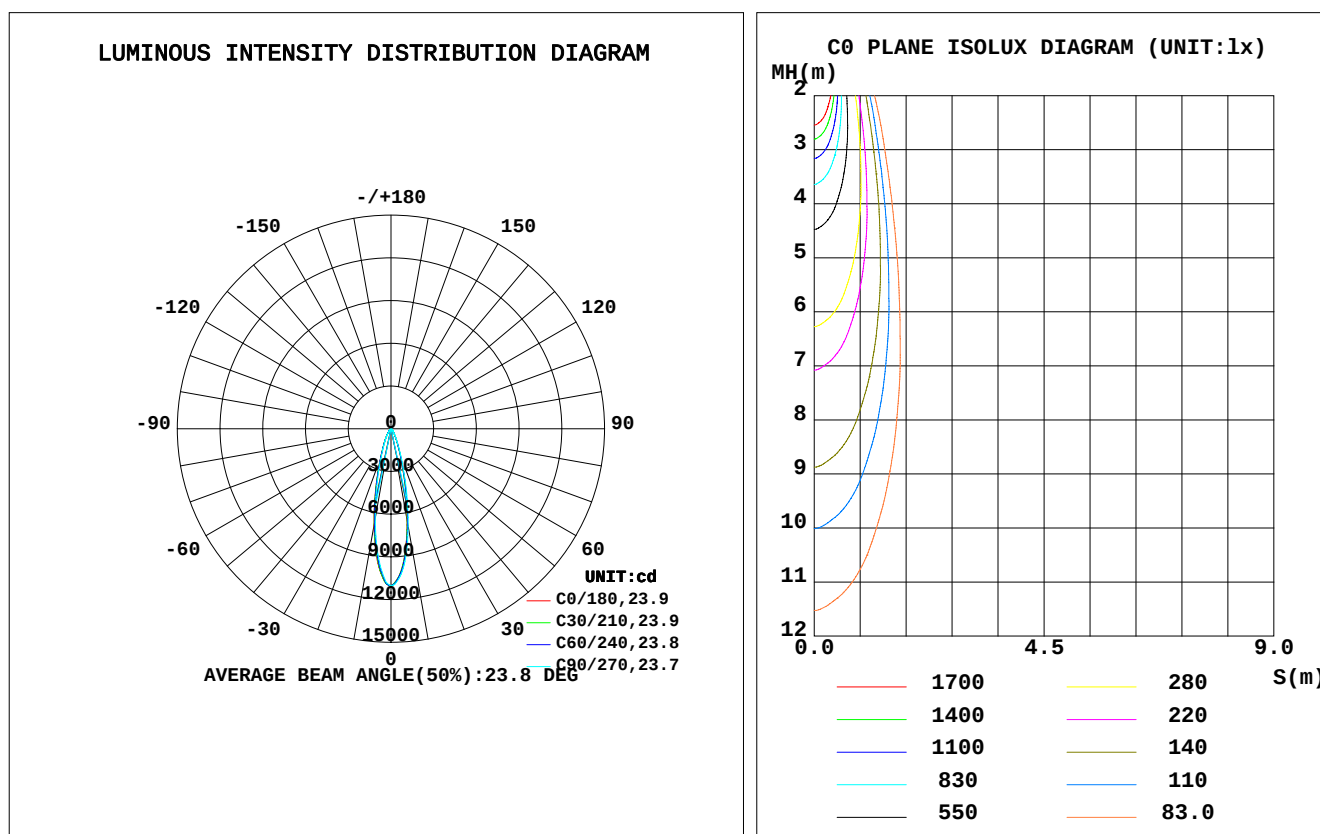


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: LED	TYPE: track lights	WEIGHT: 1.1
SPEC.: VN-TLO030-01 3000K CRI80	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 103.90 lm/W
MODEL		I _{max} (cd)	11031	S/MH(C0/180)	0.42	
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	0.39	
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	2841.8	η UP, DN(C0-180)	0.0, 50.8	
NOMINAL FLUX(lm)	2841.82	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 49.2	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.00	



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature: 28DEG
 Operators: SYF
 Test Date: 2017-10-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.401
 Humidity: 65.0%
 Test Distance: 5.300m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

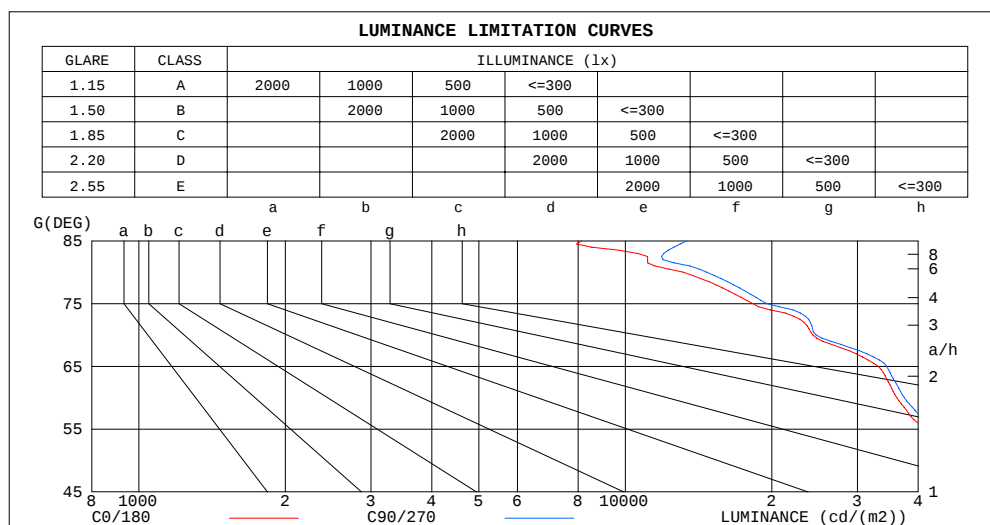
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	653.9	675.1	696.6	730.4	688.1	666.6	636.2	607.6	0- 10	822.8	822.8	29,29
20	182.6	189.2	201.8	223.2	210.7	205.3	192.5	174.8	10- 20	1061	1884	66.3,66.3
30	55.33	56.77	59.64	67.47	68.47	71.81	65.06	57.06	20- 30	513.3	2397	84.3,84.3
40	17.52	18.92	19.73	21.31	21.20	23.14	20.46	18.09	30- 40	229.1	2626	92.4,92.4
50	8.443	8.873	8.925	9.244	8.955	9.693	9.367	8.682	40- 50	101.9	2728	96,96
60	4.768	4.917	4.944	5.164	5.018	5.048	4.955	4.762	50- 60	60.26	2788	98.1,98.1
70	2.191	2.207	2.226	2.414	2.371	2.235	2.132	2.049	60- 70	36.39	2825	99.4,99.4
80	0.6024	0.6350	0.6739	0.7385	0.6617	0.5755	0.5230	0.4779	70- 80	14.26	2839	99.9,99.9
90	0.0751	0.0753	0.0740	0.0717	0.0671	0.0653	0.0693	0.0691	80- 90	3.043	2842	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		

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature:28DEG
 Operators:SYF
 Test Date:2017-10-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
 Humidity:65.0%
 Test Distance:5.300m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

NAME: LED	TYPE:track lights	WEIGHT:1.1
SPEC.: vN-TL0030-01 3000K CRI80	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	8132	13374
80	13152	14698
75	18300	19506
70	24287	24653
65	33121	34471
60	36153	37451
55	41970	43877
50	49794	52586
45	61054	67302

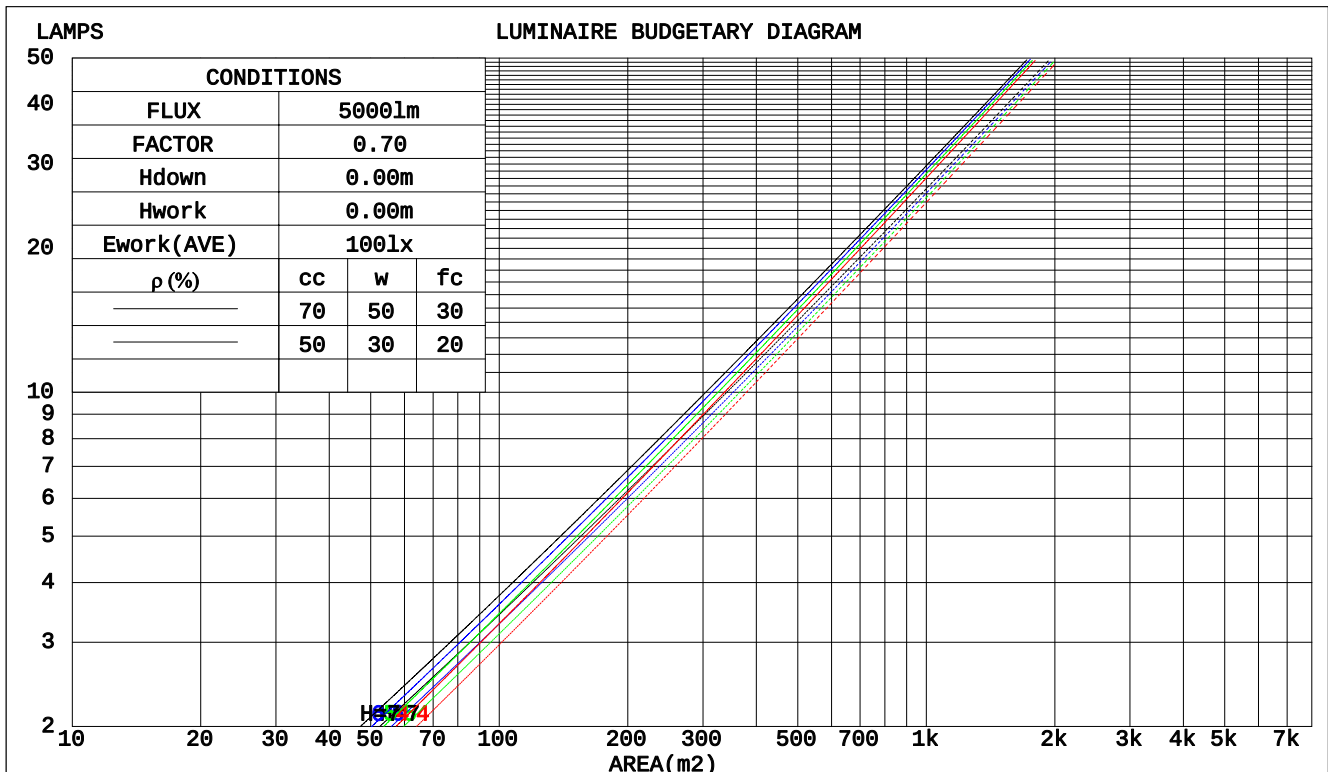
C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature: 28DEG
 Operators: SYF
 Test Date: 2017-10-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.401
 Humidity: 65.0%
 Test Distance: 5.300m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: LED	TYPE:track lights	WEIGHT:1.1
SPEC.: VN-TLO030-01 3000K CRI80	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding 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	1.00
1.0	1.12	1.10	1.08	1.10	1.08	1.06	1.06	1.04	1.03	1.02	1.01	.99	.99	.98	.97	.95
2.0	1.05	1.02	.99	1.04	1.01	.98	1.01	.98	.96	.98	.96	.94	.95	.93	.92	.90
3.0	.99	.96	.92	.98	.95	.91	.96	.93	.90	.94	.91	.89	.91	.89	.87	.86
4.0	.95	.90	.87	.94	.89	.86	.92	.88	.85	.90	.87	.84	.88	.85	.83	.82
5.0	.91	.86	.82	.90	.85	.82	.88	.84	.81	.86	.83	.80	.85	.82	.80	.78
6.0	.87	.82	.78	.86	.81	.78	.85	.80	.77	.83	.80	.77	.82	.79	.76	.75
7.0	.83	.78	.75	.83	.78	.75	.81	.77	.74	.80	.77	.74	.79	.76	.74	.72
8.0	.80	.75	.72	.79	.75	.72	.79	.74	.71	.78	.74	.71	.77	.73	.71	.70
9.0	.77	.72	.69	.77	.72	.69	.76	.72	.69	.75	.71	.69	.74	.71	.68	.67
10.0	.75	.70	.67	.74	.70	.67	.73	.69	.67	.73	.69	.66	.72	.69	.66	.65



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:28DEG
Operators:SYF
Test Date:2017-10-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.300m [K=1.0000]
Remarks:

WEC AND CCEC

NAME: LED	TYPE:track lights	WEIGHT:1.1
SPEC.: VN-TLO030-01 3000K CRI80	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding 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	.158	.090	.028	.151	.086	.027	.139	.080	.025	.127	.073	.024	.117	.068	.022		
2.0	.148	.081	.025	.143	.079	.024	.132	.074	.023	.123	.069	.022	.114	.064	.020		
3.0	.139	.074	.022	.134	.072	.022	.126	.068	.021	.118	.064	.020	.110	.061	.019		
4.0	.131	.068	.020	.127	.066	.020	.119	.063	.019	.112	.060	.018	.106	.058	.018		
5.0	.123	.063	.018	.120	.061	.018	.113	.059	.017	.107	.057	.017	.102	.054	.016		
6.0	.116	.058	.017	.113	.057	.016	.108	.055	.016	.103	.053	.016	.098	.051	.015		
7.0	.110	.055	.015	.108	.054	.015	.103	.052	.015	.098	.050	.015	.094	.049	.014		
8.0	.105	.051	.014	.103	.051	.014	.098	.049	.014	.094	.048	.014	.091	.047	.014		
9.0	.100	.048	.014	.098	.048	.013	.094	.047	.013	.091	.045	.013	.087	.044	.013		
10.0	.096	.046	.013	.094	.045	.013	.090	.044	.012	.087	.043	.012	.084	.042	.012		

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	.170	.157	.146	.145	.135	.126	.099	.093	.087	.057	.054	.051	.018	.017	.016	
2.0	.153	.133	.115	.131	.114	.100	.090	.079	.070	.052	.046	.041	.017	.015	.013	
3.0	.139	.113	.093	.119	.098	.080	.082	.068	.056	.047	.040	.033	.015	.013	.011	
4.0	.128	.098	.076	.110	.085	.066	.075	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.118	.086	.063	.101	.075	.055	.070	.052	.039	.040	.031	.023	.013	.010	.008	
6.0	.109	.077	.053	.094	.066	.046	.065	.046	.033	.038	.027	.019	.012	.009	.006	
7.0	.102	.069	.045	.088	.060	.039	.061	.042	.028	.035	.025	.017	.011	.008	.006	
8.0	.096	.062	.039	.082	.054	.034	.057	.038	.024	.033	.022	.014	.011	.007	.005	
9.0	.090	.057	.034	.078	.049	.030	.054	.035	.021	.031	.020	.013	.010	.007	.004	
10.0	.085	.052	.030	.073	.045	.026	.051	.032	.018	.030	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:28DEG
Operators:SYF
Test Date:2017-10-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.300m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

NAME: LED						TYPE:track lights			WEIGHT:1.1		
SPEC.: VN-TLo030-01 3000K CRI80						DIM.:			SERIAL No.:		
MFR.: 1						SUR.:			Shielding 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	20.3	21.1	20.6	21.3	21.4	20.7	21.5	20.9	21.6	21.8	
3H	20.9	21.6	21.1	21.8	22.0	21.2	21.9	21.5	22.1	22.3	
4H	21.0	21.7	21.3	21.9	22.1	21.4	22.1	21.6	22.3	22.5	
6H	21.1	21.7	21.3	21.9	22.2	21.4	22.1	21.7	22.3	22.5	
8H	21.0	21.7	21.3	21.9	22.2	21.4	22.0	21.7	22.3	22.5	
12H	21.0	21.6	21.3	21.9	22.2	21.4	22.0	21.7	22.2	22.5	
4H 2H	20.6	21.3	20.9	21.5	21.7	20.9	21.6	21.2	21.8	22.0	
3H	21.2	21.8	21.6	22.1	22.4	21.5	22.1	21.8	22.4	22.7	
4H	21.4	22.0	21.8	22.3	22.6	21.7	22.3	22.1	22.6	22.9	
6H	21.5	22.0	21.9	22.3	22.7	21.8	22.3	22.2	22.6	23.0	
8H	21.5	22.0	21.9	22.3	22.7	21.8	22.3	22.2	22.6	23.0	
12H	21.5	21.9	21.9	22.3	22.7	21.8	22.2	22.2	22.6	23.0	
8H 4H	21.4	21.9	21.8	22.2	22.6	21.7	22.2	22.1	22.5	22.9	
6H	21.5	21.9	22.0	22.3	22.7	21.8	22.2	22.3	22.6	23.0	
8H	21.6	21.9	22.0	22.3	22.7	21.9	22.2	22.3	22.6	23.0	
12H	21.6	21.8	22.0	22.3	22.8	21.9	22.2	22.3	22.6	23.1	
12H 4H	21.4	21.8	21.8	22.2	22.6	21.7	22.1	22.1	22.5	22.9	
6H	21.5	21.8	22.0	22.3	22.7	21.8	22.1	22.3	22.6	23.0	
8H	21.5	21.8	22.0	22.3	22.7	21.8	22.1	22.3	22.6	23.0	
Variations with the observer position at spacings:											
S = 1.0H	+ 0.9 / - 1.2					+ 1.0 / - 1.3					
1.5H	+ 1.5 / - 0.7					+ 1.8 / - 0.9					
2.0H	+ 1.1 / - 0.9					+ 1.3 / - 0.9					

CIE Pub.117, 2842 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 3.6$)

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:28DEG
Operators:SYF
Test Date:2017-10-10

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.300m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

NAME: LED	TYPE: track lights	WEIGHT: 1.1
SPEC.: VN-TLO030-01 3000K CRI80	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

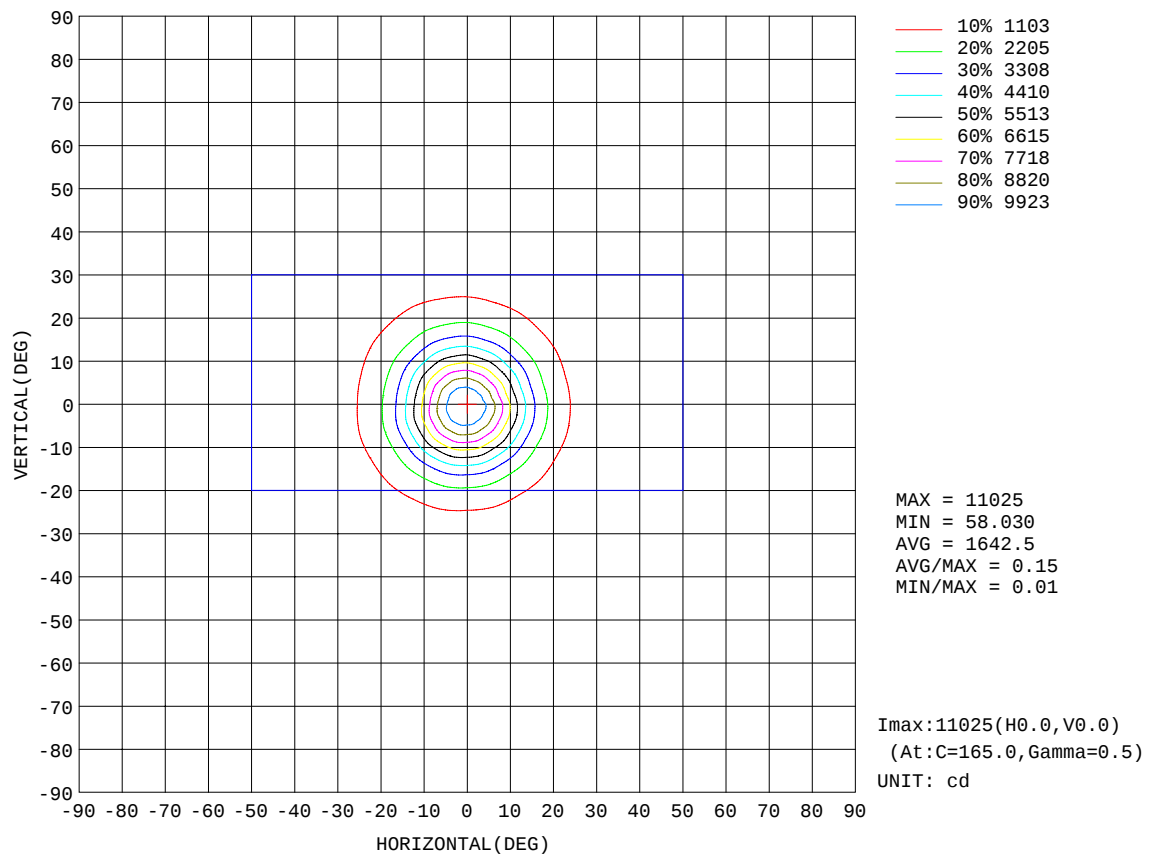
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	80	77	86	80	76	86	80	76	73
0.80	94	88	84	94	88	84	92	87	84	80
1.00	99	93	89	98	93	89	96	92	88	84
1.25	103	97	94	102	97	93	100	96	93	88
1.50	105	101	97	104	100	97	102	98	96	91
2.00	108	104	101	107	103	100	104	101	98	93
2.50	110	106	103	108	105	102	105	102	100	94
3.00	112	108	105	110	107	104	106	104	102	96
4.00	114	111	109	112	109	107	108	106	104	97
5.00	115	113	111	113	111	109	109	107	106	98
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature: 28DEG
 Operators: SYF
 Test Date: 2017-10-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.401
 Humidity: 65.0%
 Test Distance: 5.300m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

NAME: LED	TYPE: track lights	WEIGHT: 1.1
SPEC.: VN-TLO030-01 3000K CRI80	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

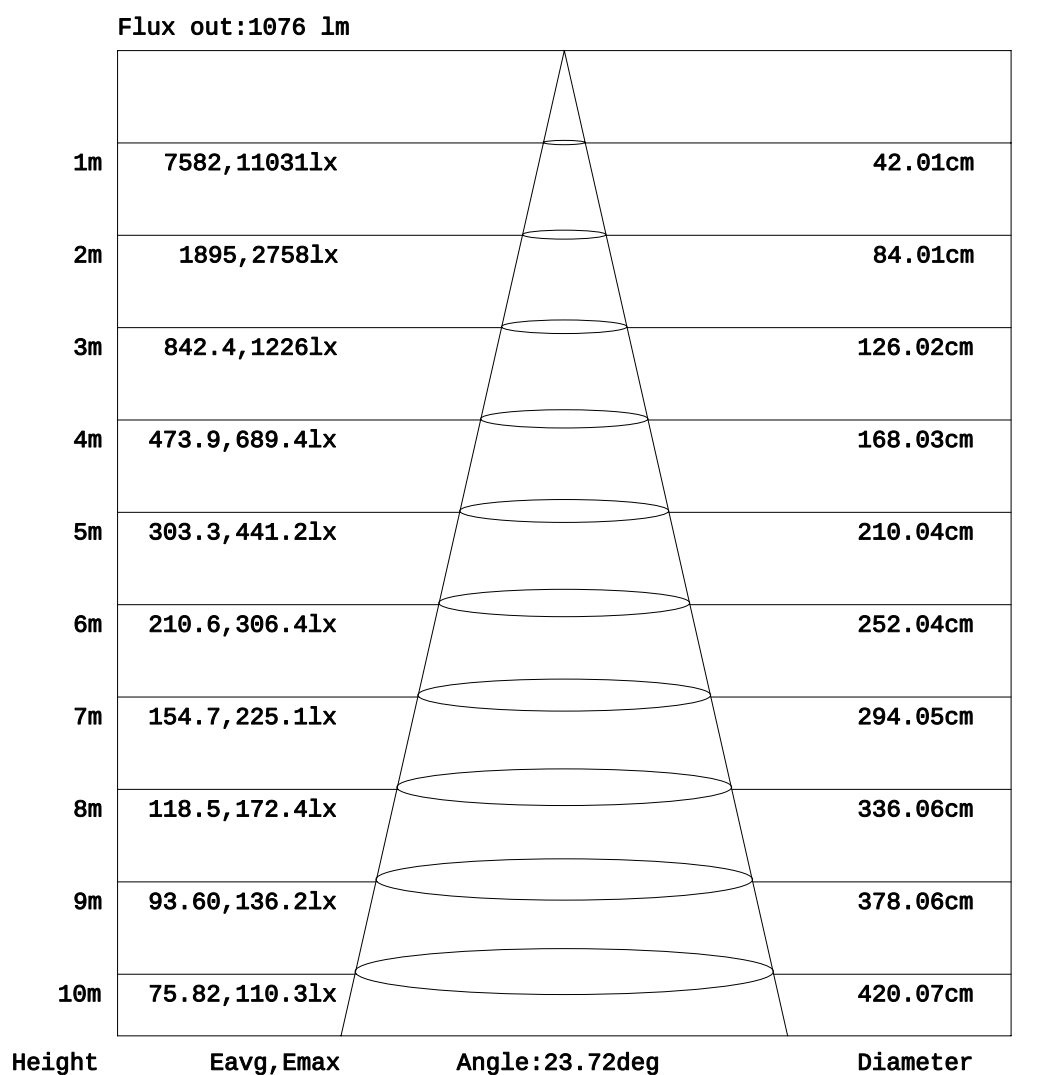


C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature: 28DEG
 Operators: SYF
 Test Date: 2017-10-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.401
 Humidity: 65.0%
 Test Distance: 5.300m [K=1.0000]
 Remarks:

AAI Figure

NAME: LED	TYPE:track lights	WEIGHT:1.1
SPEC.: VN-TLO030-01 3000K CRI80	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:



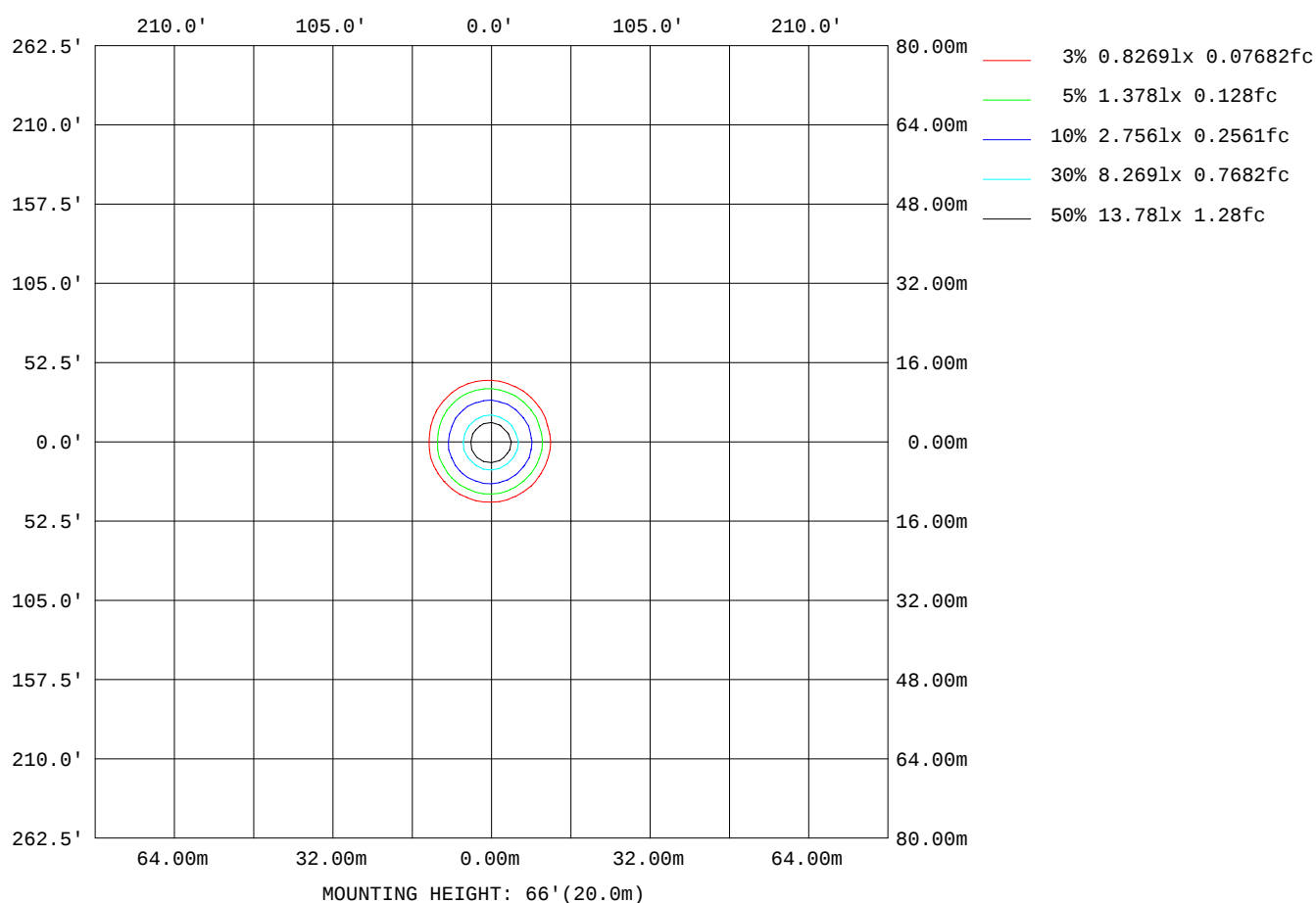
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:28DEG
Operators:SYF
Test Date:2017-10-10

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.300m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

NAME: LED	TYPE: track lights	WEIGHT: 1.1
SPEC.: VN-TLO030-01 3000K CRI80	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature: 28DEG
Operators: SYF
Test Date: 2017-10-10

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity: 65.0%
Test Distance: 5.300m [K=1.0000]
Remarks:

LED Avg.L Report

NAME: LED	TYPE:track lights	WEIGHT:1.1
SPEC.: VN-TLO030-01 3000K CRI80	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

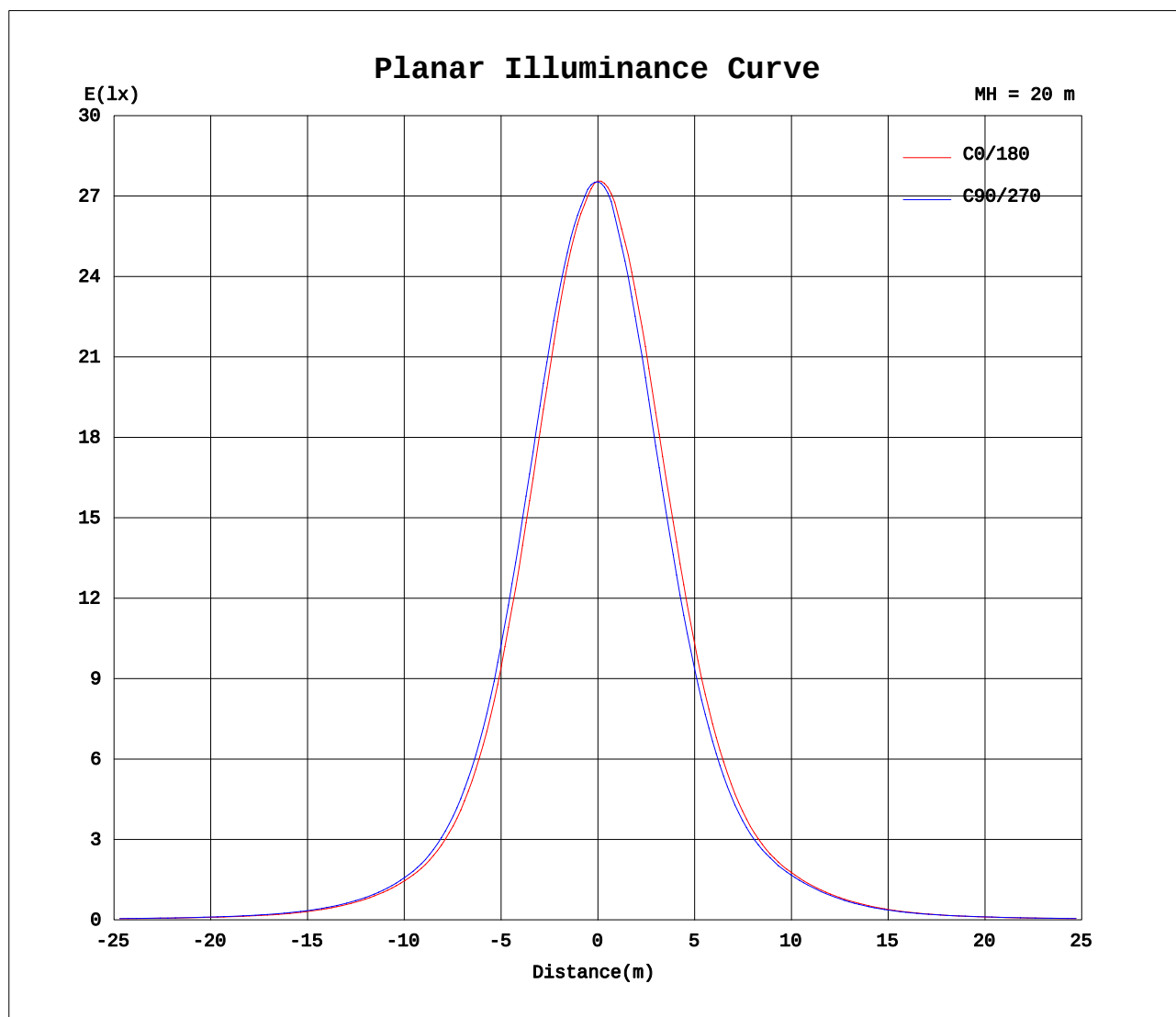
AvgL	cd/m2
L_0~180(65)av	34244
L_0~180(75)av	18737
L_0~180(85)av	7387
L_90~270(65)av	33853
L_90~270(75)av	18075
L_90~270(85)av	12002
L_45(65)av	34199
L_45(75)av	18374
L_45(85)av	11967

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:28DEG
Operators:SYF
Test Date:2017-10-10

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.300m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature: 28DEG
 Operators: SYF
 Test Date: 2017-10-10

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.401
 Humidity: 65.0%
 Test Distance: 5.300m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: LED	TYPE:track lights	WEIGHT:1.1
SPEC.: VN-TLO030-01 3000K CRI80	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

Table - -1

UNIT: $\times 10 \text{cd}$ [illegible]

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:28DEG
Operators:SYF
Test Date:2017-10-10

```

Range: 0 - 90DEG
Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.300m [K=1.0000]
Remarks:

```

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: LED	TYPE:track lights	WEIGHT:1.1
SPEC.: VN-TLO030-01 3000K CRI80	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

Table - - 2

UNIT: $\times 10 \text{cd}$ [illegible]

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature: 28DEG
Operators: SYF
Test Date: 2017-10-10

```

Range: 0 - 90DEG
Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.300m [K=1.0000]
Remarks:

```