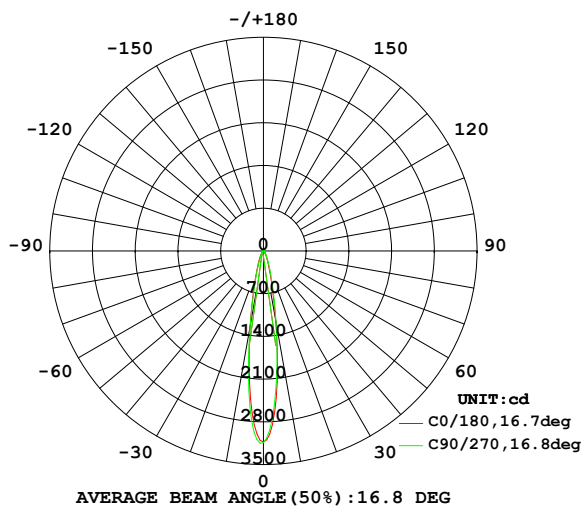


LUMINAIRE PHOTOMETRIC TEST REPORT

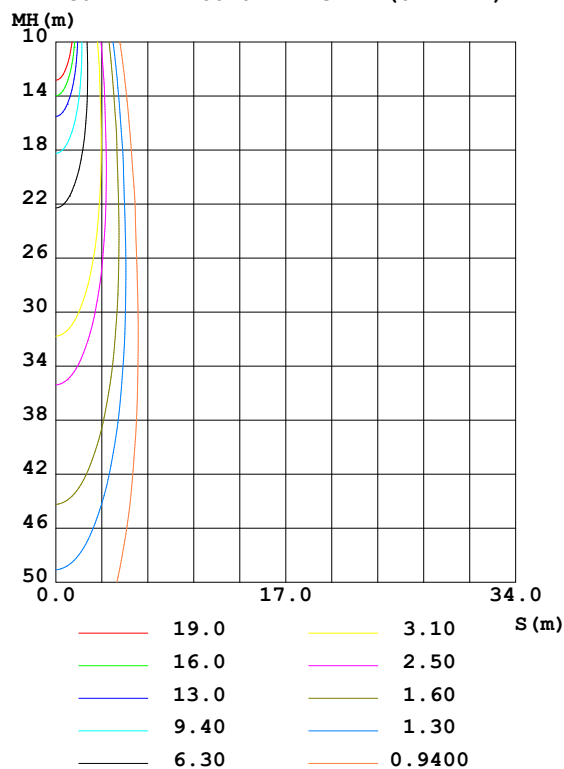
Test:U:232.3V I:0.0345A P:7.047W PF:0.8800 Lamp Flux:473.716x1 lm		
NAME: 81151LED	TYPE:	WEIGHT:
SPEC.:P-81151LED-7W3018-CI15036R90-LDY500	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 67.22 lm/W			
MODEL	CLU7A3 1201	I _{max} (cd)	3150	S/MH (C0/180)	0.29
NOMINAL POWER (W)	7W	LOR (%)	100.0	S/MH (C90/270)	0.30
RATED VOLTAGE (V)		TOTAL FLUX (lm)	473.72	η UP, DN (C0-180)	0.2, 48.9
NOMINAL FLUX (lm)	473.716	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.1, 50.8
LAMPS INSIDE	1	η up (%)	0.3	CIBSE SHR NOM	0.00
TEST VOLTAGE (V)	220.2	η down (%)	99.7	CIBSE SHR MAX	1.00

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Xie Bi
Test Date: 2023-11-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.286
Humidity: 65.0%
Test Distance: 6.810m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	1164	1207	1265	1255					0- 10	190.5	190.5	40.2,40.2
20	239.1	286.7	288.1	250.8					10- 20	157.6	348.1	73.5,73.5
30	80.89	99.89	99.51	80.60					20- 30	71.14	419.2	88.5,88.5
40	32.69	38.07	39.68	31.30					30- 40	36.01	455.2	96.1,96.1
50	6.410	2.633	6.823	2.818					40- 50	14.00	469.2	99.1,99.1
60	1.015	1.018	0.9869	1.114					50- 60	1.689	470.9	99.4,99.4
70	0.6645	0.5593	0.6377	0.6469					60- 70	0.8395	471.8	99.6,99.6
80	0.2548	0.1603	0.2370	0.2146					70- 80	0.4296	472.2	99.7,99.7
90	0	0	0	0					80- 90	0.0872	472.3	99.7,99.7
100	0	0	0	0					90-100	0	472.3	99.7,99.7
110	0	0	0	0					100-110	0	472.3	99.7,99.7
120	0	0	0	0					110-120	0	472.3	99.7,99.7
130	0.0557	0.0419	0.0279	0.0244					120-130	0.0108	472.3	99.7,99.7
140	0.2092	0.1745	0.0995	0.1133					130-140	0.0638	472.4	99.7,99.7
150	0.7230	0.6662	0.3175	0.3573					140-150	0.1794	472.5	99.8,99.8
160	1.968	1.947	1.145	1.179					150-160	0.4432	473.0	99.8,99.8
170	2.217	2.202	1.908	1.965					160-170	0.5431	473.5	100,100
180	1.753	1.819	1.751	1.819					170-180	0.1854	473.7	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

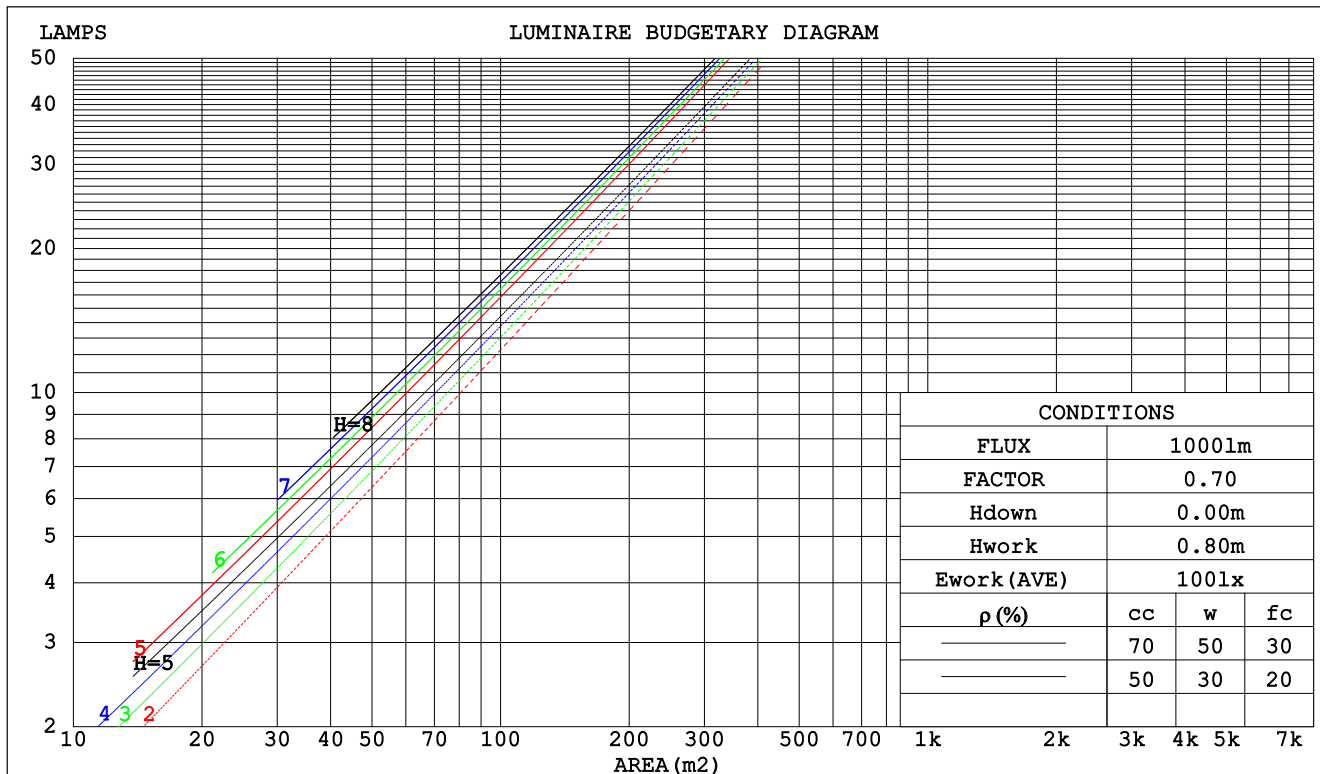
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Xie Bi
 Test Date:2023-11-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.286
 Humidity:65.0%
 Test Distance:6.810m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:232.3V I:0.0345A P:7.047W PF:0.8800 Lamp Flux:473.716x1 lm		
NAME: 81151LED	TYPE:	WEIGHT:
SPEC.:P-81151LED-7W3018-CI15036R90-LDY500	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	PROTECTION ANGLE:

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{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	.00
1.0	1.13	1.11	1.09	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.01	.99	.99	.98	.96
2.0	1.07	1.04	1.01	1.05	1.03	1.00	1.02	1.00	.98	.99	.98	.96	.97	.95	.94	.93
3.0	1.02	.99	.96	1.01	.98	.95	.98	.96	.93	.96	.94	.92	.94	.92	.91	.89
4.0	.98	.94	.91	.97	.93	.90	.95	.92	.89	.93	.90	.88	.91	.89	.87	.86
5.0	.94	.90	.87	.93	.90	.87	.92	.88	.86	.90	.87	.85	.89	.86	.84	.83
6.0	.91	.87	.84	.90	.86	.83	.89	.85	.83	.88	.85	.82	.86	.84	.82	.81
7.0	.88	.84	.81	.87	.83	.80	.86	.83	.80	.85	.82	.80	.84	.81	.79	.78
8.0	.85	.81	.78	.85	.81	.78	.84	.80	.78	.83	.80	.77	.82	.79	.77	.76
9.0	.83	.79	.76	.82	.78	.76	.81	.78	.75	.81	.77	.75	.80	.77	.75	.74
10.0	.80	.76	.74	.80	.76	.73	.79	.76	.73	.79	.75	.73	.78	.75	.73	.72



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2023-11-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.286
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:232.3V I:0.0345A P:7.047W PF:0.8800 Lamp Flux:473.716x1 lm		
NAME: 81151LED	TYPE:	WEIGHT:
SPEC.:P-81151LED-7W3018-CI15036R90-LDY500	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	PROTECTION ANGLE:

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 Coeffcients(WEC)										
0.0																	
1.0	.140	.080	.025	.134	.076	.024	.121	.069	.022	.109	.063	.020	.099	.057	.018		
2.0	.131	.072	.022	.125	.069	.021	.115	.064	.020	.105	.059	.018	.096	.055	.017		
3.0	.122	.065	.019	.118	.063	.019	.109	.059	.018	.101	.055	.017	.093	.052	.016		
4.0	.115	.060	.018	.111	.058	.017	.103	.055	.016	.097	.052	.016	.090	.049	.015		
5.0	.108	.055	.016	.105	.054	.016	.098	.051	.015	.093	.049	.015	.087	.047	.014		
6.0	.102	.051	.015	.099	.050	.014	.094	.048	.014	.089	.046	.014	.084	.044	.013		
7.0	.097	.048	.014	.094	.047	.013	.090	.045	.013	.085	.044	.013	.081	.042	.012		
8.0	.092	.045	.013	.090	.044	.013	.086	.043	.012	.082	.042	.012	.078	.040	.012		
9.0	.088	.043	.012	.086	.042	.012	.082	.041	.012	.079	.040	.011	.076	.038	.011		
10.0	.084	.040	.011	.082	.040	.011	.079	.039	.011	.076	.038	.011	.073	.037	.011		

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	.193	.193	.193	.165	.165	.165	.112	.112	.112	.065	.065	.065	.021	.021	.021	
1.0	.171	.160	.150	.146	.137	.129	.100	.094	.089	.058	.055	.052	.018	.018	.017	
2.0	.153	.135	.120	.131	.116	.104	.090	.080	.072	.052	.047	.042	.017	.015	.014	
3.0	.138	.116	.098	.119	.100	.085	.081	.069	.059	.047	.040	.035	.015	.013	.011	
4.0	.126	.100	.081	.108	.087	.070	.074	.060	.049	.043	.035	.029	.014	.012	.010	
5.0	.116	.088	.068	.099	.076	.059	.068	.053	.042	.040	.031	.025	.013	.010	.008	
6.0	.107	.078	.058	.092	.068	.050	.063	.047	.035	.037	.028	.021	.012	.009	.007	
7.0	.099	.070	.049	.085	.061	.043	.059	.043	.031	.034	.025	.018	.011	.008	.006	
8.0	.093	.063	.043	.080	.055	.037	.055	.039	.027	.032	.023	.016	.010	.007	.005	
9.0	.087	.058	.038	.075	.050	.033	.052	.035	.023	.030	.021	.014	.010	.007	.005	
10.0	.082	.053	.033	.071	.046	.029	.049	.032	.021	.029	.019	.012	.009	.006	.004	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Xie Bi
 Test Date:2023-11-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.286
 Humidity:65.0%
 Test Distance:6.810m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:232.3V I:0.0345A P:7.047W PF:0.8800 Lamp Flux:473.716x1 lm											
NAME: 81151LED						TYPE:			WEIGHT:		
SPEC.:P-81151LED-7W3018-CI15036R90-LDY500						DIM.:			SERIAL No.:		
MFR.: CETTIGA						SUR.:			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		7.5	8.2	7.7	8.3	8.5	7.9	8.6	8.1	8.7	8.9
	3H	7.4	8.0	7.6	8.2	8.4	7.8	8.4	8.0	8.6	8.8
	4H	7.3	7.9	7.6	8.1	8.4	7.7	8.3	8.0	8.5	8.7
	6H	7.3	7.8	7.6	8.1	8.3	7.6	8.2	7.9	8.4	8.7
	8H	7.2	7.8	7.5	8.0	8.3	7.6	8.1	7.9	8.4	8.6
	12H	7.2	7.7	7.5	8.0	8.2	7.5	8.1	7.9	8.3	8.6
4H	2H	7.3	7.9	7.6	8.1	8.3	7.7	8.3	8.0	8.5	8.7
	3H	7.2	7.7	7.5	8.0	8.2	7.6	8.1	7.9	8.3	8.6
	4H	7.1	7.6	7.4	7.9	8.2	7.5	8.0	7.8	8.3	8.6
	6H	7.0	7.5	7.4	7.8	8.1	7.4	7.8	7.8	8.1	8.5
	8H	7.0	7.4	7.4	7.7	8.1	7.3	7.7	7.7	8.1	8.5
	12H	6.9	7.3	7.3	7.7	8.1	7.3	7.6	7.7	8.0	8.4
8H	4H	7.0	7.4	7.4	7.7	8.1	7.3	7.7	7.7	8.1	8.4
	6H	6.9	7.2	7.3	7.6	8.0	7.2	7.6	7.7	8.0	8.4
	8H	6.8	7.1	7.3	7.5	8.0	7.2	7.5	7.6	7.9	8.3
	12H	6.8	7.0	7.3	7.5	8.0	7.1	7.4	7.6	7.8	8.3
12H	4H	6.9	7.3	7.3	7.6	8.0	7.3	7.6	7.7	8.0	8.4
	6H	6.8	7.1	7.3	7.5	8.0	7.2	7.5	7.6	7.9	8.3
	8H	6.8	7.0	7.2	7.5	7.9	7.1	7.4	7.6	7.8	8.3
Variations with the observer position at spacings:											
S = 1.0H	+ 2.4 / - 9.7					+ 2.8 / -11.2					
1.5H	+ 4.0 / - 9.8					+ 5.2 / -10.8					
2.0H	+ 7.5 / - 6.3					+ 7.1 / - 4.6					

CIE Pub.117 Corrected 473.7 lm Total Lamp Luminous Flux.(8log(F/F0) = -2.6)

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2023-11-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.286
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:232.3V I:0.0345A P:7.047W PF:0.8800 Lamp Flux:473.716x1 lm		
NAME: 81151LED	TYPE:	WEIGHT:
SPEC.:P-81151LED-7W3018-CI15036R90-LDY500	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	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) $k(RI) \times RCR = 5$									
$k = 0.60$	89	83	80	89	83	79	88	83	79	76
0.80	96	91	87	96	91	87	95	90	87	83
1.00	100	95	92	100	95	91	98	94	91	87
1.25	104	99	96	103	99	96	101	98	95	91
1.50	107	102	99	106	102	99	103	100	98	93
2.00	109	105	102	108	104	101	105	102	100	95
2.50	111	107	104	109	106	103	106	103	101	96
3.00	112	109	106	110	108	105	107	105	103	97
4.00	114	112	109	112	110	108	108	107	105	98
5.00	115	113	111	113	111	110	109	108	107	99
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2023-11-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.286
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:232.3V I:0.0345A P:7.047W PF:0.8800 Lamp Flux:473.716x1 lm		
NAME: 81151LED	TYPE:	WEIGHT:
SPEC.:P-81151LED-7W3018-CI15036R90-LDY500	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	PROTECTION ANGLE:

Conical surface Flux(90deg):

465.11 lm

%lum = 98.2%

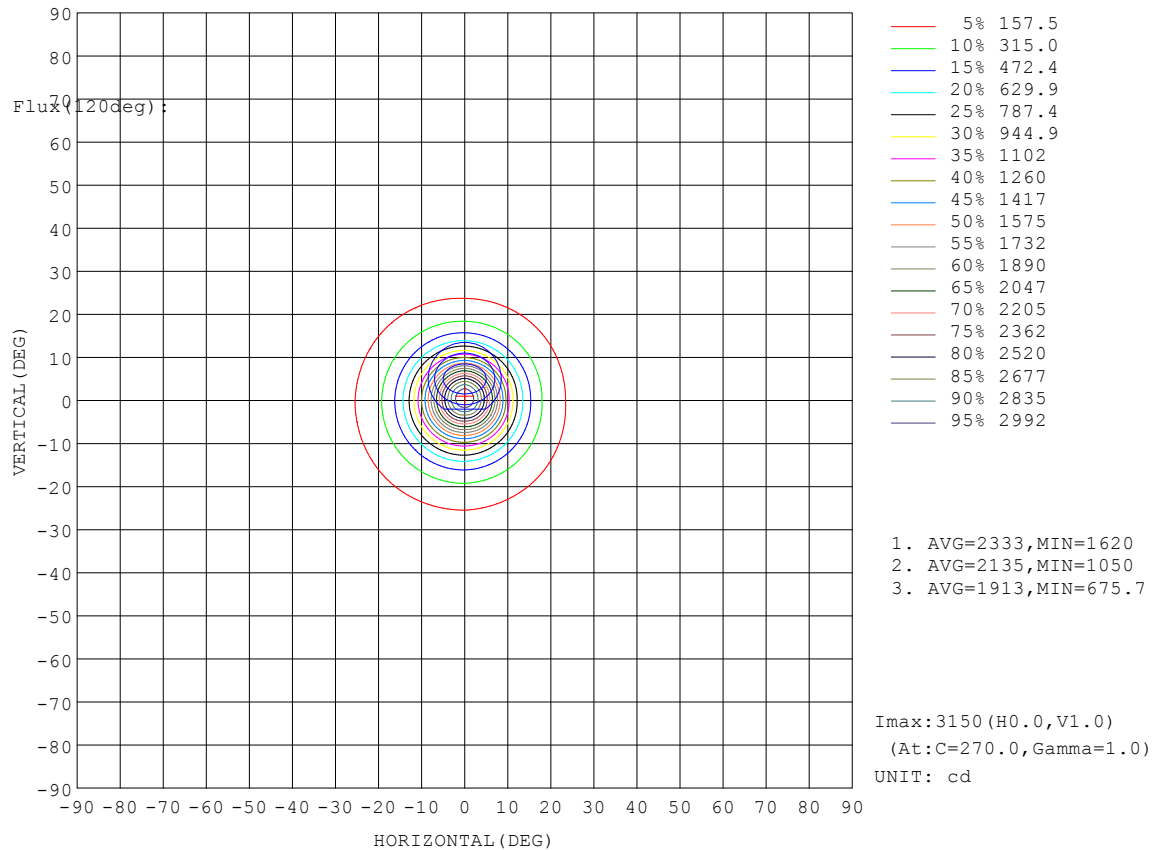
%lamp = 98.2%

Conical surface Flux(120deg):

470.93 lm

%lum = 99.4%

%lamp = 99.4%



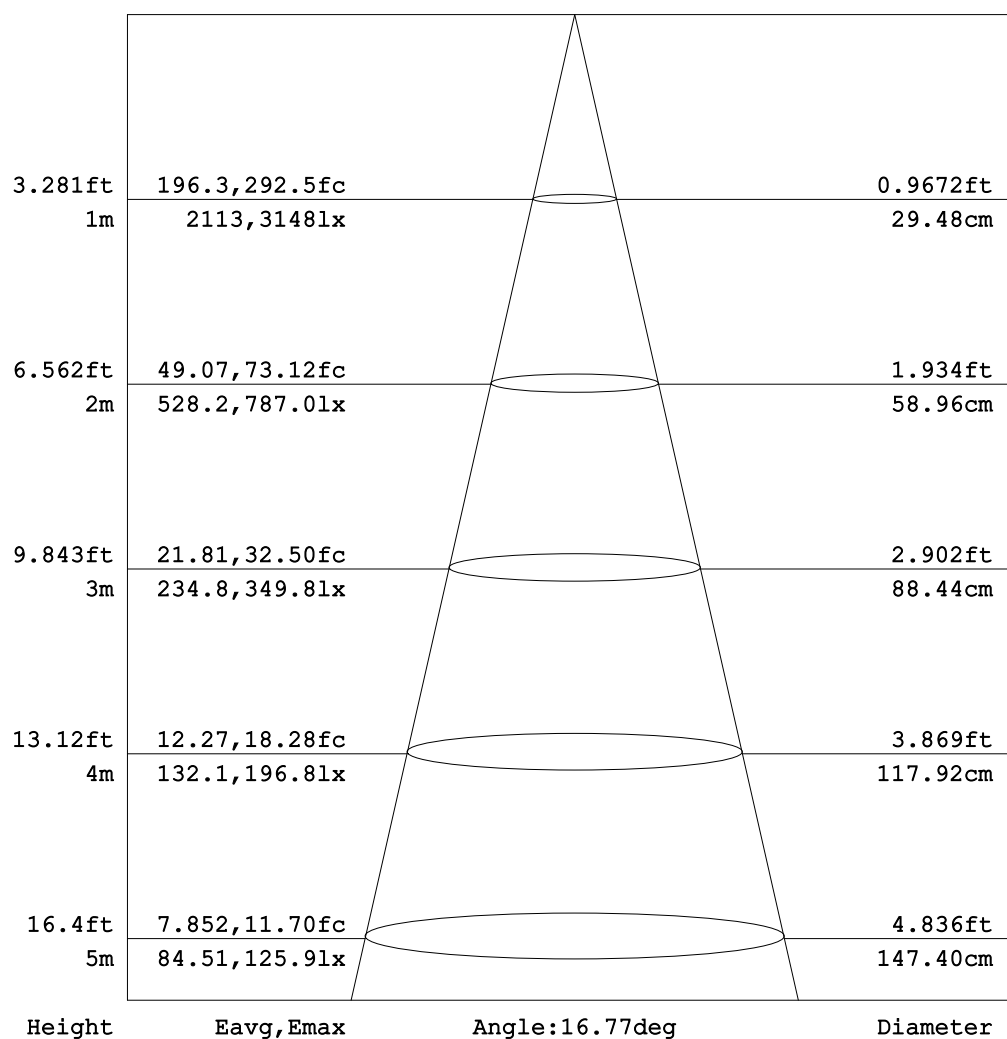
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2023-11-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.286
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

AAI Figure

Test:U:232.3V I:0.0345A P:7.047W PF:0.8800 Lamp Flux:473.716x1 lm		
NAME: 81151LED	TYPE:	WEIGHT:
SPEC.:P-81151LED-7W3018-CI15036R90-LDY500	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	PROTECTION ANGLE:

Flux out:166.5 lm



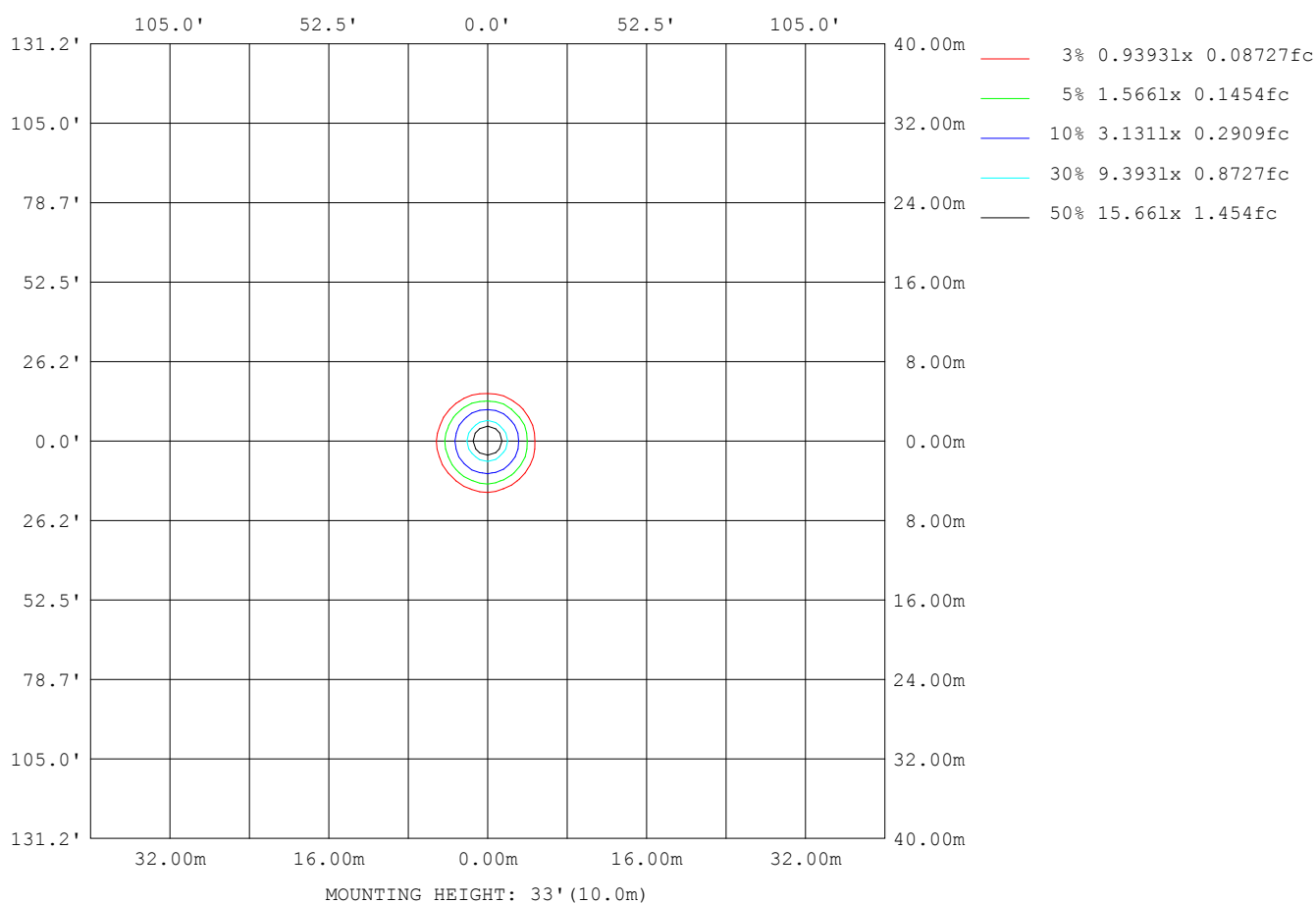
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Xie Bi
Test Date: 2023-11-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.286
Humidity: 65.0%
Test Distance: 6.810m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

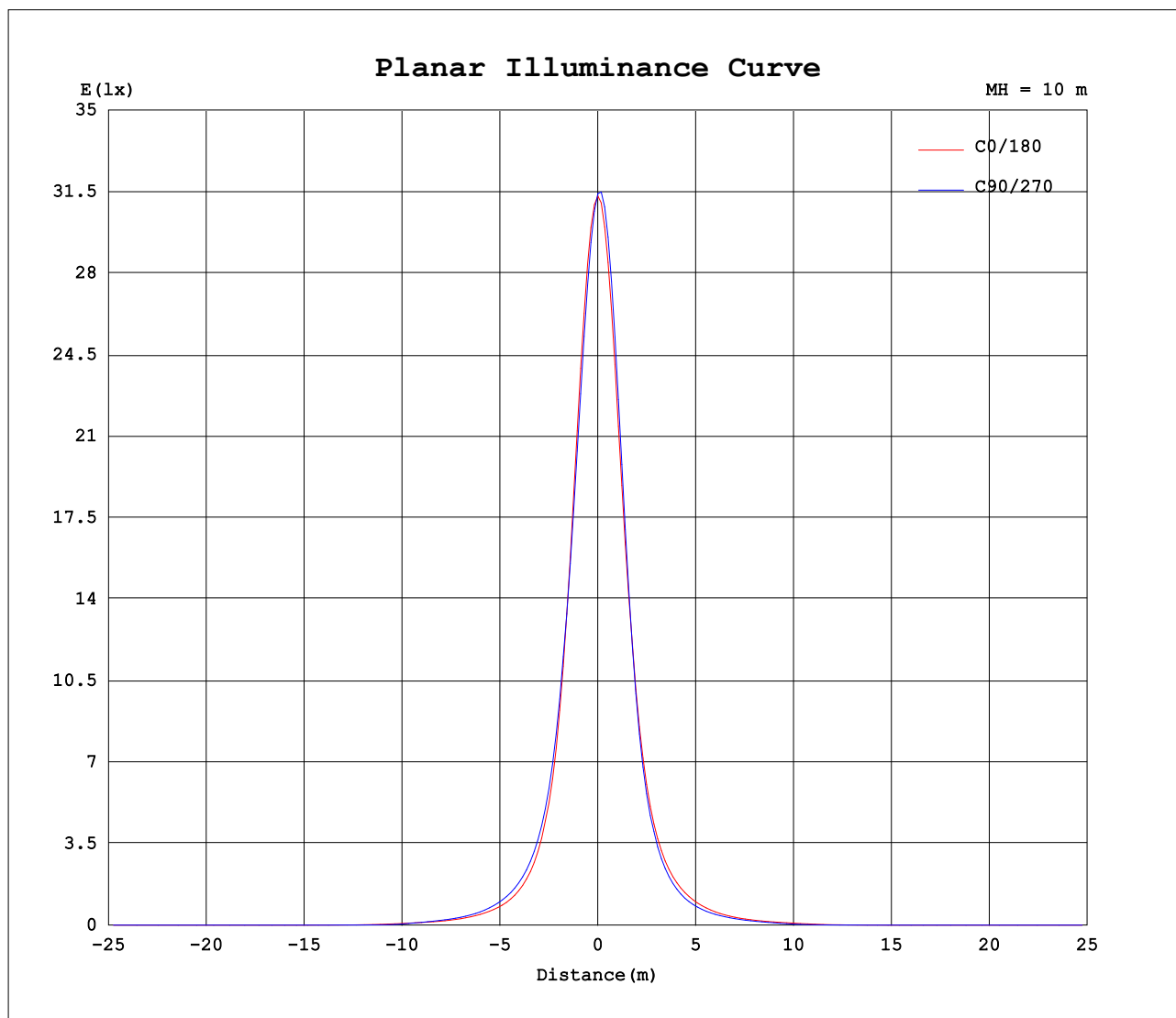
Test:U:232.3V I:0.0345A P:7.047W PF:0.8800 Lamp Flux:473.716x1 lm		
NAME: 81151LED	TYPE:	WEIGHT:
SPEC.:P-81151LED-7W3018-CI15036R90-LDY500	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2023-11-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.286
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Xie Bi
Test Date: 2023-11-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.286
Humidity: 65.0%
Test Distance: 6.810m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:232.3V I:0.0345A P:7.047W PF:0.8800 Lamp Flux:473.716x1 lm		
NAME: 81151LED	TYPE:	WEIGHT:
SPEC.:P-81151LED-7W3018-CI15036R90-LDY500	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	90	180	270															
0	3131	3141	3131	3141															
5	2418	2309	2436	2555															
10	1164	1207	1265	1255															
15	498	555	566	522															
20	239	287	288	251															
25	132	165	165	135															
30	80.9	99.9	99.5	80.6															
35	50.4	61.5	61.9	50.5															
40	32.7	38.1	39.7	31.3															
45	20.0	13.4	24.2	12.4															
50	6.41	2.63	6.82	2.82															
55	1.75	1.20	1.69	1.31															
60	1.02	1.02	0.99	1.11															
65	0.86	0.82	0.84	0.91															
70	0.66	0.56	0.64	0.65															
75	0.44	0.34	0.41	0.41															
80	0.25	0.16	0.24	0.21															
85	0.10	0.02	0.09	0.05															
90	0.00	0.00	0.00	0.00															
95	0.00	0.00	0.00	0.00															
100	0.00	0.00	0.00	0.00															
105	0.00	0.00	0.00	0.00															
110	0.00	0.00	0.00	0.00															
115	0.00	0.00	0.00	0.00															
120	0.00	0.00	0.00	0.00															
125	0.02	0.01	0.01	0.00															
130	0.06	0.04	0.03	0.02															
135	0.11	0.09	0.06	0.06															
140	0.21	0.17	0.10	0.11															
145	0.39	0.34	0.17	0.20															
150	0.72	0.67	0.32	0.36															
155	1.30	1.27	0.62	0.66															
160	1.97	1.95	1.15	1.18															
165	2.32	2.31	1.69	1.72															
170	2.22	2.20	1.91	1.97															
175	1.88	1.88	1.80	1.87															
180	1.75	1.82	1.75	1.82															

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Xie Bi
 Test Date:2023-11-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.286
 Humidity:65.0%
 Test Distance:6.810m [K=1.0000]
 Remarks: