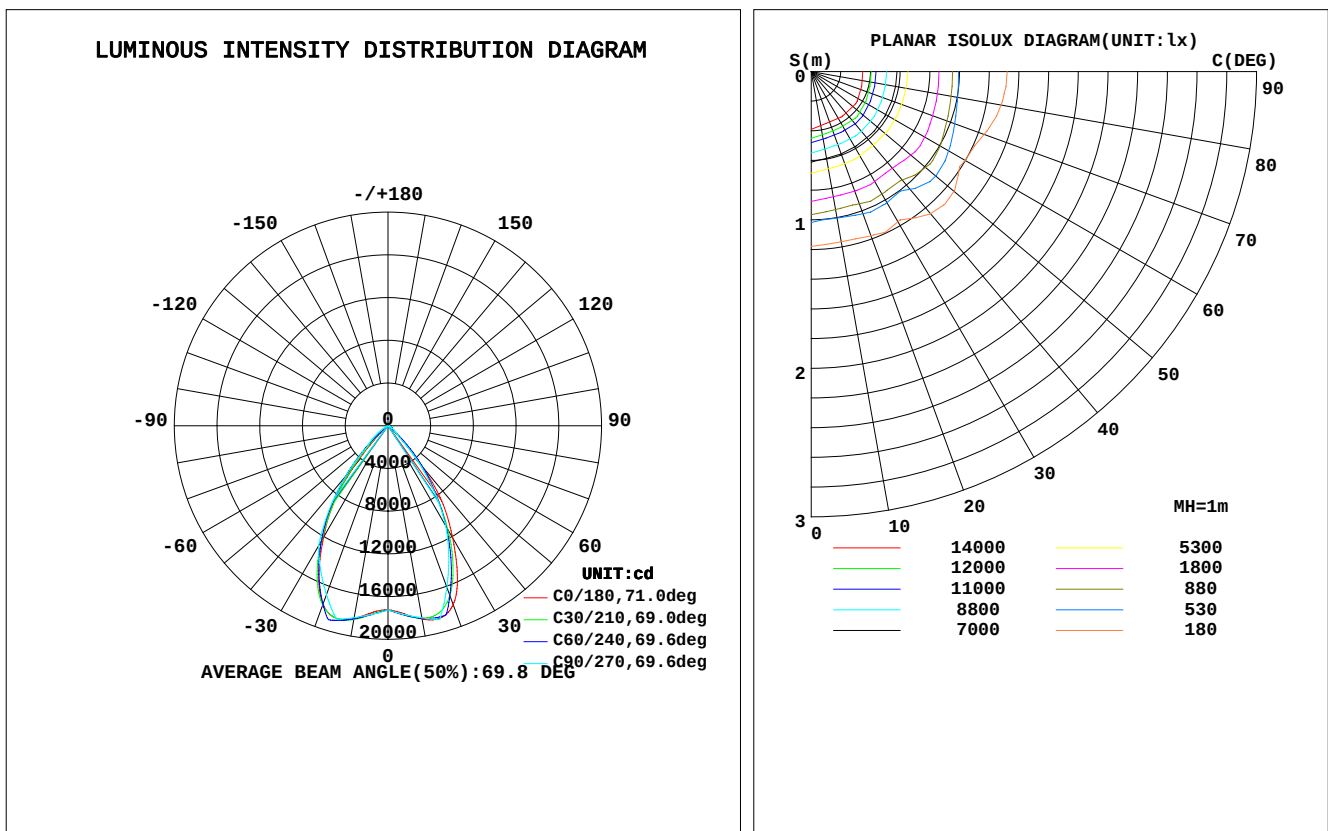


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.2V I:0.6810A P:145.6W PF:0.9712 Lamp Flux:21493.3x1 lm		
NAME: GLM-MXHB150(AH) 60°	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 147.60 lm/W			
MODEL		I _{max} (cd)	18999	S/MH(C0/180)	1.03
NOMINAL POWER(W)		LOR(%)	100.0	S/MH(C90/270)	1.06
RATED VOLTAGE(V)	230.0	TOTAL FLUX(lm)	21493	η UP, DN(C0-180)	0.0, 47.8
NOMINAL FLUX(lm)	21493.3	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 52.2
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.05



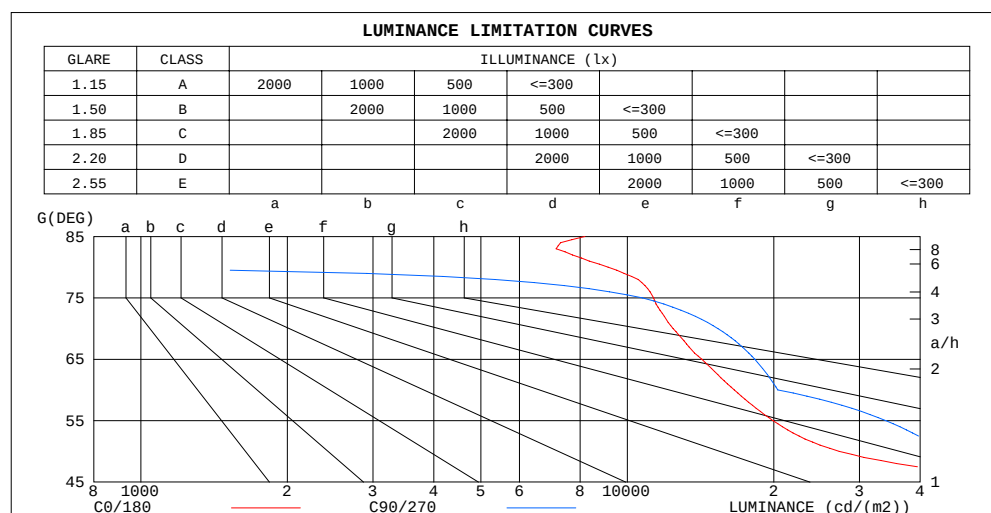
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-03-18

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:7.500m [K=1.113]
Remarks:

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	1768	1780	1775	1769	1757	1774	1774	1778	0- 5	419.5	419.5	1.95,1.95
10	1838	1830	1826	1811	1831	1841	1825	1829	5- 10	1292	1711	7.96,7.96
15	1868	1830	1876	1802	1867	1879	1875	1844	10- 15	2189	3900	18.1,18.1
20	1784	1750	1612	1715	1779	1854	1684	1795	15- 20	2961	6860	31.9,31.9
25	1538	1444	1348	1438	1532	1587	1494	1555	20- 25	3356	10216	47.5,47.5
30	1210	1100	1083	1114	1209	1253	1303	1264	25- 30	3354	13570	63.1,63.1
35	902.9	766.7	766.0	768.4	896.7	919.4	958.7	960.5	30- 35	3009	16579	77.1,77.1
40	504.7	447.9	449.0	419.4	480.5	508.0	614.7	640.4	35- 40	2298	18876	87.8,87.8
45	165.5	230.8	131.9	209.4	144.7	320.0	270.6	342.6	40- 45	1323	20199	94,94
50	60.67	102.9	99.68	94.29	49.81	130.1	187.8	140.0	45- 50	566.6	20766	96.6,96.6
55	39.55	44.17	67.48	43.64	30.77	32.62	105.1	36.77	50- 55	290.7	21057	98,98
60	28.70	33.18	35.27	32.48	20.58	22.15	22.32	24.75	55- 60	179.7	21236	98.8,98.8
65	20.80	23.42	26.72	22.93	13.24	13.43	15.88	14.89	60- 65	110.8	21347	99.3,99.3
70	14.70	15.59	18.17	15.28	7.700	7.121	9.441	7.897	65- 70	76.43	21424	99.7,99.7
75	10.14	9.375	9.622	8.977	3.626	3.115	3.001	3.475	70- 75	47.10	21471	99.9,99.9
80	5.487	3.452	0	3.097	0.0016	0	0	0	75- 80	19.86	21491	100,100
85	2.467	0	0	0	0	0	0	0	80- 85	2.536	21493	100,100
90	1.946	0	0	0	0	0	0	0	85- 90	0.2224	21493	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			
LUMINOUS INTENSITY:×10cd									UNIT:lm			



LUMINANCE cd/(m2)		
G(°)	C0/180	C90/270
85	8182	0
80	9133	0
75	11321	10745
70	12423	15357
65	14224	18276
60	16589	20390
55	19930	34001
50	27279	44819
45	67665	53904

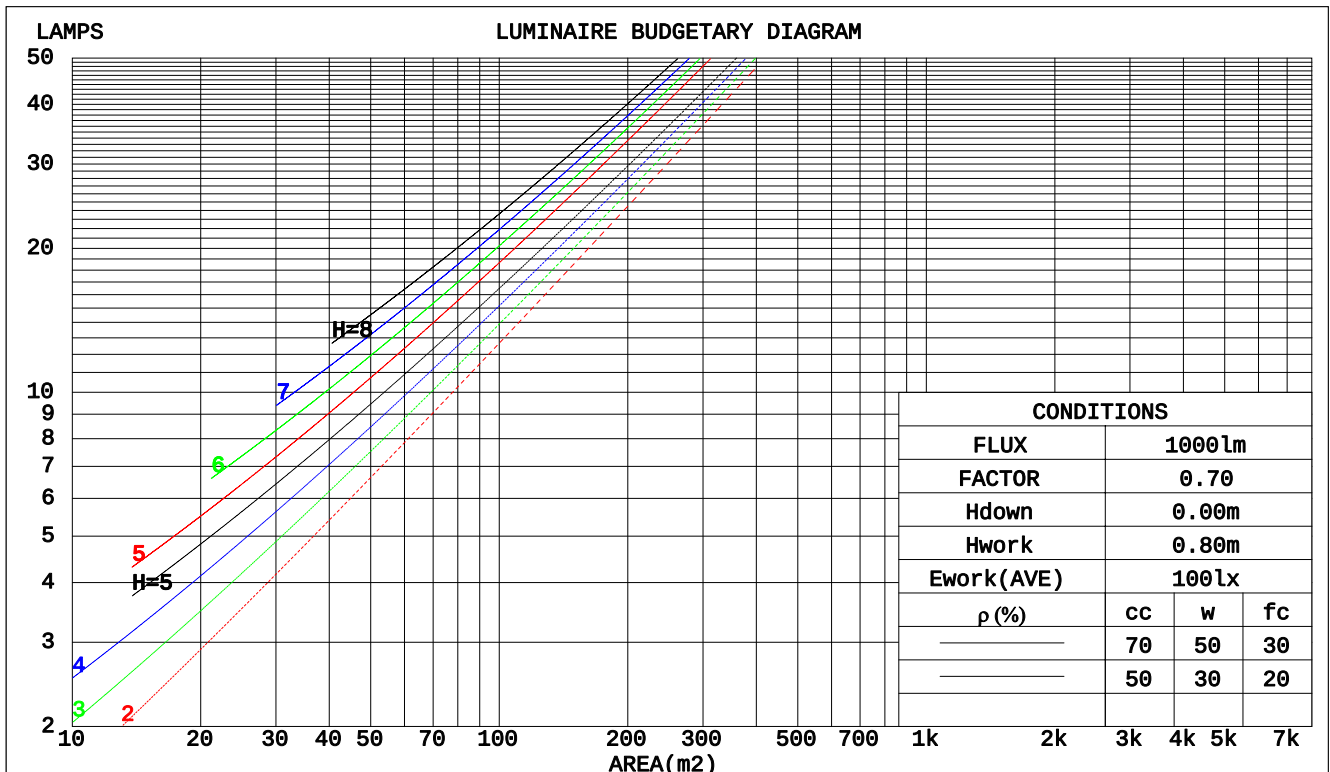
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-03-18

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.290
 Humidity:65.0%
 Test Distance:7.500m [K=1.1133]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.2V I:0.6810A P:145.6W PF:0.9712 Lamp Flux:21493.3x1 lm		
NAME: GLM-MXHB150(AH) 60°	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	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	1.10	1.08	1.05	1.08	1.06	1.04	1.04	1.02	1.00	1.00	.99	.97	.97	.96	.94	.93
2.0	1.02	.98	.94	1.00	.96	.93	.97	.94	.91	.94	.91	.89	.91	.89	.87	.85
3.0	.94	.89	.85	.93	.88	.84	.90	.86	.83	.88	.84	.81	.85	.83	.80	.78
4.0	.87	.82	.77	.86	.81	.77	.84	.79	.76	.82	.78	.75	.80	.77	.74	.72
5.0	.81	.75	.70	.80	.74	.70	.78	.73	.69	.77	.72	.69	.75	.71	.68	.67
6.0	.76	.69	.65	.75	.69	.65	.73	.68	.64	.72	.67	.64	.71	.66	.63	.62
7.0	.71	.64	.60	.70	.64	.60	.69	.63	.59	.68	.63	.59	.66	.62	.59	.57
8.0	.66	.60	.55	.66	.60	.55	.65	.59	.55	.63	.58	.55	.62	.58	.55	.53
9.0	.62	.56	.52	.62	.56	.52	.61	.55	.51	.60	.55	.51	.59	.54	.51	.50
10.0	.58	.52	.48	.58	.52	.48	.57	.52	.48	.56	.51	.48	.56	.51	.48	.46



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-03-18

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.290
 Humidity:65.0%
 Test Distance:7.500m [K=1.1133]
 Remarks:

WEC AND CCEC

Test:U:220.2V I:0.6810A P:145.6W PF:0.9712 Lamp Flux:21493.3x1 lm								
NAME: GLM-MXHB150(AH) 60°				TYPE:LED			WEIGHT:	
SPEC.:				DIM.:			SERIAL No.:1	
MFR.:				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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.189	.107	.034	.182	.104	.033	.170	.097	.031	.158	.091	.029	.147	.085	.028	
2.0	.182	.100	.031	.177	.097	.030	.166	.092	.029	.156	.088	.027	.147	.083	.026	
3.0	.174	.093	.028	.170	.091	.027	.160	.087	.026	.152	.083	.026	.144	.080	.025	
4.0	.166	.087	.025	.162	.085	.025	.154	.082	.024	.147	.079	.024	.140	.076	.023	
5.0	.159	.081	.023	.155	.080	.023	.148	.077	.023	.142	.075	.022	.135	.072	.022	
6.0	.152	.076	.022	.148	.075	.022	.142	.073	.021	.136	.071	.021	.131	.069	.020	
7.0	.145	.072	.020	.142	.071	.020	.136	.069	.020	.131	.067	.020	.126	.066	.019	
8.0	.138	.068	.019	.136	.067	.019	.131	.065	.019	.126	.064	.018	.122	.063	.018	
9.0	.132	.064	.018	.130	.063	.018	.126	.062	.018	.121	.061	.017	.118	.060	.017	
10.0	.127	.061	.017	.125	.060	.017	.121	.059	.017	.117	.058	.017	.113	.057	.016	

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						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.172	.157	.144	.147	.135	.124	.101	.093	.086	.058	.054	.050	.019	.017	.016	
2.0	.158	.132	.111	.135	.114	.096	.093	.079	.067	.053	.046	.039	.017	.015	.013	
3.0	.146	.114	.088	.125	.098	.076	.086	.068	.053	.050	.040	.031	.016	.013	.010	
4.0	.136	.099	.071	.117	.086	.061	.081	.060	.043	.047	.035	.026	.015	.011	.008	
5.0	.128	.088	.058	.110	.076	.050	.076	.053	.036	.044	.031	.021	.014	.010	.007	
6.0	.121	.079	.048	.104	.068	.042	.072	.048	.030	.042	.028	.018	.013	.009	.006	
7.0	.115	.071	.041	.099	.062	.035	.068	.043	.025	.040	.026	.015	.013	.008	.005	
8.0	.109	.065	.035	.094	.057	.030	.065	.040	.021	.038	.023	.013	.012	.008	.004	
9.0	.104	.060	.030	.090	.052	.026	.062	.037	.019	.036	.022	.011	.012	.007	.004	
10.0	.100	.056	.026	.086	.048	.023	.060	.034	.016	.035	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-03-18

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:7.500m [K=1.1133]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.2V I:0.6810A P:145.6W PF:0.9712 Lamp Flux:21493.3x1 lm											
NAME: GLM-MXHB150(AH) 60°					TYPE:LED			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:1			
MFR.:					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		23.8	24.8	24.0	25.0	25.2	24.1	25.2	24.4	25.3	25.5
	3H	23.7	24.7	24.0	24.9	25.1	24.1	25.0	24.4	25.2	25.4
	4H	23.7	24.6	23.9	24.8	25.0	24.1	24.9	24.3	25.2	25.4
	6H	23.6	24.4	23.9	24.7	24.9	24.0	24.8	24.3	25.1	25.3
	8H	23.6	24.4	23.9	24.6	24.9	23.9	24.7	24.2	25.0	25.3
	12H	23.5	24.3	23.8	24.6	24.8	23.9	24.6	24.2	24.9	25.2
4H	2H	23.6	24.5	23.9	24.7	25.0	23.9	24.8	24.2	25.0	25.3
	3H	23.6	24.3	23.9	24.6	24.9	23.9	24.7	24.3	25.0	25.3
	4H	23.5	24.2	23.9	24.5	24.8	23.9	24.6	24.3	24.9	25.2
	6H	23.5	24.1	23.9	24.4	24.8	23.9	24.5	24.2	24.8	25.1
	8H	23.4	24.0	23.8	24.3	24.7	23.8	24.4	24.2	24.7	25.1
	12H	23.4	23.9	23.8	24.3	24.7	23.8	24.3	24.2	24.6	25.0
8H	4H	23.4	24.0	23.8	24.3	24.7	23.8	24.4	24.2	24.7	25.1
	6H	23.4	23.8	23.8	24.2	24.7	23.7	24.2	24.2	24.6	25.0
	8H	23.3	23.7	23.8	24.2	24.6	23.7	24.1	24.1	24.5	25.0
	12H	23.3	23.6	23.8	24.1	24.6	23.6	24.0	24.1	24.4	24.9
12H	4H	23.4	23.9	23.8	24.3	24.7	23.8	24.3	24.2	24.7	25.1
	6H	23.3	23.7	23.8	24.2	24.6	23.7	24.1	24.1	24.5	25.0
	8H	23.3	23.6	23.8	24.1	24.6	23.6	24.0	24.1	24.4	24.9
Variations with the observer position at spacings:											
S = 1.0H	+ 3.4 / - 7.0					+ 2.2 / - 5.7					
1.5H	+ 5.7 / - 6.3					+ 4.5 / - 5.3					
2.0H	+ 4.9 / - 2.1					+ 2.7 / - 2.0					

CIE Pub.117 Corrected 21493 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.7)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-03-18

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:7.500m [K=1.1133]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.2V I:0.6810A P:145.6W PF:0.9712 Lamp Flux:21493.3x1 lm		
NAME: GLM-MXHB150(AH) 60°	TYPE: LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	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) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	73	83	77	73	82	76	72	69
0.80	92	85	81	91	85	81	90	84	81	77
1.00	97	91	87	96	90	87	95	90	86	82
1.25	101	96	92	100	95	92	98	94	91	86
1.50	104	99	96	103	99	95	101	97	94	89
2.00	108	103	100	106	102	99	103	100	97	92
2.50	109	105	102	108	104	101	105	102	99	93
3.00	111	107	105	109	106	103	106	103	101	95
4.00	113	110	108	111	109	106	107	105	104	97
5.00	115	112	110	112	110	108	108	107	105	98
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:
Test Date:2020-03-18

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:7.500m [K=1.1133]
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.2V I:0.6810A P:145.6W PF:0.9712 Lamp Flux:21493.3x1 lm		
NAME: GLM-MXHB150(AH) 60°	TYPE: LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	PROTECTION ANGLE:

Conical surface Flux(90deg):

20199 lm

%lum = 94.0%

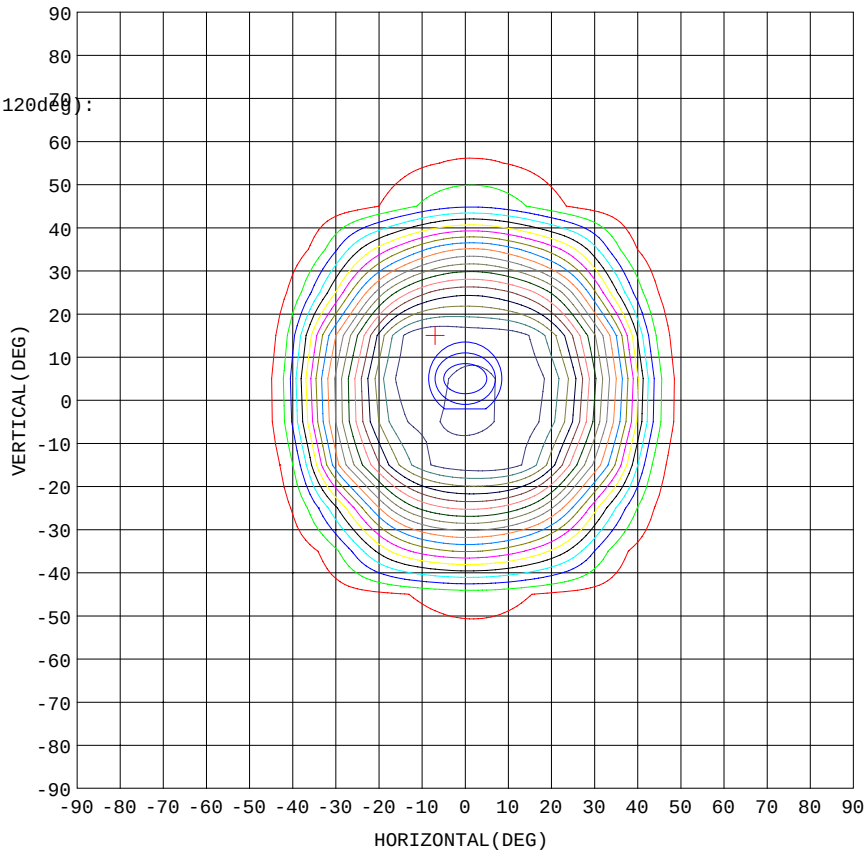
%lamp = 94.0%

Conical surface Flux(120deg):

21236 lm

%lum = 98.8%

%lamp = 98.8%



1. AVG=0, MIN=0
2. AVG=17822, MIN=17242
3. AVG=17913, MIN=17242

Imax:19010(H-7.0,V15.0)
(At:C=240.0,Gamma=17.0)

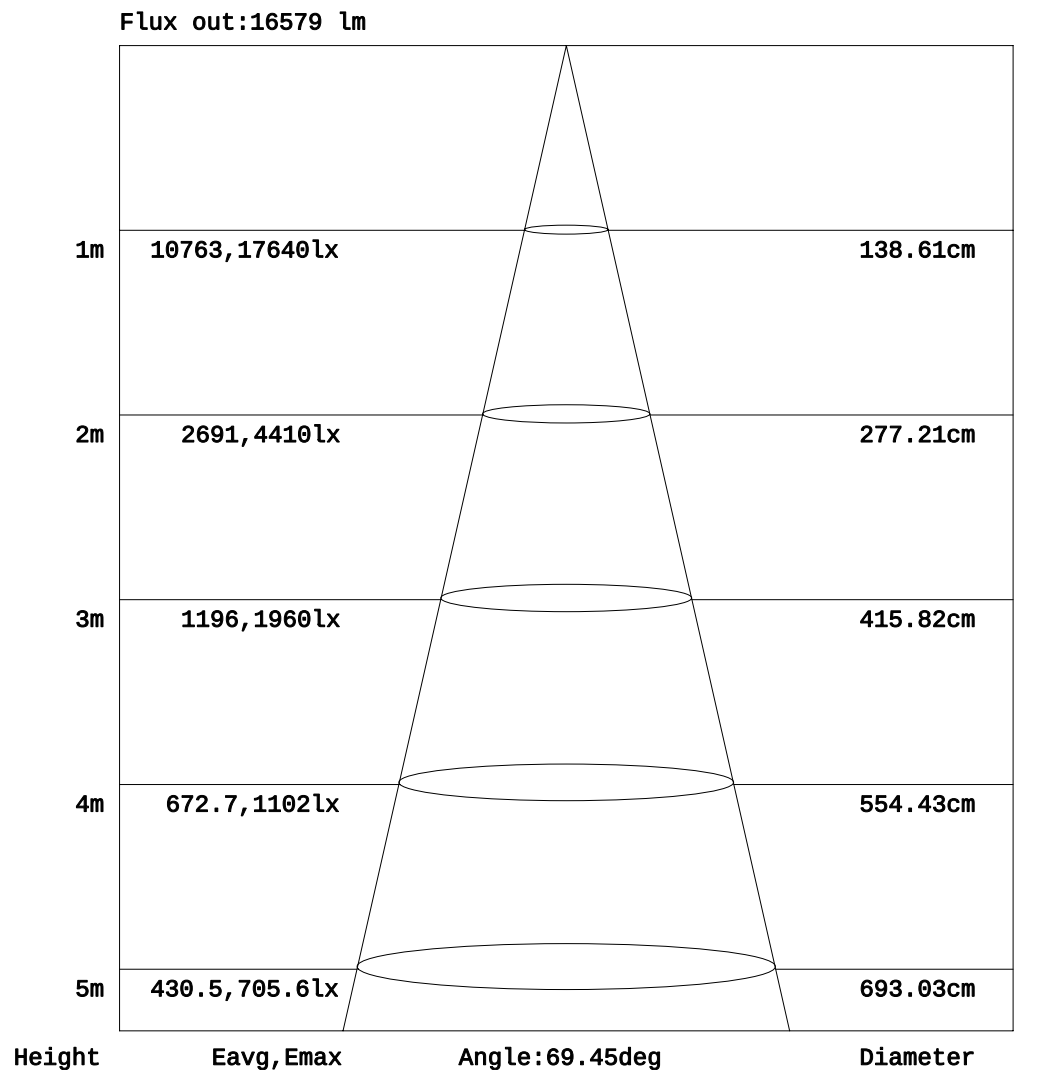
UNIT: cd

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-03-18

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:7.500m [K=1.1133]
Remarks:

AAI Figure

Test:U:220.2V I:0.6810A P:145.6W PF:0.9712 Lamp Flux:21493.3x1 lm		
NAME: GLM-MXHB150(AH) 60°	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	PROTECTION ANGLE:



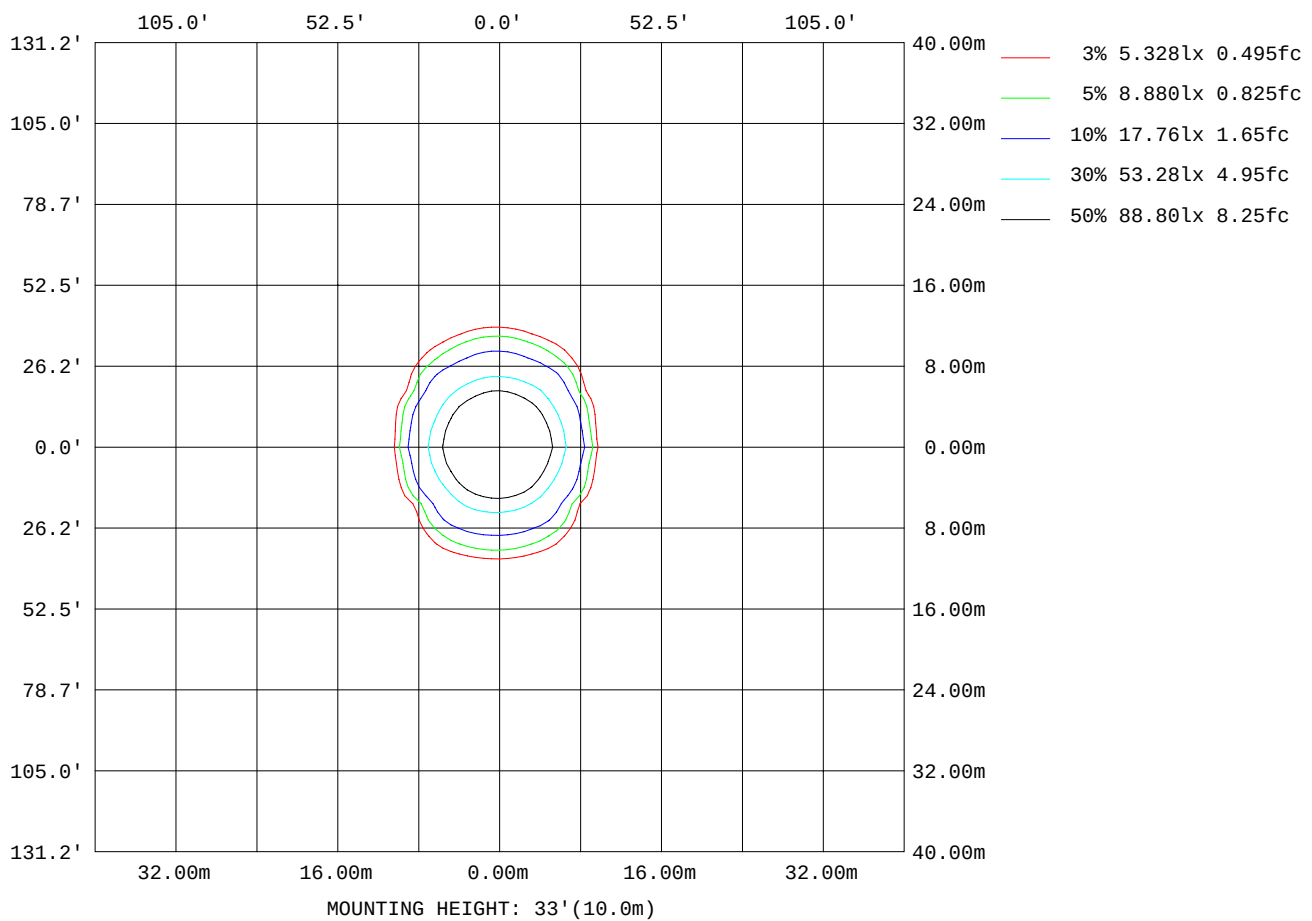
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-03-18

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.290
 Humidity:65.0%
 Test Distance:7.500m [K=1.1133]
 Remarks:

ISOLUX DIAGRAM

Test:U:220.2V I:0.6810A P:145.6W PF:0.9712 Lamp Flux:21493.3x1 lm		
NAME: GLM-MXHB150(AH) 60°	TYPE: LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-03-18

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:7.500m [K=1.1133]
Remarks:

LED Avg.L Report

Test:U:220.2V I:0.6810A P:145.6W PF:0.9712 Lamp Flux:21493.3x1 lm		
NAME: GLM-MXHB150(AH) 60°	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.:	SUR.:	PROTECTION ANGLE:

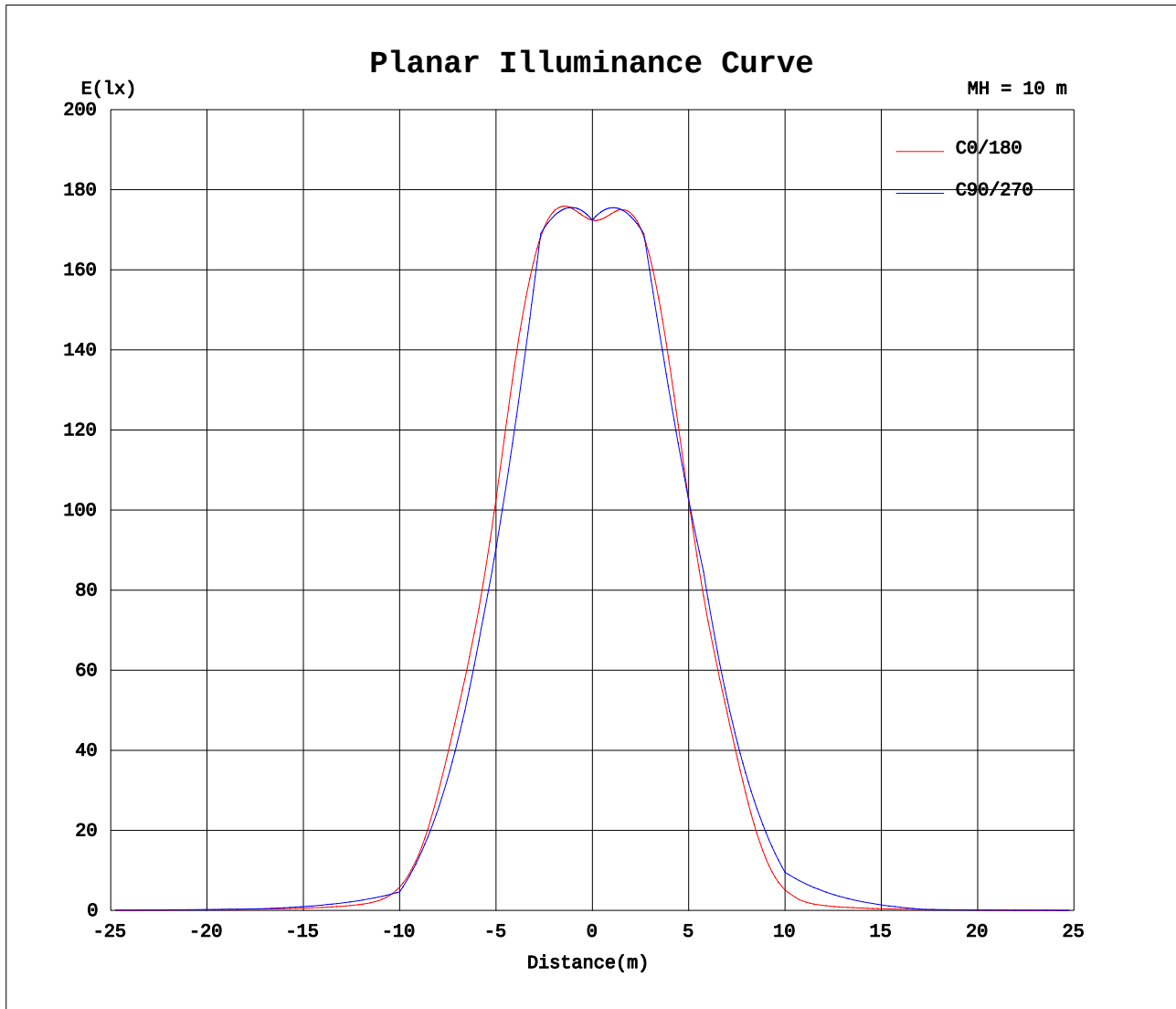
AvgL	cd/m2
L_0~180(65)av	11639
L_0~180(75)av	7685
L_0~180(85)av	4091
L_90~270(65)av	14568
L_90~270(75)av	7048
L_90~270(85)av	0
L_45(65)av	12765
L_45(75)av	6963
L_45(85)av	0

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-03-18

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:7.500m [K=1.1133]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2020-03-18

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.290
Humidity: 65.0%
Test Distance: 7.500m [K=1.1133]
Remarks:

