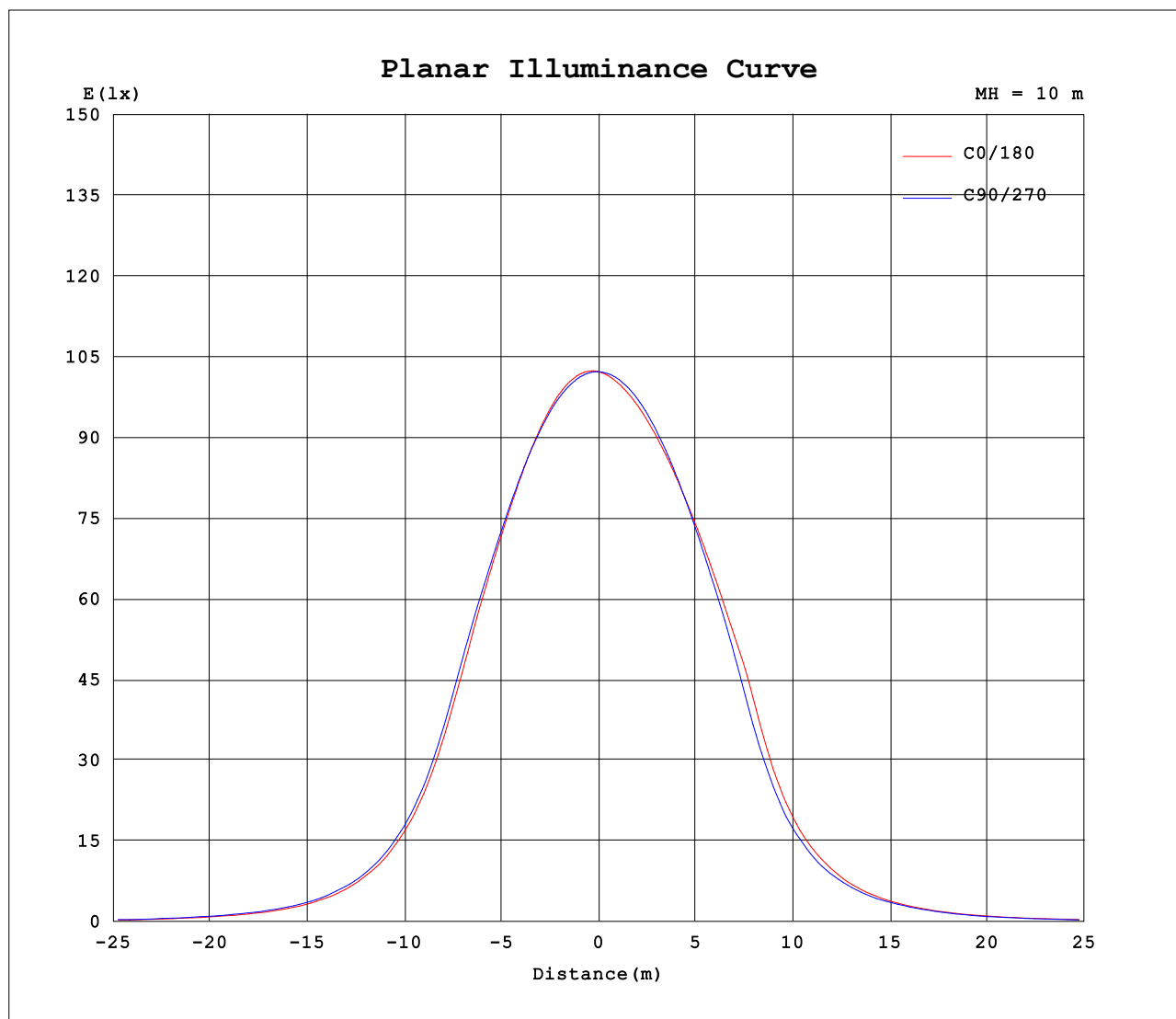
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Operators:LI
Test Date:2019-12-17

Checker: LI

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
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Remarks:

Assessor:

Planar Illuminance Curve



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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: 9.432m [K=1.0000]
Remarks:

Assessor: