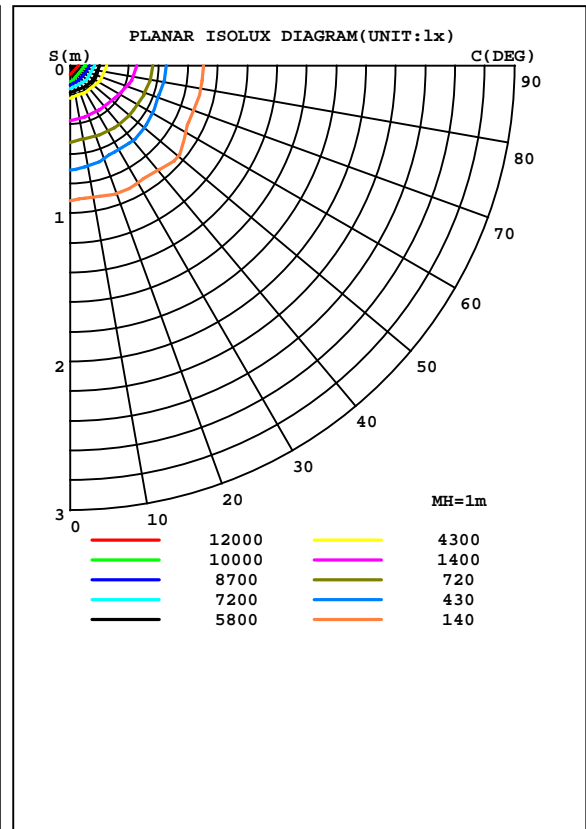
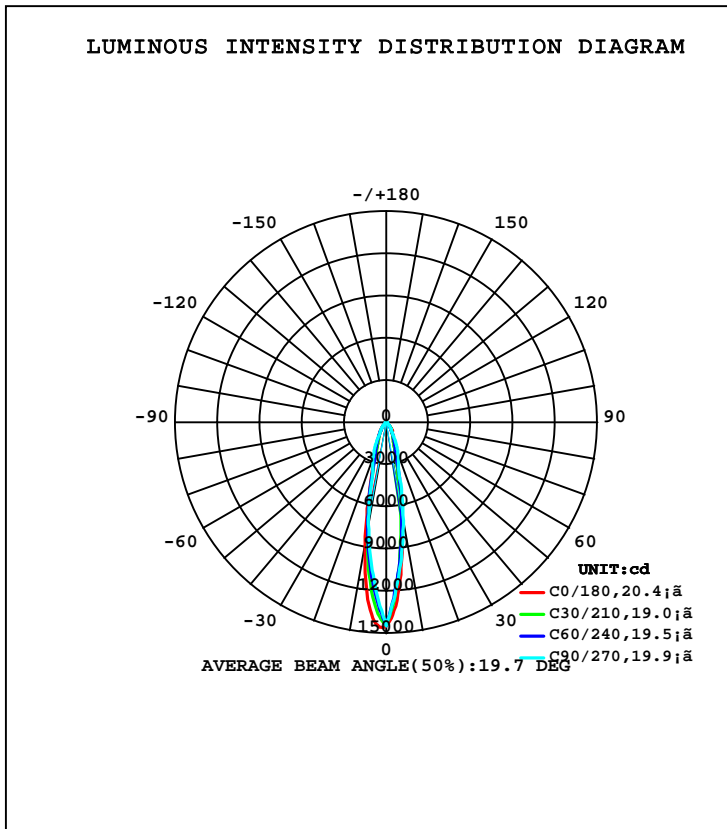


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:221.7V I:0.1430A P:30.40W PF:0.9530 Lamp Flux:3337.18x1 lm		
NAME: Track Spot light B32 COB 30W 4000K	TYPE:30W	WEIGHT:0.2
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.: LED MARKET SRL	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 107.77 lm/W			
Track Spot Light	B32 COB 30W 4000K	I _{max} (cd)	14601	S/MH(C0/180)	0.31
NOMINAL POWER(W)	30	LOR(%)	98.2	S/MH(C90/270)	0.33
RATED VOLTAGE(V)	222	TOTAL FLUX(lm)	3276.2	h UP,DN(C0-180)	0.0,48.3
NOMINAL FLUX(lm)	3337.18	CIE CLASS	DIRECT	h UP,DN(C180-360)	0.0,49.9
LAMPS INSIDE	1	h up(%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE(V)	221.6	h down(%)	98.2	CIBSE SHR MAX	1.00



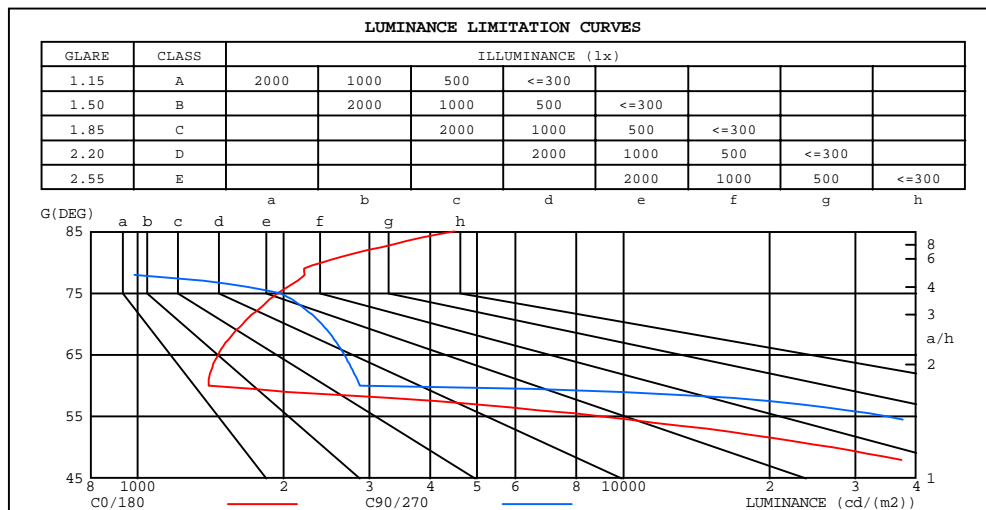
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:22DEG
Operators:ROMAN
Test Date:2019-10-09

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.269
Humidity:65.0%
Test Distance:7.850m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	lum, lamp
5	1140	1038	1078	1159	1339	1167	1091	1046	0- 5	297.6	297.6	9.08,8.92
10	638.6	609.8	708.5	753.4	876.3	767.7	734.6	619.8	5- 10	636.7	934.3	28.5,28
15	290.3	310.1	338.6	400.3	429.7	413.5	377.7	319.1	10- 15	601.1	1535	46.9,46
20	162.3	168.3	253.8	196.8	207.0	207.7	283.9	176.4	15- 20	433.3	1969	60.1,59
25	118.5	120.2	169.0	134.8	140.5	138.9	190.0	127.8	20- 25	354.1	2323	70.9,69.6
30	88.74	89.08	84.17	99.81	102.7	100.1	96.19	96.06	25- 30	293.6	2616	79.9,78.4
35	79.53	69.88	63.35	75.99	76.01	68.37	69.70	69.28	30- 35	238.8	2855	87.1,85.6
40	51.28	54.94	42.52	52.27	50.08	42.09	43.21	44.79	35- 40	195.4	3051	93.1,91.4
45	19.34	28.80	21.70	29.90	22.73	24.07	16.72	24.79	40- 45	124.4	3175	96.9,95.1
50	6.552	11.78	14.65	13.23	8.479	10.69	11.29	10.32	45- 50	58.91	3234	98.7,96.9
55	1.964	2.265	7.595	2.662	2.084	2.048	5.871	1.866	50- 55	26.35	3260	99.5,97.7
60	0.2657	1.099	0.5447	1.233	0.2603	0.9230	0.4485	0.9168	55- 60	9.858	3270	99.8,98
65	0.2353	0.4445	0.4279	0.4557	0.2189	0.3819	0.3616	0.4301	60- 65	2.344	3272	99.9,98.1
70	0.2136	0.2147	0.3111	0.2121	0.1935	0.2322	0.2747	0.2697	65- 70	1.343	3274	99.9,98.1
75	0.1907	0.1919	0.1942	0.1898	0.1754	0.1936	0.1878	0.2140	70- 75	1.124	3275	100,98.1
80	0.1575	0.1376	0	0.1365	0.1605	0.1302	0	0.1362	75- 80	0.8200	3276	100,98.2
85	0.1488	0	0	0	0.1511	0	0	0	80- 85	0.3640	3276	100,98.2
90	0.1391	0	0	0	0.1384	0	0	0	85- 90	0.1043	3276	100,98.2
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			
DEG	LUMINOUS INTENSITY: μ A10cd									UNIT:lm		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	4494	0
80	2387	0
75	1939	1975
70	1644	2393
65	1465	2664
60	1399	2867
55	9013	34848
50	26823	59961
45	71958	80747

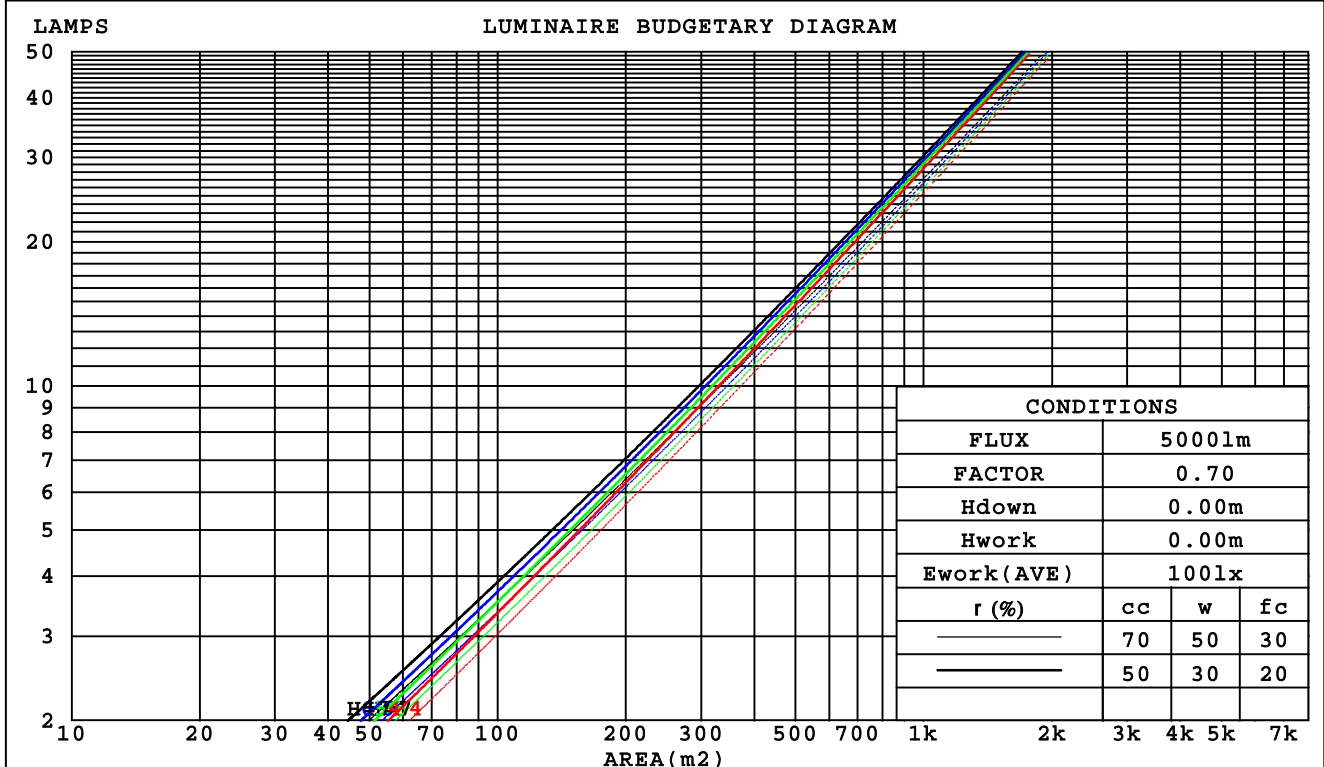
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:22DEG
Operators:ROMAN
Test Date:2019-10-09

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.269
Humidity:65.0%
Test Distance:7.850m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:221.7V I:0.1430A P:30.40W PF:0.9530 Lamp Flux:3337.18x1 lm		
NAME: Track Spot light B32 COB 30W 4000K	TYPE:30W	WEIGHT:0.2
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.: LED MARKET SRL	SUR.:	PROTECTION ANGLE:

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rhc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio Coefficients of Utilization(CU)															
0.0	1.17	1.17	1.17	1.14	1.14	1.14	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	.98
1.0	1.10	1.08	1.06	1.08	1.06	1.04	1.04	1.02	1.01	1.00	.99	.98	.97	.96	.95	.93
2.0	1.04	1.00	.97	1.02	.99	.96	.99	.96	.94	.96	.94	.92	.93	.92	.90	.89
3.0	.98	.94	.90	.97	.93	.90	.94	.91	.88	.92	.89	.87	.90	.87	.86	.84
4.0	.93	.88	.85	.92	.88	.84	.90	.86	.83	.88	.85	.82	.86	.84	.81	.80
5.0	.88	.84	.80	.87	.83	.80	.86	.82	.79	.84	.81	.78	.83	.80	.78	.76
6.0	.84	.79	.76	.84	.79	.76	.82	.78	.75	.81	.77	.75	.80	.77	.74	.73
7.0	.81	.76	.72	.80	.75	.72	.79	.75	.72	.78	.74	.71	.77	.73	.71	.70
8.0	.77	.72	.69	.77	.72	.69	.76	.72	.69	.75	.71	.68	.74	.71	.68	.67
9.0	.74	.69	.66	.74	.69	.66	.73	.69	.66	.72	.68	.66	.71	.68	.66	.64
10.0	.72	.67	.64	.71	.67	.64	.70	.66	.63	.70	.66	.63	.69	.66	.63	.62



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:22DEG
Operators:ROMAN
Test Date:2019-10-09

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.269
Humidity:65.0%
Test Distance:7.850m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:221.7V I:0.1430A P:30.40W PF:0.9530 Lamp Flux:3337.18x1 lm		
NAME: Track Spot light B32 COB 30W 4000K	TYPE:30W	WEIGHT:0.2
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.: LED MARKET SRL	SUR.:	PROTECTION ANGLE:

r _{cc}	80%			70%			50%			30%			10%			0
r _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r _{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio Wall Exitance Coefficients(WEC)															
0.0																
1.0	.153	.087	.028	.147	.084	.027	.134	.077	.025	.123	.071	.023	.113	.065	.021	
2.0	.145	.080	.024	.140	.077	.024	.129	.072	.022	.120	.067	.021	.111	.063	.020	
3.0	.137	.073	.022	.132	.071	.021	.124	.067	.020	.116	.064	.019	.109	.060	.019	
4.0	.130	.067	.020	.126	.066	.019	.118	.063	.019	.112	.060	.018	.105	.057	.017	
5.0	.123	.063	.018	.120	.061	.018	.113	.059	.017	.107	.057	.017	.102	.054	.016	
6.0	.117	.059	.017	.114	.058	.017	.108	.056	.016	.103	.054	.016	.098	.052	.015	
7.0	.111	.055	.016	.109	.054	.015	.104	.052	.015	.099	.051	.015	.095	.049	.015	
8.0	.106	.052	.015	.104	.051	.014	.100	.050	.014	.096	.048	.014	.092	.047	.014	
9.0	.101	.049	.014	.099	.048	.014	.096	.047	.013	.092	.046	.013	.089	.045	.013	
10.0	.097	.047	.013	.095	.046	.013	.092	.045	.013	.089	.044	.013	.086	.043	.012	

r _{cc}	80%			70%			50%			30%			10%			0
r _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r _{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio Ceiling Cavity Exitance Coefficients(CCEC)															
0.0	.187	.187	.187	.160	.160	.160	.109	.109	.109	.063	.063	.063	.020	.020	.020	
1.0	.167	.155	.144	.143	.133	.124	.097	.091	.086	.056	.053	.050	.018	.017	.016	
2.0	.150	.130	.113	.129	.112	.098	.088	.078	.068	.051	.045	.040	.016	.015	.013	
3.0	.137	.111	.091	.117	.096	.079	.081	.067	.055	.047	.039	.033	.015	.013	.011	
4.0	.126	.097	.074	.108	.083	.065	.074	.058	.045	.043	.034	.027	.014	.011	.009	
5.0	.116	.085	.062	.100	.073	.054	.069	.051	.038	.040	.030	.022	.013	.010	.007	
6.0	.108	.075	.052	.093	.065	.045	.064	.046	.032	.037	.027	.019	.012	.009	.006	
7.0	.101	.068	.044	.087	.059	.038	.060	.041	.027	.035	.024	.016	.011	.008	.005	
8.0	.095	.061	.038	.082	.053	.033	.057	.037	.023	.033	.022	.014	.011	.007	.005	
9.0	.090	.056	.033	.077	.048	.029	.054	.034	.020	.031	.020	.012	.010	.007	.004	
10.0	.085	.051	.029	.073	.045	.025	.051	.031	.018	.030	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:22DEG
Operators:ROMAN
Test Date:2019-10-09

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.269
Humidity:65.0%
Test Distance:7.850m [K=1.0000]
Remarks:

Uncorrected UGR Table

Test:U:221.7V I:0.1430A P:30.40W PF:0.9530 Lamp Flux:3337.18x1 lm										
NAME: Track Spot light B32 COB 30W 4000K					TYPE:30W			WEIGHT:0.2		
DIM.:					SPEC.:4000K			SERIAL No.:		
MFR.: LED MARKET SRL					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	21.5	22.3	21.8	22.5	22.7	21.6	22.4	21.8	22.5	22.7
3H	21.4	22.1	21.6	22.3	22.5	21.4	22.2	21.7	22.4	22.6
4H	21.3	22.0	21.6	22.2	22.4	21.4	22.0	21.6	22.3	22.5
6H	21.2	21.9	21.5	22.1	22.4	21.3	21.9	21.6	22.2	22.4
8H	21.2	21.8	21.5	22.1	22.3	21.2	21.9	21.5	22.1	22.4
12H	21.1	21.7	21.5	22.0	22.3	21.2	21.8	21.5	22.0	22.3
4H 2H	21.3	22.0	21.6	22.2	22.4	21.4	22.1	21.6	22.3	22.5
3H	21.1	21.7	21.5	22.0	22.3	21.2	21.8	21.5	22.1	22.3
4H	21.0	21.6	21.4	21.9	22.2	21.1	21.6	21.4	21.9	22.2
6H	21.0	21.4	21.3	21.8	22.1	21.0	21.5	21.4	21.8	22.2
8H	20.9	21.4	21.3	21.7	22.1	20.9	21.4	21.3	21.7	22.1
12H	20.9	21.3	21.3	21.6	22.0	20.9	21.3	21.3	21.7	22.1
8H 4H	20.9	21.4	21.3	21.7	22.1	20.9	21.4	21.3	21.7	22.1
6H	20.8	21.2	21.2	21.6	22.0	20.8	21.2	21.3	21.6	22.0
8H	20.8	21.1	21.2	21.5	21.9	20.8	21.1	21.2	21.5	22.0
12H	20.7	21.0	21.2	21.4	21.9	20.7	21.0	21.2	21.4	21.9
12H 4H	20.8	21.3	21.3	21.6	22.0	20.9	21.3	21.3	21.7	22.1
6H	20.7	21.1	21.2	21.5	21.9	20.8	21.1	21.2	21.5	22.0
8H	20.7	21.0	21.2	21.4	21.9	20.7	21.0	21.2	21.4	21.9
Variations with the observer position at spacings:										
S = 1.0H	+ 3.0 / -16.6					+ 2.3 / - 9.0				
1.5H	+ 5.3 / -11.9					+ 4.0 / - 8.0				
2.0H	+ 7.5 / -11.2					+ 5.9 / -15.3				

CIE Pub.117 Corrected 3337 lm Total Lamp Luminous Flux.(8log(F/F0) = 4.2)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:22DEG
Operators:ROMAN
Test Date:2019-10-09

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.269
Humidity:65.0%
Test Distance:7.850m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:221.7V I:0.1430A P:30.40W PF:0.9530 Lamp Flux:3337.18x1 lm		
NAME: Track Spot light B32 COB 30W 4000K	TYPE:30W	WEIGHT:0.2
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.: LED MARKET SRL	SUR.:	PROTECTION ANGLE:

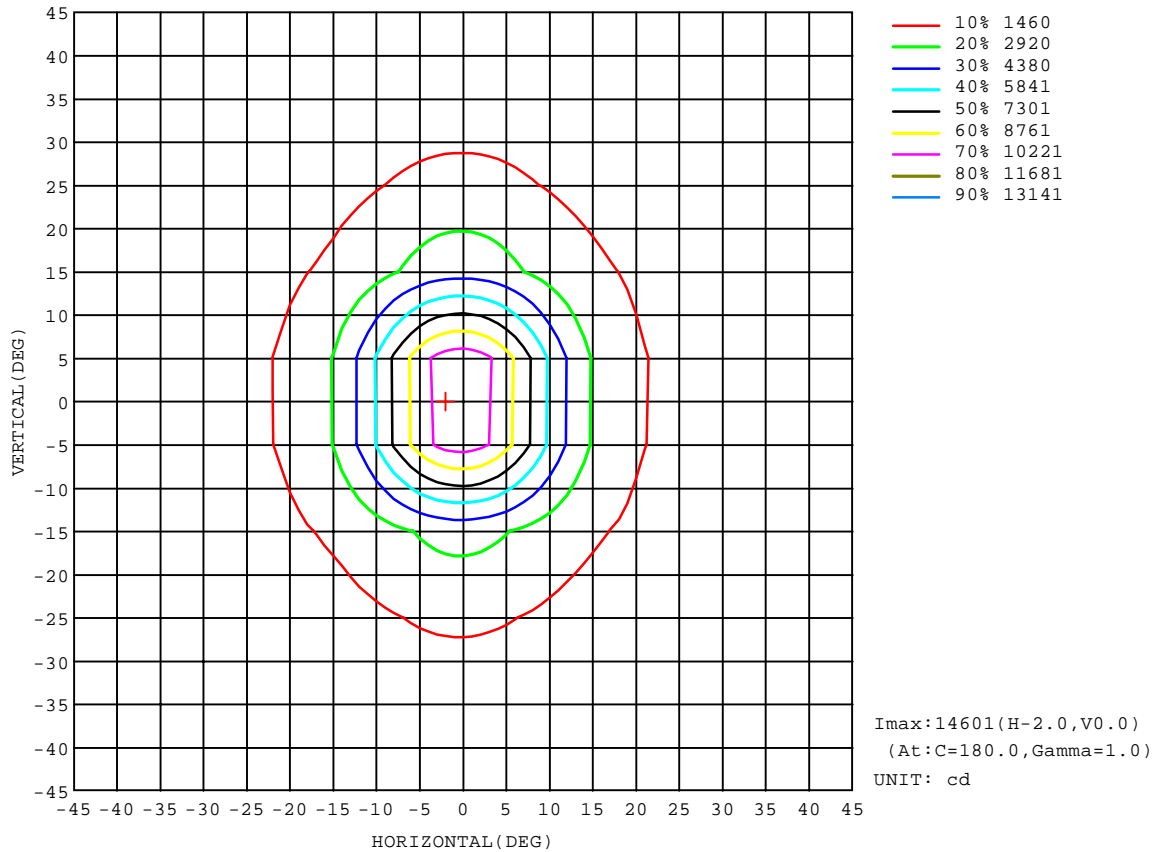
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	86	79	76	85	79	75	84	79	75	72
0.80	93	87	84	92	87	83	91	86	83	79
1.00	98	92	89	97	92	88	95	91	88	84
1.25	101	96	93	100	96	93	99	95	92	88
1.50	104	100	96	103	99	96	101	97	95	90
2.00	107	103	100	105	102	99	103	100	97	92
2.50	108	105	102	107	103	101	104	101	99	93
3.00	110	107	104	108	105	103	105	103	101	94
4.00	112	109	107	110	108	106	106	104	103	96
5.00	113	111	109	111	109	107	107	106	104	97
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:22DEG
Operators:ROMAN
Test Date:2019-10-09

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.269
Humidity:65.0%
Test Distance:7.850m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:221.7V I:0.1430A P:30.40W PF:0.9530 Lamp Flux:3337.18x1 lm		
NAME: Track Spot light B32 COB 30W 4000K	TYPE:30W	WEIGHT:0.2
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.: LED MARKET SRL	SUR.:	PROTECTION ANGLE:

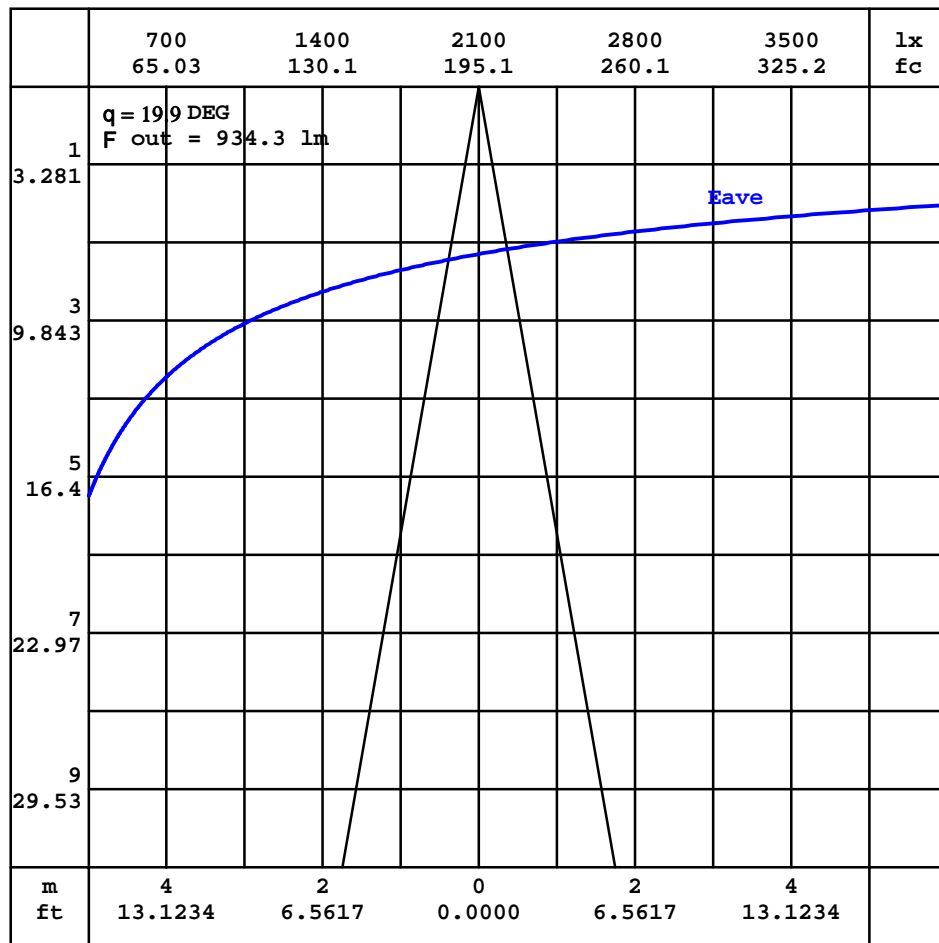


C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:22DEG
 Operators:ROMAN
 Test Date:2019-10-09

g Range: 0 - 90DEG
 g Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.269
 Humidity:65.0%
 Test Distance:7.850m [K=1.0000]
 Remarks:

AAI CURVES

Test:U:221.7V I:0.1430A P:30.40W PF:0.9530 Lamp Flux:3337.18x1 lm		
NAME: Track Spot light B32 COB 30W 4000K	TYPE:30W	WEIGHT:0.2
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.: LED MARKET SRL	SUR.:	PROTECTION ANGLE:



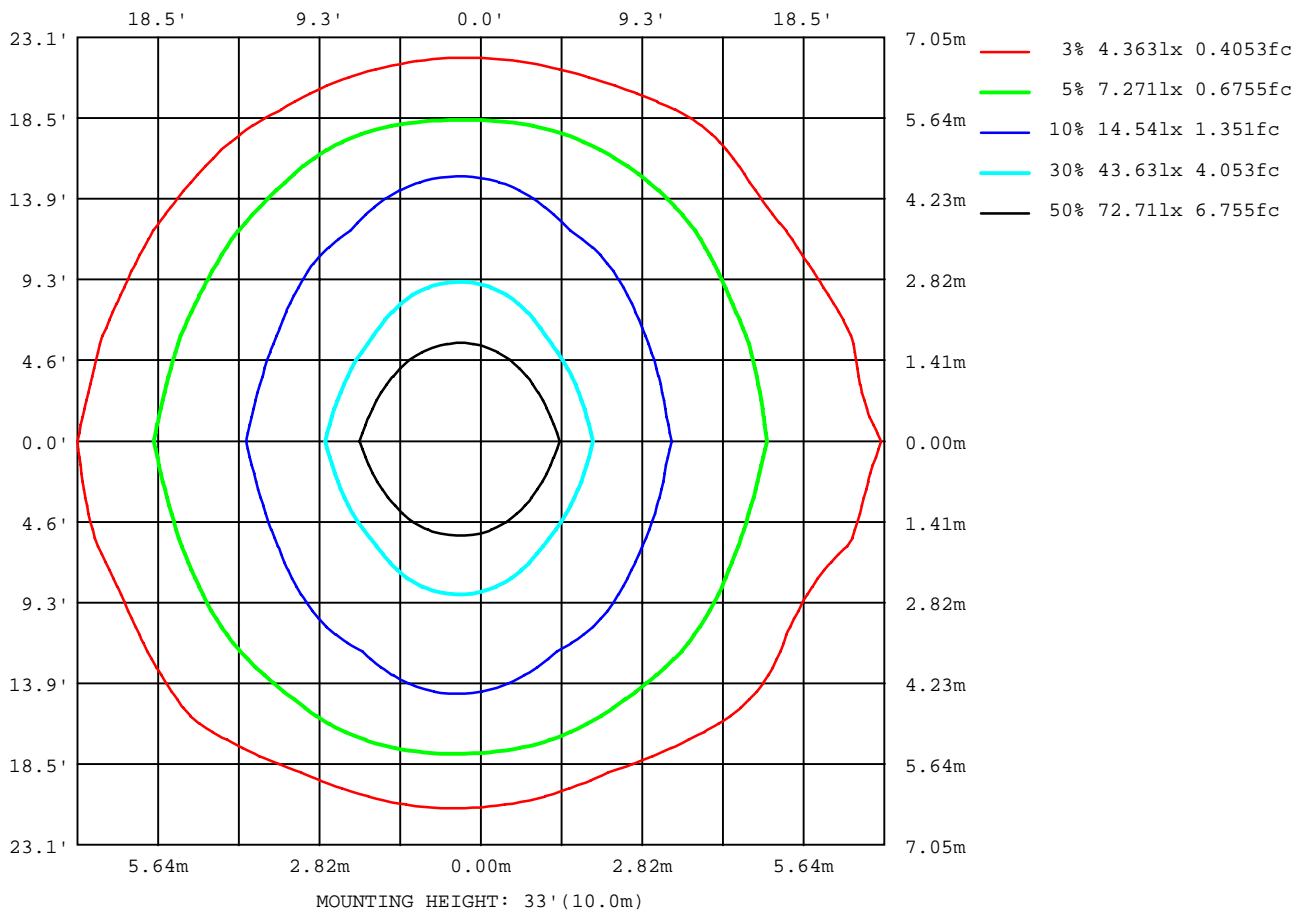
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:22DEG
 Operators:ROMAN
 Test Date:2019-10-09

g Range: 0 - 90DEG
 g Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.269
 Humidity:65.0%
 Test Distance:7.850m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

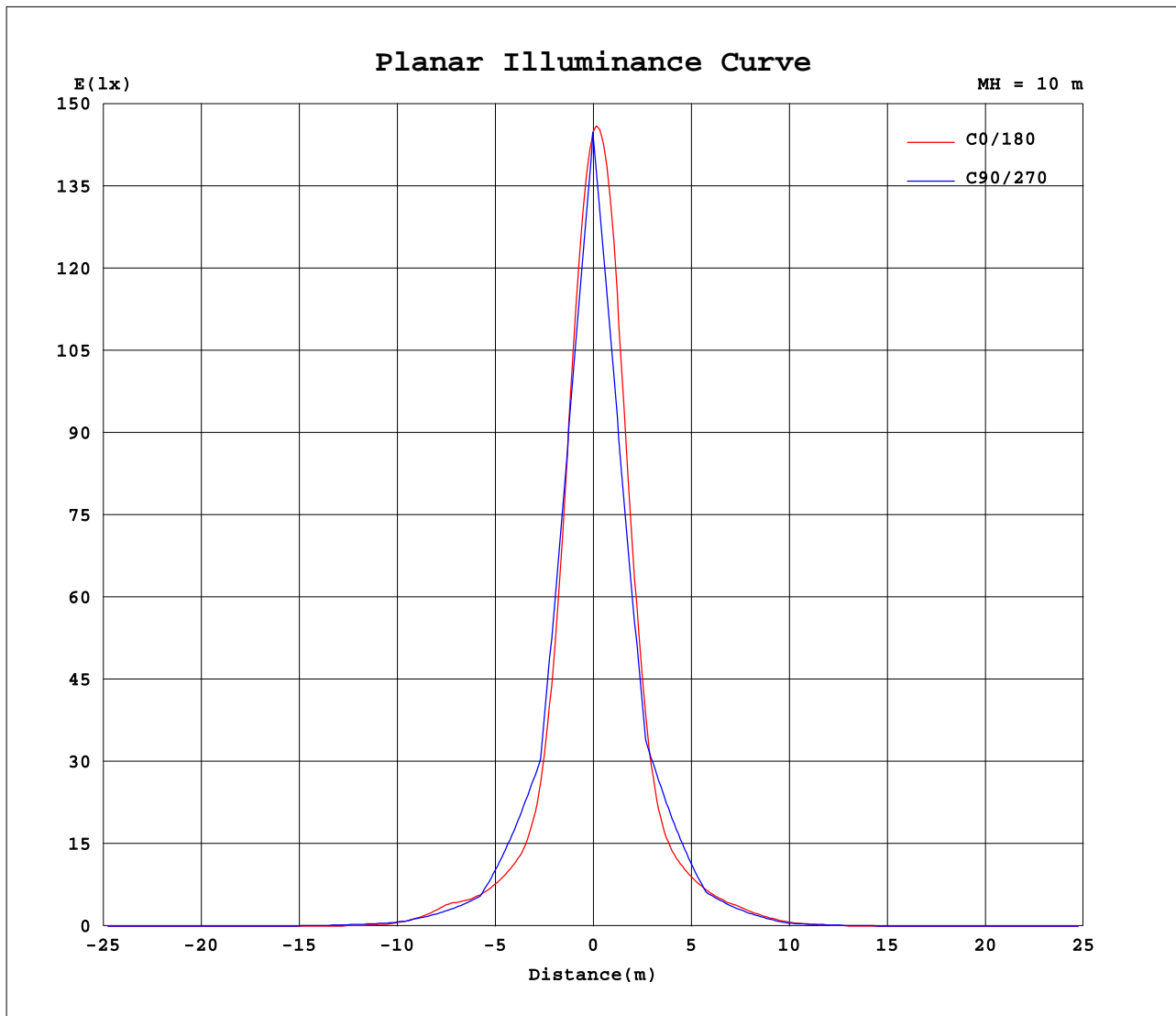
Test:U:221.7V I:0.1430A P:30.40W PF:0.9530 Lamp Flux:3337.18x1 lm		
NAME: Track Spot light B32 COB 30W 4000K	TYPE:30W	WEIGHT:0.2
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.: LED MARKET SRL	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:22DEG
Operators:ROMAN
Test Date:2019-10-09

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.269
Humidity:65.0%
Test Distance:7.850m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 22DEG
 Operators: ROMAN
 Test Date: 2019-10-09

g Range: 0 - 90DEG
 g Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.269
 Humidity: 65.0%
 Test Distance: 7.850m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:221.7V I:0.1430A P:30.40W PF:0.9530 Lamp Flux:3337.18x1 lm																	
NAME: Track Spot light B32 COB 30W 4000K									TYPE:30W						WEIGHT:0.2		
DIM.:									SPEC.:4000K						SERIAL No.:		
MFR.: LED MARKET SRL									SUR.:						PROTECTION ANGLE:		

Table--4

UNIT: lm/m^2

C(°)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
g(°)	0	1448	1448	1448	1448	1448	1448	1448	1448	1448	1448	1448	1448	1448	1448				
5	1071	1065	1061	1055	1051	1048	1046	1047	1049	1053	1060	1070	1083	1099	1118				
10	702	689	675	661	647	633	620	609	599	591	586	587	593	602	617				
15	363	357	352	346	338	329	319	309	299	289	283	278	276	277	281				
20	247	230	214	200	188	180	176	174	170	166	162	158	157	157	159				
25	167	157	148	140	135	131	128	125	123	120	117	116	115	115	116				
30	100	101	101	100	99.3	98.1	96.1	93.7	91.9	92.1	92.2	90.6	89.5	88.8	88.4				
35	69.0	69.3	70.4	72.0	73.7	72.7	69.3	66.9	67.3	71.1	77.1	79.3	76.4	75.3	76.7				
40	43.5	44.5	46.2	48.4	49.3	47.4	44.8	43.2	44.8	47.2	48.4	48.5	47.2	46.5	47.7				
45	18.6	20.5	23.0	25.4	26.3	26.1	24.8	21.9	18.6	20.4	21.2	19.8	18.5	17.7	17.9				
50	9.95	9.24	8.50	7.16	7.72	9.92	10.3	9.26	7.85	6.90	7.17	6.85	6.61	6.19	6.11				
55	5.45	5.23	4.86	4.15	3.38	2.62	1.87	2.61	2.83	2.65	2.09	2.05	1.98	1.89	1.79				
60	1.15	1.51	1.72	1.75	1.59	1.29	0.92	0.53	0.48	0.81	0.61	0.36	0.45	0.32	0.30				
65	0.37	0.37	0.37	0.36	0.35	0.46	0.43	0.35	0.34	0.33	0.32	0.30	0.28	0.26	0.25				
70	0.28	0.29	0.29	0.28	0.28	0.27	0.27	0.27	0.27	0.27	0.26	0.25	0.24	0.23	0.22				
75	0.20	0.20	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.21	0.21	0.20	0.20				
80	0.01	0.02	0.04	0.06	0.08	0.10	0.14	0.17	0.18	0.18	0.18	0.16	0.17	0.16	0.16				
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.14	0.16	0.15	0.15				
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:22DEG
Operators:ROMAN
Test Date:2019-10-09

g Range: 0 - 90DEG
g Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.269
Humidity:65.0%
Test Distance:7.850m [K=1.0000]
Remarks: