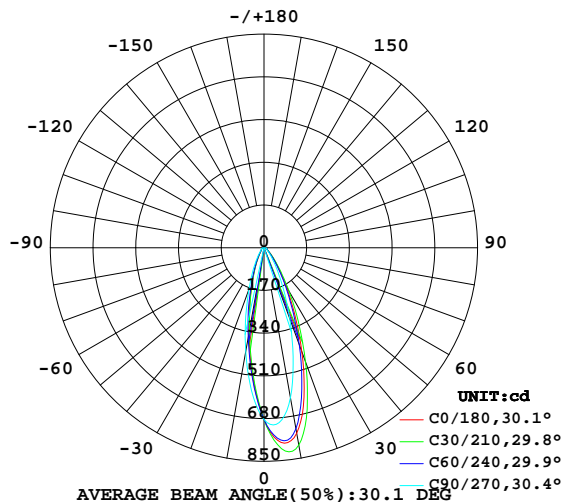


LUMINAIRE PHOTOMETRIC TEST REPORT

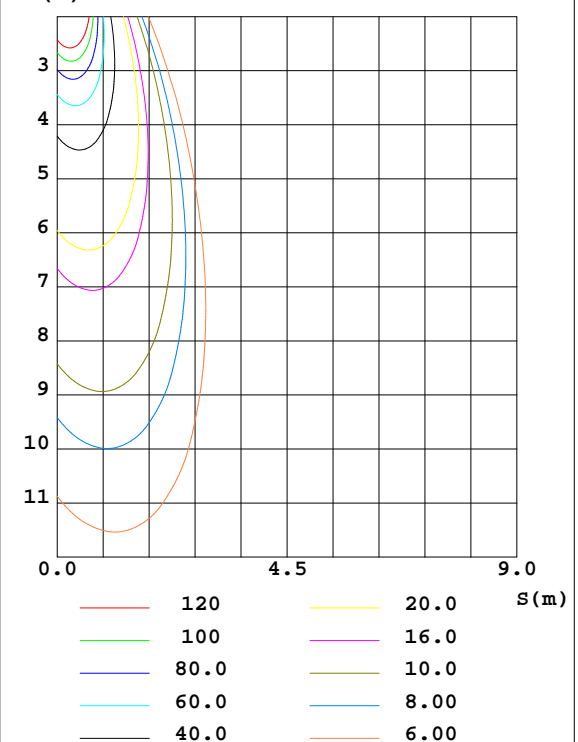
Test:U:0V I:0A P:0W PF:0 Lamp Flux:345.658x1 lm		
NAME: LED Spotlight	TYPE: MR16 GU5.3	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:20150918003
MFR.: WEJ lighting	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	WHE503MR16-V4DW	I _{max} (cd)	818.4	S/MH(C0/180)	0.72
NOMINAL POWER(W)	5	LOR(%)	100.0	S/MH(C90/270)	0.61
RATED VOLTAGE(V)	12	TOTAL FLUX(lm)	345.77	η UP,DN(C0-180)	0.0,60.3
NOMINAL FLUX(lm)	345.658	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,39.8
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	12	η down(%)	100.0	CIBSE SHR MAX	0.55

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:TGB
Test Date:2015-09-18

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:8.820m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	$\%lum, lamp$
10	750.0	764.9	606.2	428.1	345.7	348.9	419.3	595.9	0- 10	57.75	57.75	16.7,16.7
20	440.9	446.8	299.8	176.7	130.0	133.5	175.8	311.3	10- 20	108.3	166.0	48,48
30	175.8	181.4	112.8	65.21	48.76	51.20	67.70	120.0	20- 30	78.25	244.3	70.6,70.7
40	65.33	65.11	42.64	27.37	22.08	23.31	29.39	48.00	30- 40	41.10	285.4	82.5,82.6
50	27.30	26.68	19.69	15.58	13.25	14.21	16.25	22.57	40- 50	21.59	306.9	88.8,88.8
60	14.95	15.02	13.49	12.76	11.72	12.03	13.02	14.58	50- 60	14.20	321.1	92.9,92.9
70	13.00	12.89	11.97	10.12	7.673	7.763	9.778	12.64	60- 70	12.08	333.2	96.4,96.4
80	9.422	9.660	7.581	4.162	1.971	2.051	3.877	7.789	70- 80	8.959	342.2	99,99
90	3.547	3.465	1.659	0.0610	0.0747	0.0743	0.0454	1.580	80- 90	3.589	345.8	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		

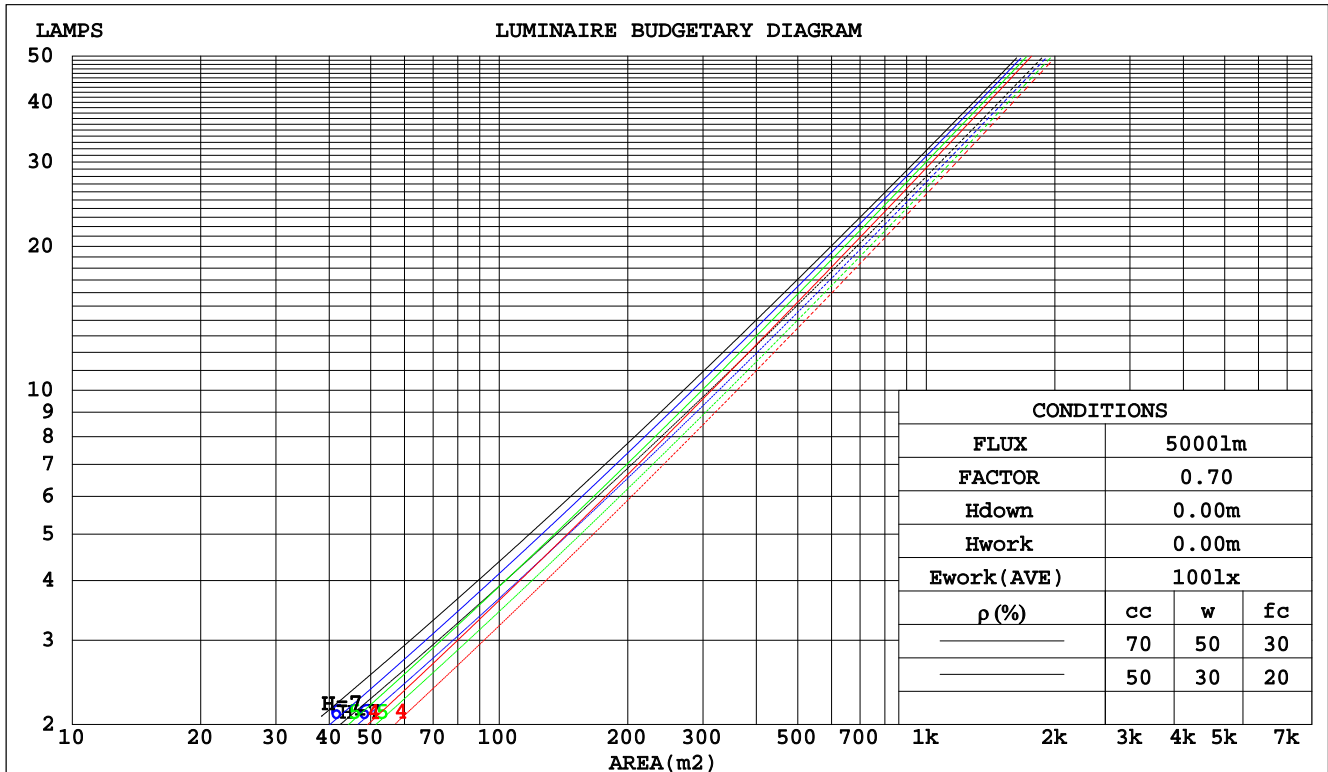
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:TGB
 Test Date:2015-09-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
 Humidity:65.0%
 Test Distance:8.820m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:0V I:0A P:0W PF:0 Lamp Flux:345.658x1 lm		
NAME: LED Spotlight	TYPE: MR16 GU5.3	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:20150918003
MFR.: WEJ lighting	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						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	1.09	1.07	1.04	1.07	1.05	1.02	1.03	1.01	.99	.99	.98	.96	.96	.95	.93	.92
2.0	1.01	.97	.93	.99	.95	.92	.96	.93	.90	.93	.90	.88	.90	.88	.86	.84
3.0	.94	.89	.84	.93	.88	.84	.90	.86	.82	.87	.84	.81	.85	.82	.80	.78
4.0	.88	.82	.78	.87	.81	.77	.85	.80	.76	.83	.79	.75	.81	.77	.74	.73
5.0	.83	.77	.72	.82	.76	.72	.80	.75	.71	.78	.74	.70	.77	.73	.70	.68
6.0	.78	.72	.67	.77	.71	.67	.76	.71	.67	.74	.70	.66	.73	.69	.66	.64
7.0	.74	.68	.63	.73	.67	.63	.72	.67	.63	.71	.66	.63	.69	.65	.62	.61
8.0	.70	.64	.60	.69	.64	.60	.68	.63	.60	.67	.63	.59	.66	.62	.59	.58
9.0	.67	.61	.57	.66	.61	.57	.65	.60	.57	.64	.60	.56	.64	.59	.56	.55
10.0	.64	.58	.54	.63	.58	.54	.62	.57	.54	.62	.57	.54	.61	.57	.54	.52



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:TGB
Test Date:2015-09-18

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:8.820m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:0V I:0A P:0W PF:0 Lamp Flux:345.658x1 lm		
NAME: LED Spotlight	TYPE: MR16 GU5.3	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:20150918003
MFR.: WEJ lighting	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 Coefficients(WEC)									
0.0																
1.0	.205	.117	.037	.198	.113	.036	.185	.106	.034	.174	.100	.032	.163	.094	.030	
2.0	.190	.104	.032	.184	.102	.031	.174	.097	.030	.164	.092	.029	.155	.087	.028	
3.0	.177	.094	.028	.172	.092	.028	.162	.088	.027	.154	.084	.026	.146	.081	.025	
4.0	.165	.086	.025	.160	.084	.025	.152	.081	.024	.145	.078	.023	.138	.075	.023	
5.0	.154	.078	.023	.150	.077	.022	.143	.075	.022	.137	.072	.021	.131	.070	.021	
6.0	.145	.073	.021	.142	.071	.021	.135	.069	.020	.130	.067	.020	.125	.066	.019	
7.0	.137	.068	.019	.134	.067	.019	.128	.065	.019	.123	.063	.018	.119	.062	.018	
8.0	.129	.063	.018	.127	.062	.018	.122	.061	.017	.118	.060	.017	.113	.058	.017	
9.0	.123	.059	.017	.121	.059	.016	.116	.057	.016	.112	.056	.016	.108	.055	.016	
10.0	.117	.056	.016	.115	.055	.015	.111	.054	.015	.107	.053	.015	.104	.052	.015	

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	.191	.191	.191	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.173	.157	.143	.148	.135	.123	.101	.093	.085	.058	.054	.049	.019	.017	.016	
2.0	.159	.132	.110	.136	.114	.095	.093	.079	.067	.054	.046	.039	.017	.015	.013	
3.0	.147	.114	.088	.126	.098	.076	.086	.068	.053	.050	.040	.031	.016	.013	.010	
4.0	.136	.099	.071	.117	.086	.062	.080	.060	.043	.046	.035	.026	.015	.011	.008	
5.0	.127	.088	.059	.109	.076	.051	.075	.053	.036	.043	.031	.021	.014	.010	.007	
6.0	.119	.078	.049	.102	.068	.043	.071	.047	.030	.041	.028	.018	.013	.009	.006	
7.0	.112	.071	.042	.096	.061	.036	.067	.043	.026	.039	.025	.015	.012	.008	.005	
8.0	.106	.064	.036	.091	.056	.031	.063	.039	.022	.037	.023	.013	.012	.008	.004	
9.0	.100	.059	.031	.086	.051	.027	.060	.036	.019	.035	.021	.012	.011	.007	.004	
10.0	.095	.055	.028	.082	.047	.024	.057	.033	.017	.033	.020	.010	.011	.006	.003	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:TGB
Test Date:2015-09-18

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:8.820m [K=1.0000]
Remarks:

Uncorrected UGR Table

Test:U:0V I:0A P:0W PF:0 Lamp Flux:345.658x1 lm											
NAME: LED Spotlight					TYPE: MR16 GU5.3			WEIGHT:			
DIM.:					SPEC.:			SERIAL No.:20150918003			
MFR.: WEJ lighting					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	2H	23.7	24.7	23.9	24.9	25.0	22.2	23.2	22.5	23.4	23.6
	3H	24.8	25.7	25.1	25.9	26.2	23.7	24.6	23.9	24.8	25.0
	4H	25.7	26.6	26.0	26.8	27.0	24.6	25.5	24.9	25.7	25.9
	6H	26.7	27.5	27.0	27.8	28.0	25.5	26.3	25.8	26.6	26.8
	8H	27.2	28.0	27.5	28.2	28.5	25.9	26.7	26.2	27.0	27.2
	12H	27.6	28.4	28.0	28.7	29.0	26.2	27.0	26.6	27.3	27.5
4H	2H	23.9	24.8	24.2	25.0	25.3	22.7	23.6	23.0	23.8	24.0
	3H	25.5	26.2	25.8	26.5	26.8	24.6	25.3	24.9	25.6	25.9
	4H	26.6	27.3	26.9	27.6	27.9	25.8	26.5	26.1	26.8	27.1
	6H	27.8	28.5	28.2	28.8	29.1	26.9	27.5	27.3	27.8	28.2
	8H	28.4	29.0	28.8	29.4	29.7	27.4	27.9	27.8	28.3	28.7
	12H	29.0	29.6	29.4	29.9	30.3	27.8	28.3	28.2	28.7	29.1
8H	4H	27.1	27.6	27.5	28.0	28.4	26.4	26.9	26.8	27.3	27.7
	6H	28.6	29.0	29.0	29.4	29.9	27.8	28.2	28.2	28.6	29.0
	8H	29.3	29.8	29.8	30.2	30.6	28.4	28.8	28.8	29.2	29.7
	12H	30.1	30.5	30.6	30.9	31.4	29.0	29.3	29.4	29.8	30.2
12H	4H	27.1	27.7	27.5	28.0	28.4	26.5	27.0	26.9	27.4	27.8
	6H	28.7	29.2	29.2	29.6	30.0	28.0	28.4	28.4	28.8	29.3
	8H	29.6	29.9	30.0	30.4	30.9	28.7	29.1	29.2	29.5	30.0
Variations with the observer position at spacings:											
S = 1.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.3					
1.5H	+ 0.4 / - 0.2					+ 0.3 / - 0.3					
2.0H	+ 0.4 / - 0.2					+ 0.2 / - 0.3					

CIE Pub.117 Corrected 345.7 lm Total Lamp Luminous Flux.(8log(F/F0) = -3.7)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:TGB
Test Date:2015-09-18

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:8.820m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:0V I:0A P:0W PF:0 Lamp Flux:345.658x1 lm		
NAME: LED Spotlight	TYPE: MR16 GU5.3	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:20150918003
MFR.: WEJ lighting	SUR.:	PROTECTION ANGLE:

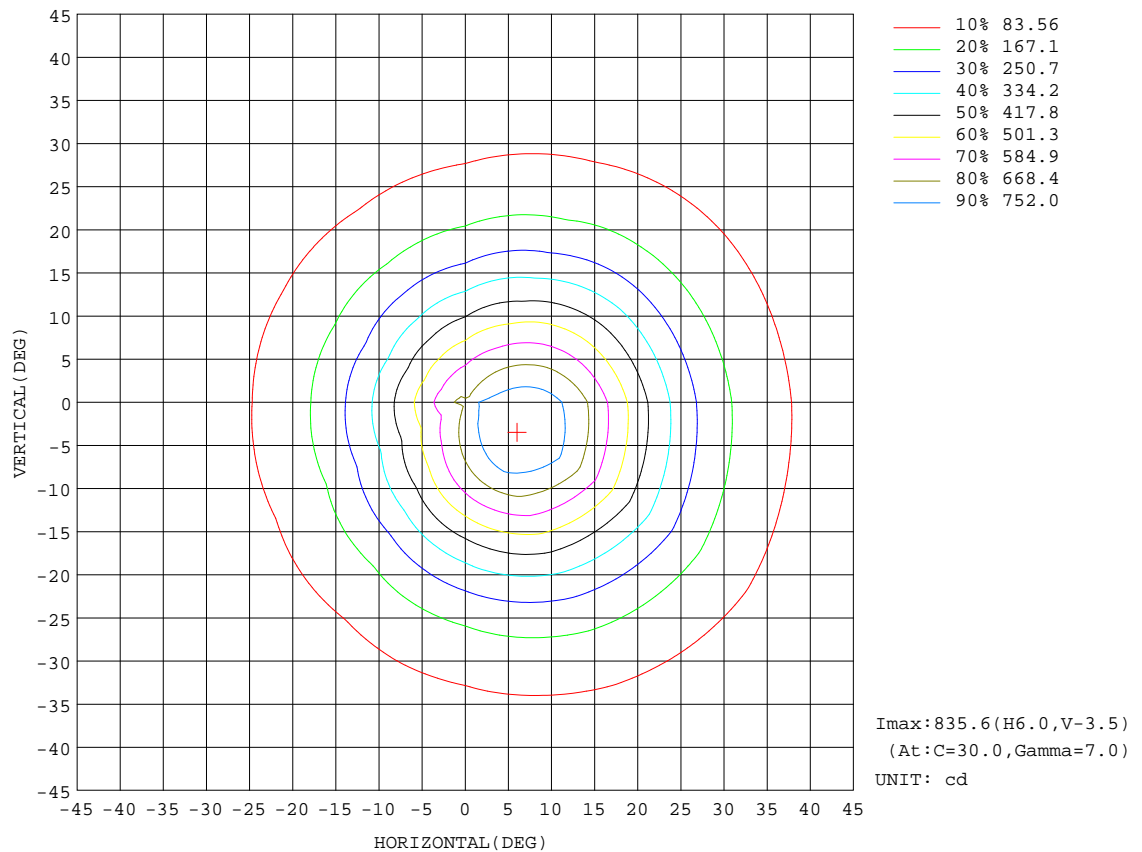
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	81	73	69	80	73	69	80	73	69	65
0.80	89	82	77	88	81	77	87	81	77	72
1.00	94	87	82	93	86	82	91	87	82	77
1.25	98	92	88	97	91	87	95	90	86	81
1.50	102	96	91	100	95	91	98	93	90	85
2.00	105	100	96	104	99	95	101	97	94	88
2.50	107	103	99	106	101	98	102	99	96	89
3.00	109	105	102	107	104	100	104	101	98	91
4.00	112	108	105	110	107	104	106	103	101	94
5.00	113	110	108	111	109	106	107	105	103	95
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:TGB
Test Date:2015-09-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:8.820m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:0V I:0A P:0W PF:0 Lamp Flux:345.658x1 lm		
NAME: LED Spotlight	TYPE: MR16 GU5.3	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:20150918003
MFR.: WEJ lighting	SUR.:	PROTECTION ANGLE:

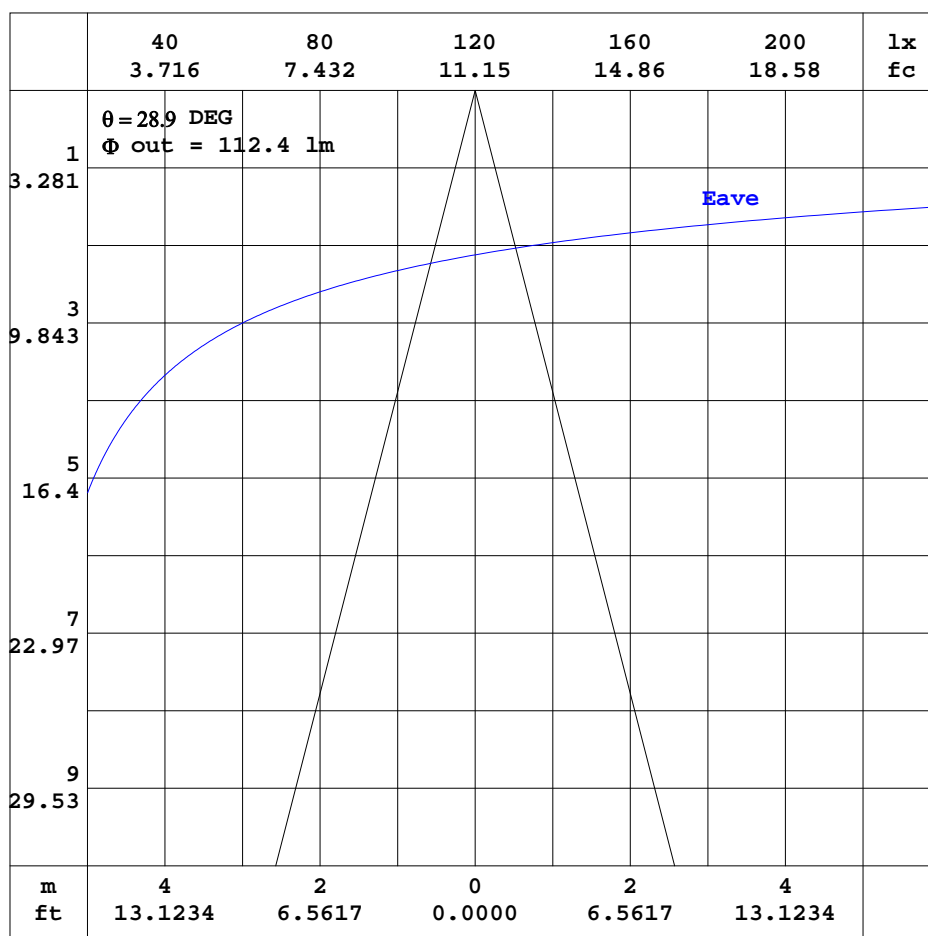


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:TGB
Test Date:2015-09-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity:65.0%
Test Distance:8.820m [K=1.0000]
Remarks:

AAI CURVES

Test:U:0V I:0A P:0W PF:0 Lamp Flux:345.658x1 lm		
NAME: LED Spotlight	TYPE: MR16 GU5.3	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:20150918003
MFR.: WEJ lighting	SUR.:	PROTECTION ANGLE:



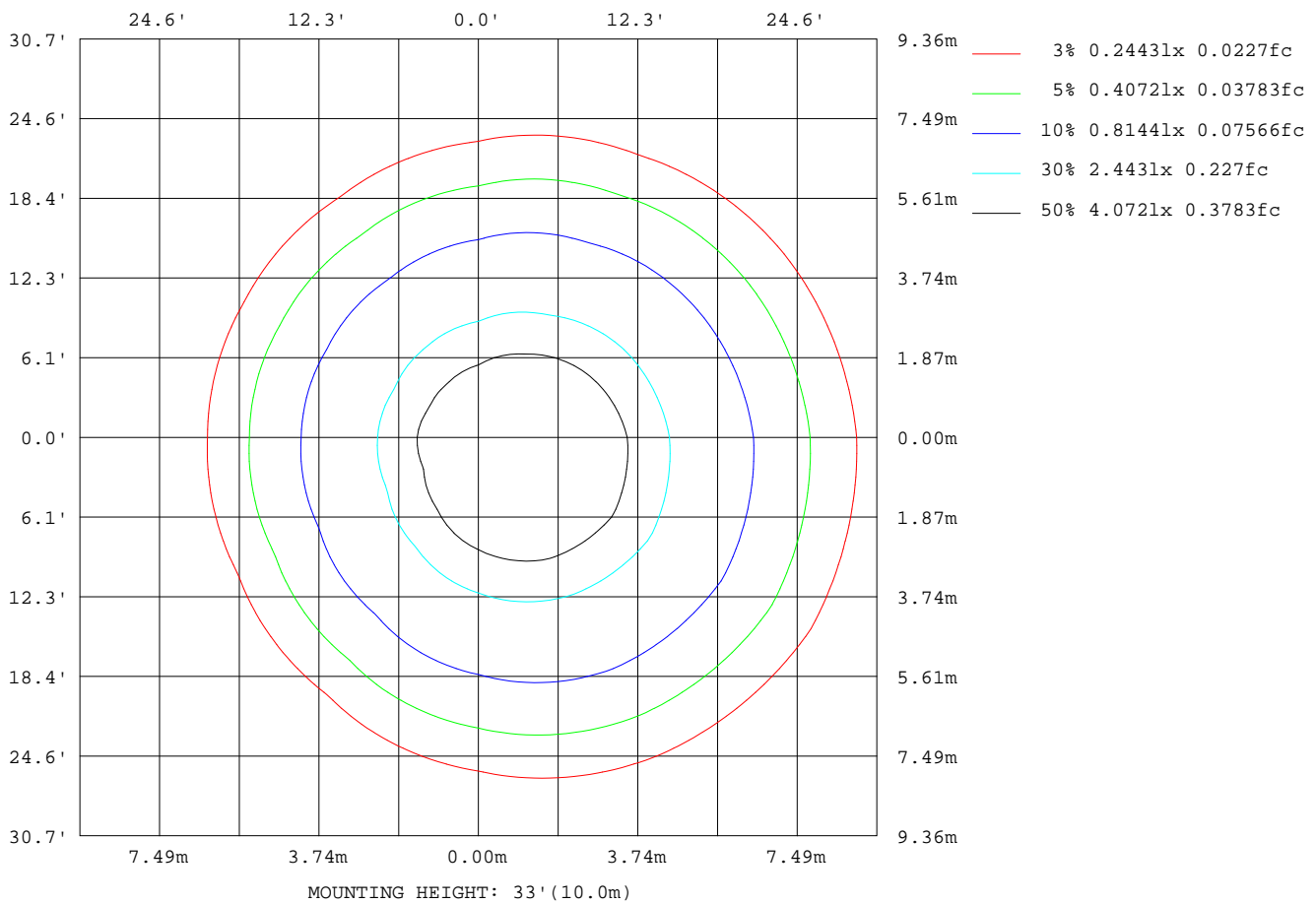
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: TGB
Test Date: 2015-09-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity: 65.0%
Test Distance: 8.820m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

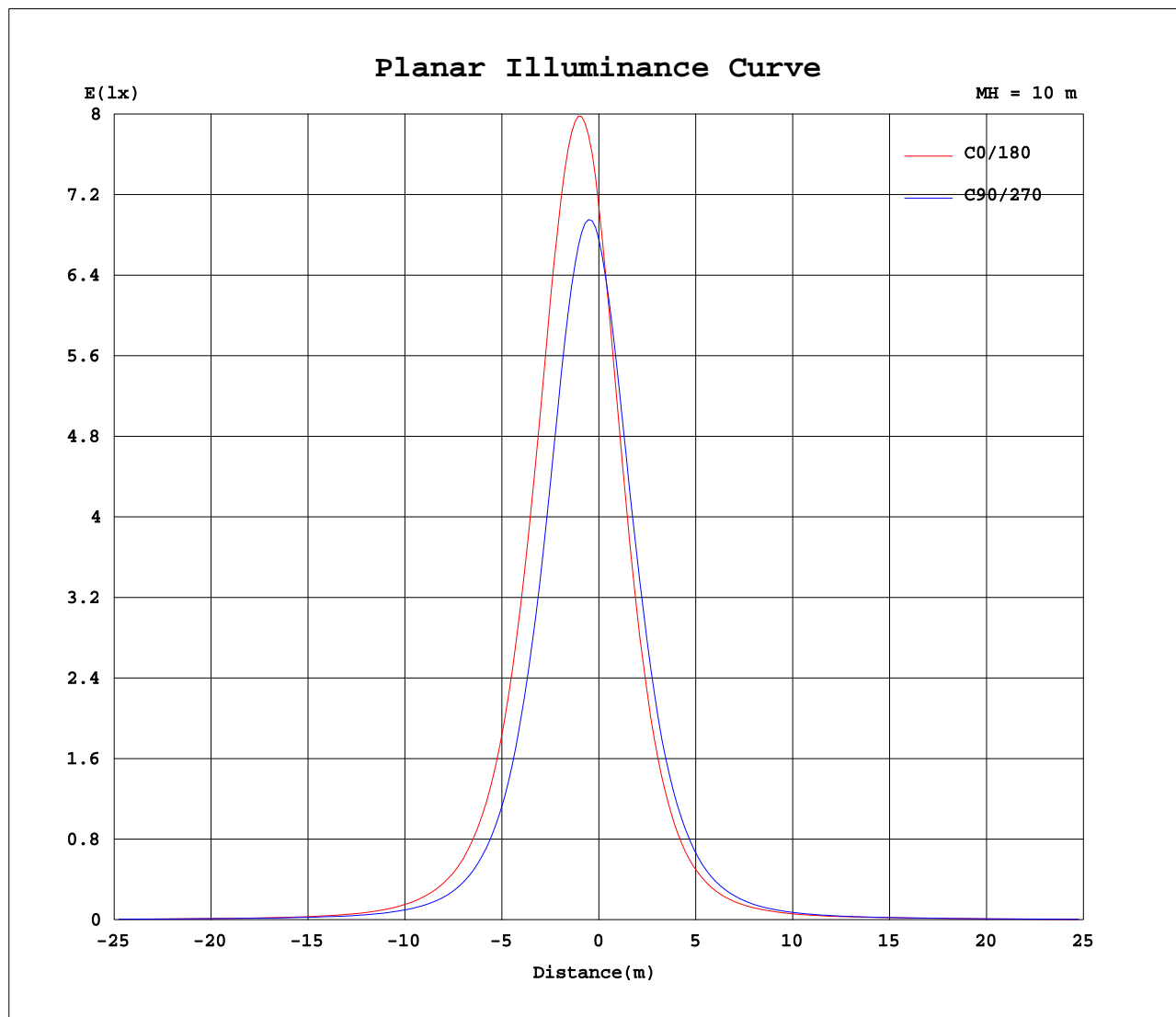
Test:U:0V I:0A P:0W PF:0 Lamp Flux:345.658x1 lm		
NAME: LED Spotlight	TYPE: MR16 GU5.3	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:20150918003
MFR.: WEJ lighting	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: TGB
Test Date: 2015-09-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity: 65.0%
Test Distance: 8.820m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: TGB
Test Date: 2015-09-18

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.266
Humidity: 65.0%
Test Distance: 8.820m [K=1.0000]
Remarks:

