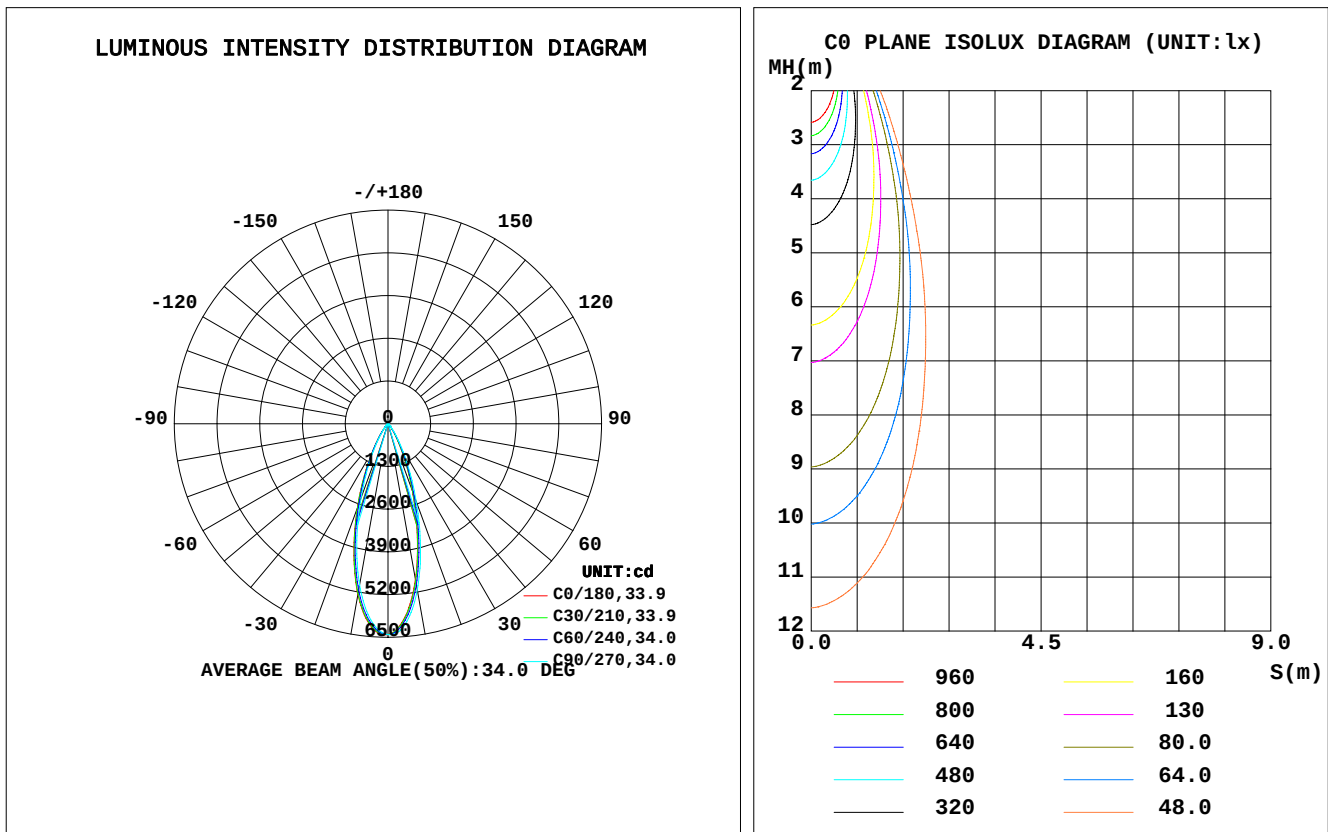


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: VN-TL0030-02	TYPE: track lights	WEIGHT: 1.2
SPEC.: 3000K CRI90 38D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 100.96 lm/W			
MODEL	CXM-14	Imax(cd)	6433	S/MH(C0/180)	0.59
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	0.55
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	2644.0	η UP, DN(C0-180)	0.0, 50.6
NOMINAL FLUX(lm)	2643.96	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 49.4
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	0.60



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:

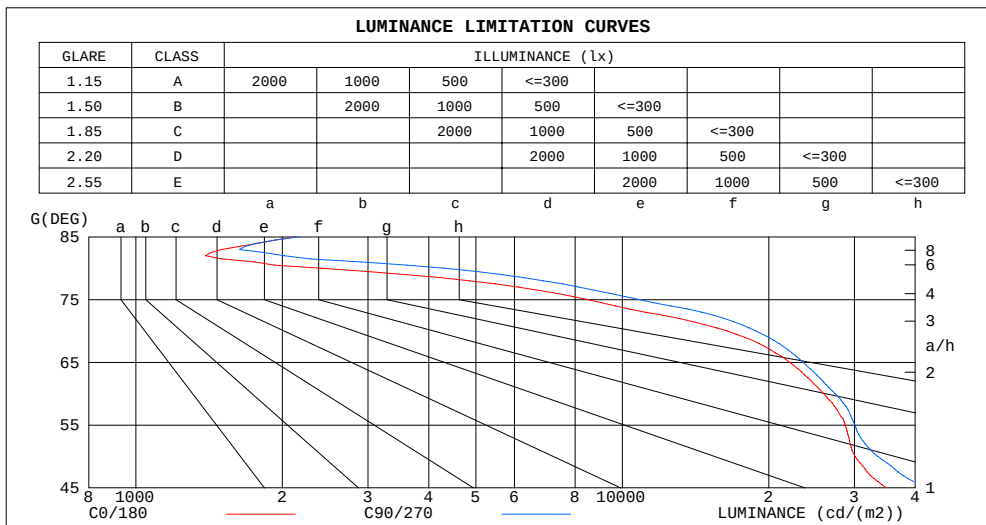
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	4810	4947	5137	5387	5273	5171	4982	4761	0- 10	545.2	545.2	20.6, 20.6
20	2179	2288	2519	2776	2733	2622	2405	2153	10- 20	1022	1567	59.3, 59.3
30	608.6	671.1	787.1	876.1	871.5	829.0	746.2	595.5	20- 30	667.6	2235	84.5, 84.5
40	131.2	148.4	180.8	200.7	188.3	188.9	173.8	135.7	30- 40	239.7	2474	93.6, 93.6
50	62.09	61.81	69.31	72.31	71.83	71.80	71.79	64.43	40- 50	77.46	2552	96.5, 96.5
60	41.59	42.38	44.02	46.32	46.94	45.53	43.62	41.25	50- 60	49.79	2602	98.4, 98.4
70	18.03	19.15	20.69	22.68	22.12	21.25	19.30	17.19	60- 70	31.57	2633	99.6, 99.6
80	1.338	1.644	2.407	3.135	2.824	2.567	1.838	1.056	70- 80	10.06	2643	100, 100
90	0.6587	0.6570	0.6481	0.6253	0.5584	0.5547	0.5910	0.5937	80- 90	0.8133	2644	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: 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: VN-TL0030-02	TYPE: track lights	WEIGHT: 1.2
SPEC.: 3000K CRI90 38D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	2123	2164
80	2400	4310
75	8493	10843
70	16428	18811
65	22063	23522
60	25917	27382
55	28723	30105
50	30099	33536
45	34975	42647

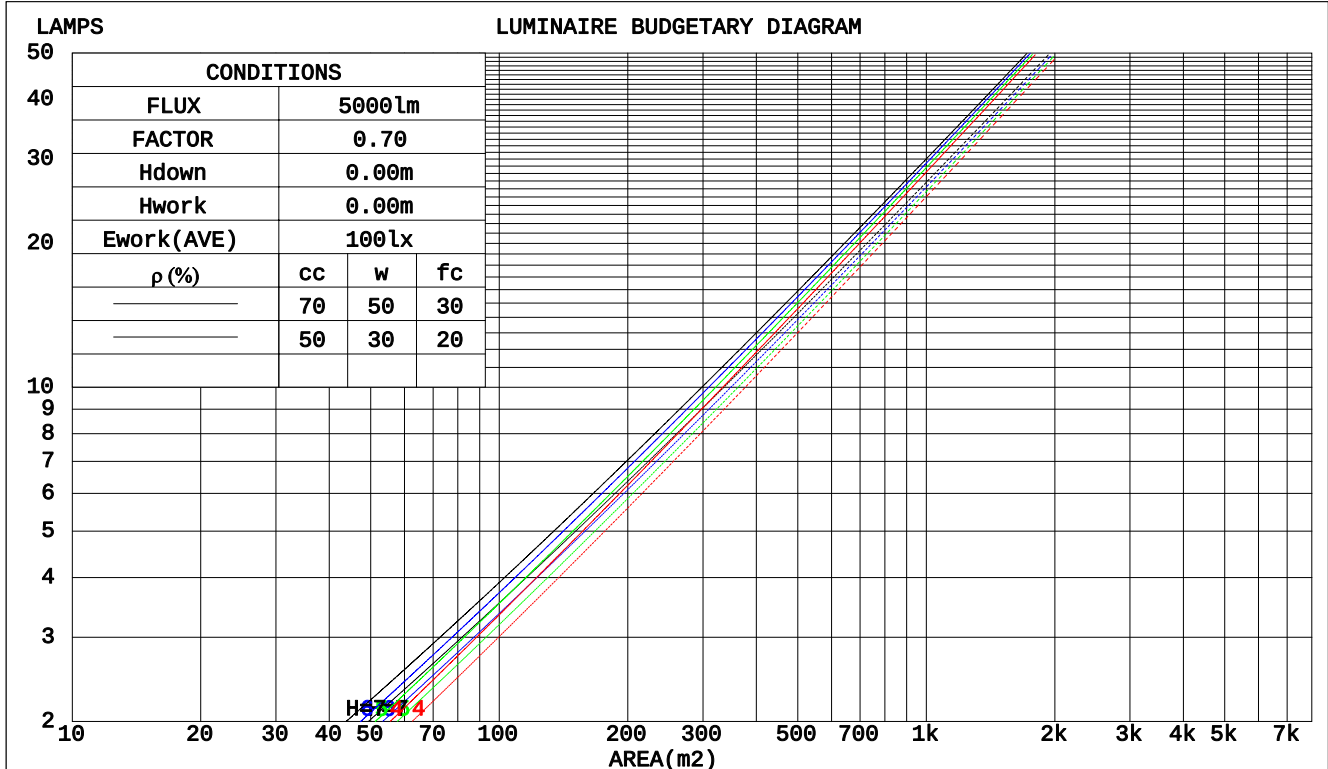
C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature: 28DEG
 Operators: SYF
 Test Date: 2017-10-10

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: VN-TL0030-02	TYPE: track lights	WEIGHT: 1.2
SPEC.: 3000K CRI90 38D	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	1.09	1.07	1.09	1.07	1.06	1.05	1.04	1.02	1.02	1.00	.99	.98	.97	.96	.95
2.0	1.05	1.01	.98	1.03	.99	.97	.99	.97	.95	.97	.95	.93	.94	.93	.91	.89
3.0	.99	.94	.91	.97	.93	.90	.95	.92	.89	.93	.90	.87	.90	.88	.86	.85
4.0	.94	.89	.85	.92	.88	.85	.90	.87	.84	.88	.85	.83	.87	.84	.82	.80
5.0	.89	.84	.80	.88	.83	.80	.86	.82	.79	.85	.81	.78	.83	.80	.78	.76
6.0	.85	.79	.76	.84	.79	.75	.82	.78	.75	.81	.77	.74	.80	.77	.74	.73
7.0	.81	.76	.72	.80	.75	.72	.79	.75	.71	.78	.74	.71	.77	.73	.71	.69
8.0	.77	.72	.69	.77	.72	.68	.76	.71	.68	.75	.71	.68	.74	.70	.68	.66
9.0	.74	.69	.66	.74	.69	.65	.73	.68	.65	.72	.68	.65	.71	.68	.65	.64
10.0	.71	.66	.63	.71	.66	.63	.70	.66	.63	.69	.65	.62	.69	.65	.62	.61



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: VN-TL0030-02	TYPE:track lights	WEIGHT:1.2
SPEC.:3000K CRI90 38D	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	.163	.093	.029	.156	.089	.028	.144	.082	.026	.132	.076	.024	.122	.070	.023		
2.0	.154	.084	.026	.148	.082	.025	.138	.077	.024	.128	.072	.023	.119	.068	.021		
3.0	.145	.077	.023	.140	.075	.023	.132	.071	.022	.123	.068	.021	.116	.064	.020		
4.0	.137	.071	.021	.133	.070	.021	.125	.066	.020	.118	.064	.019	.112	.061	.019		
5.0	.130	.066	.019	.126	.065	.019	.120	.062	.018	.114	.060	.018	.108	.058	.017		
6.0	.123	.062	.018	.120	.061	.017	.114	.059	.017	.109	.057	.017	.104	.055	.016		
7.0	.117	.058	.016	.114	.057	.016	.109	.055	.016	.105	.054	.016	.100	.052	.015		
8.0	.112	.055	.015	.109	.054	.015	.105	.052	.015	.101	.051	.015	.097	.050	.014		
9.0	.107	.052	.014	.105	.051	.014	.101	.050	.014	.097	.049	.014	.094	.047	.014		
10.0	.102	.049	.014	.100	.049	.014	.097	.047	.013	.094	.046	.013	.090	.045	.013		

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	.170	.157	.146	.146	.135	.126	.100	.093	.087	.057	.054	.051	.018	.017	.016	
2.0	.154	.133	.115	.132	.114	.099	.090	.079	.069	.052	.046	.041	.017	.015	.013	
3.0	.140	.113	.092	.120	.098	.080	.083	.068	.056	.048	.040	.033	.015	.013	.011	
4.0	.129	.098	.075	.111	.085	.065	.076	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.120	.087	.062	.103	.075	.054	.071	.052	.038	.041	.031	.023	.013	.010	.007	
6.0	.112	.077	.052	.096	.067	.045	.066	.047	.032	.038	.027	.019	.012	.009	.006	
7.0	.105	.069	.044	.090	.060	.039	.062	.042	.027	.036	.025	.016	.012	.008	.005	
8.0	.098	.063	.038	.085	.054	.033	.059	.038	.024	.034	.023	.014	.011	.007	.005	
9.0	.093	.057	.033	.080	.050	.029	.056	.035	.021	.032	.021	.012	.010	.007	.004	
10.0	.088	.053	.029	.076	.046	.025	.053	.032	.018	.031	.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: VN-TL0030-02					TYPE: track lights					WEIGHT: 1.2				
SPEC.: 3000K CRI90 38D					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					18.8	19.6	19.0	19.8	19.9	19.7	20.6	19.9	20.7	20.9
3H					19.3	20.0	19.5	20.2	20.4	20.2	20.9	20.4	21.1	21.3
4H					19.3	20.0	19.6	20.2	20.5	20.2	20.9	20.5	21.1	21.4
6H					19.3	19.9	19.5	20.2	20.4	20.2	20.8	20.4	21.1	21.3
8H					19.2	19.9	19.5	20.1	20.4	20.1	20.8	20.4	21.0	21.3
12H					19.2	19.8	19.5	20.1	20.3	20.1	20.7	20.4	21.0	21.2
4H 2H					19.0	19.7	19.3	20.0	20.2	19.8	20.6	20.1	20.8	21.0
3H					19.6	20.2	19.9	20.5	20.8	20.4	21.0	20.7	21.3	21.5
4H					19.6	20.2	20.0	20.5	20.8	20.4	21.0	20.8	21.3	21.6
6H					19.6	20.1	20.0	20.4	20.8	20.4	20.9	20.8	21.2	21.6
8H					19.5	20.0	19.9	20.3	20.7	20.3	20.8	20.7	21.2	21.5
12H					19.5	19.9	19.9	20.3	20.7	20.3	20.7	20.7	21.1	21.5
8H 4H					19.6	20.1	20.0	20.4	20.8	20.4	20.8	20.7	21.2	21.5
6H					19.5	19.9	19.9	20.3	20.7	20.3	20.7	20.7	21.1	21.5
8H					19.5	19.8	19.9	20.2	20.7	20.3	20.6	20.7	21.0	21.5
12H					19.4	19.7	19.9	20.1	20.6	20.2	20.5	20.7	20.9	21.4
12H 4H					19.5	20.0	19.9	20.3	20.7	20.3	20.7	20.7	21.1	21.5
6H					19.5	19.8	19.9	20.2	20.7	20.3	20.6	20.7	21.0	21.4
8H					19.4	19.7	19.9	20.1	20.6	20.2	20.5	20.7	20.9	21.4
Variations with the observer position at spacings:														
S = 1.0H					+ 1.1 / - 1.2					+ 1.7 / - 1.6				
1.5H					+ 2.2 / - 0.9					+ 3.2 / - 1.4				
2.0H					+ 0.5 / - 0.6					+ 1.1 / - 0.8				

CIE Pub.117, 2644 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 3.4$)

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: VN-TL0030-02	TYPE: track lights	WEIGHT: 1.2
SPEC.: 3000K CRI90 38D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

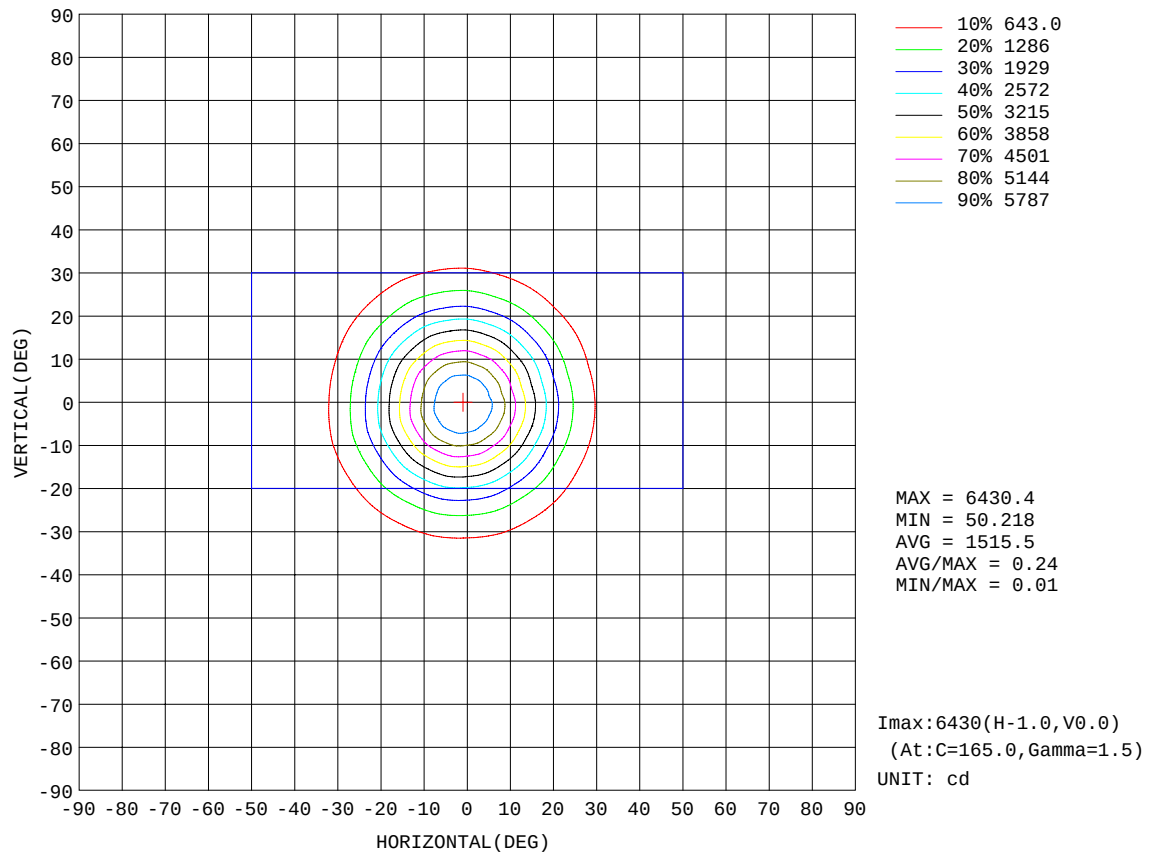
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	88	81	77	87	81	77	86	81	77	74
0.80	95	89	85	94	89	85	93	88	85	81
1.00	99	94	90	98	93	90	97	93	89	85
1.25	103	98	95	102	97	94	100	96	93	89
1.50	106	101	98	105	100	97	102	99	96	92
2.00	108	104	101	107	103	100	104	101	99	94
2.50	110	106	103	109	105	103	106	103	101	95
3.00	112	108	106	110	107	105	107	104	102	96
4.00	114	111	109	112	109	107	108	106	105	98
5.00	115	113	111	113	111	109	109	108	106	99
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNM = 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: VN-TL0030-02	TYPE: track lights	WEIGHT: 1.2
SPEC.: 3000K CRI90 38D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

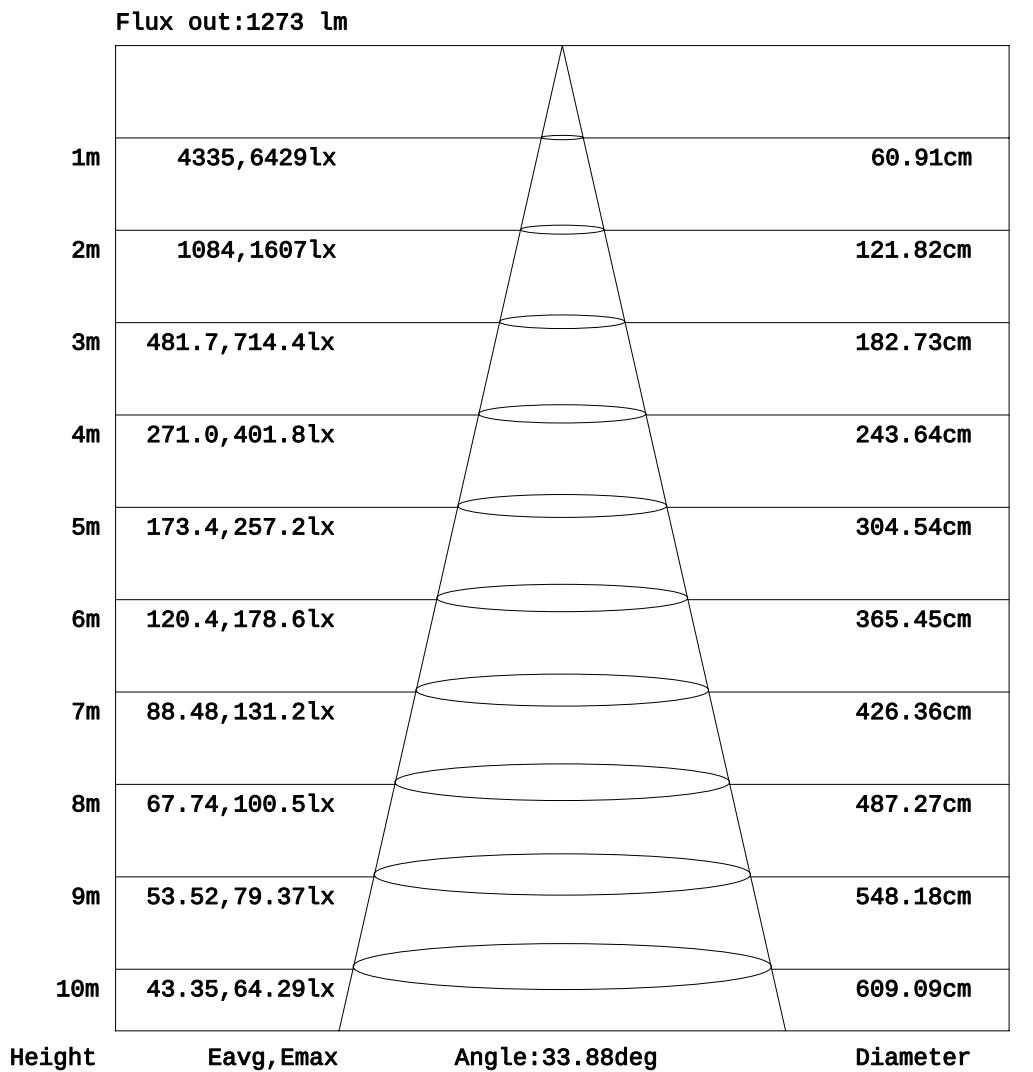


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature: 28DEG
Operators: SYF
Test Date: 2017-10-10

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: VN-TL0030-02	TYPE: track lights	WEIGHT: 1.2
SPEC.: 3000K CRI90 38D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:



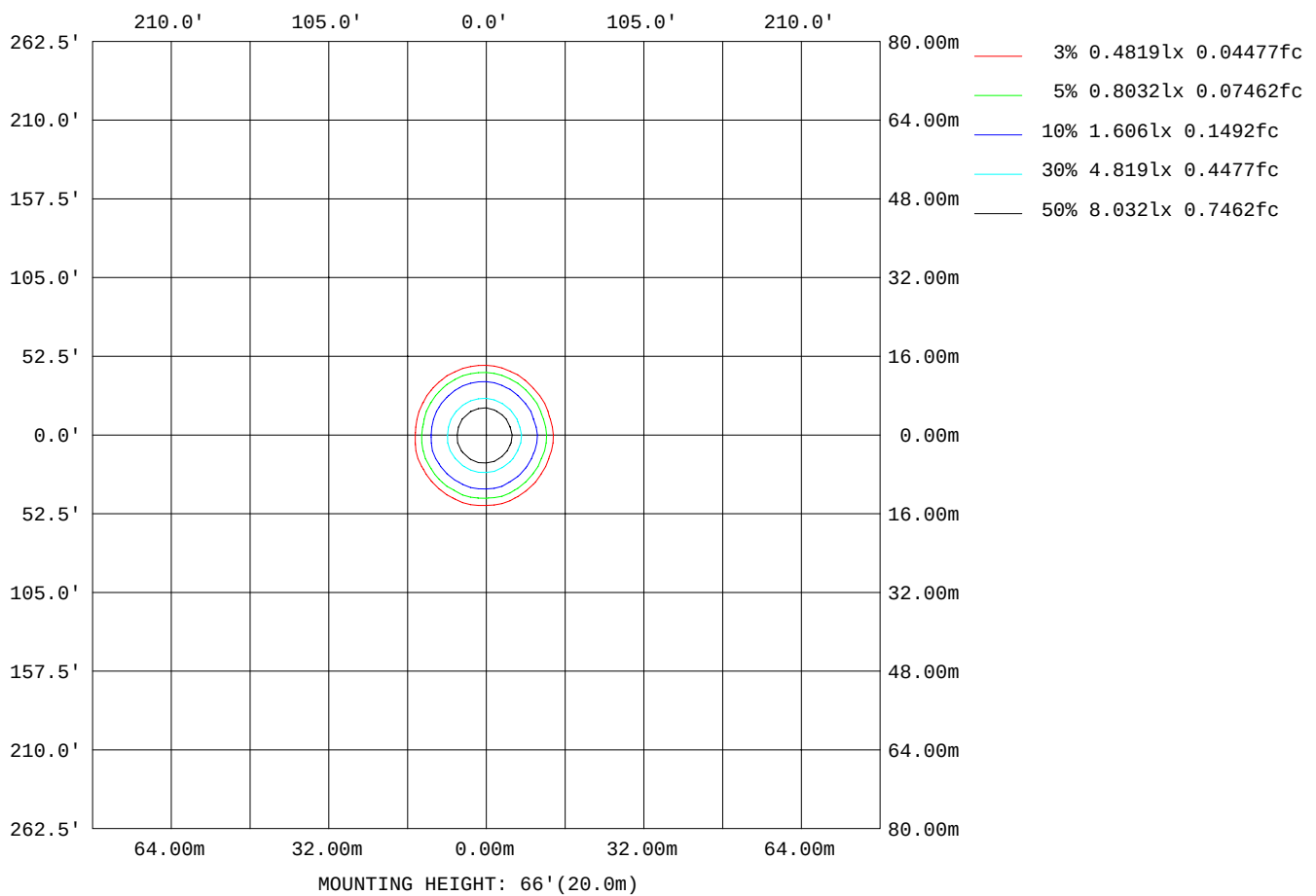
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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: VN-TL0030-02	TYPE: track lights	WEIGHT: 1.2
SPEC.: 3000K CRI90 38D	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: VN-TL0030-02	TYPE: track lights	WEIGHT: 1.2
SPEC.: 3000K CRI90 38D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

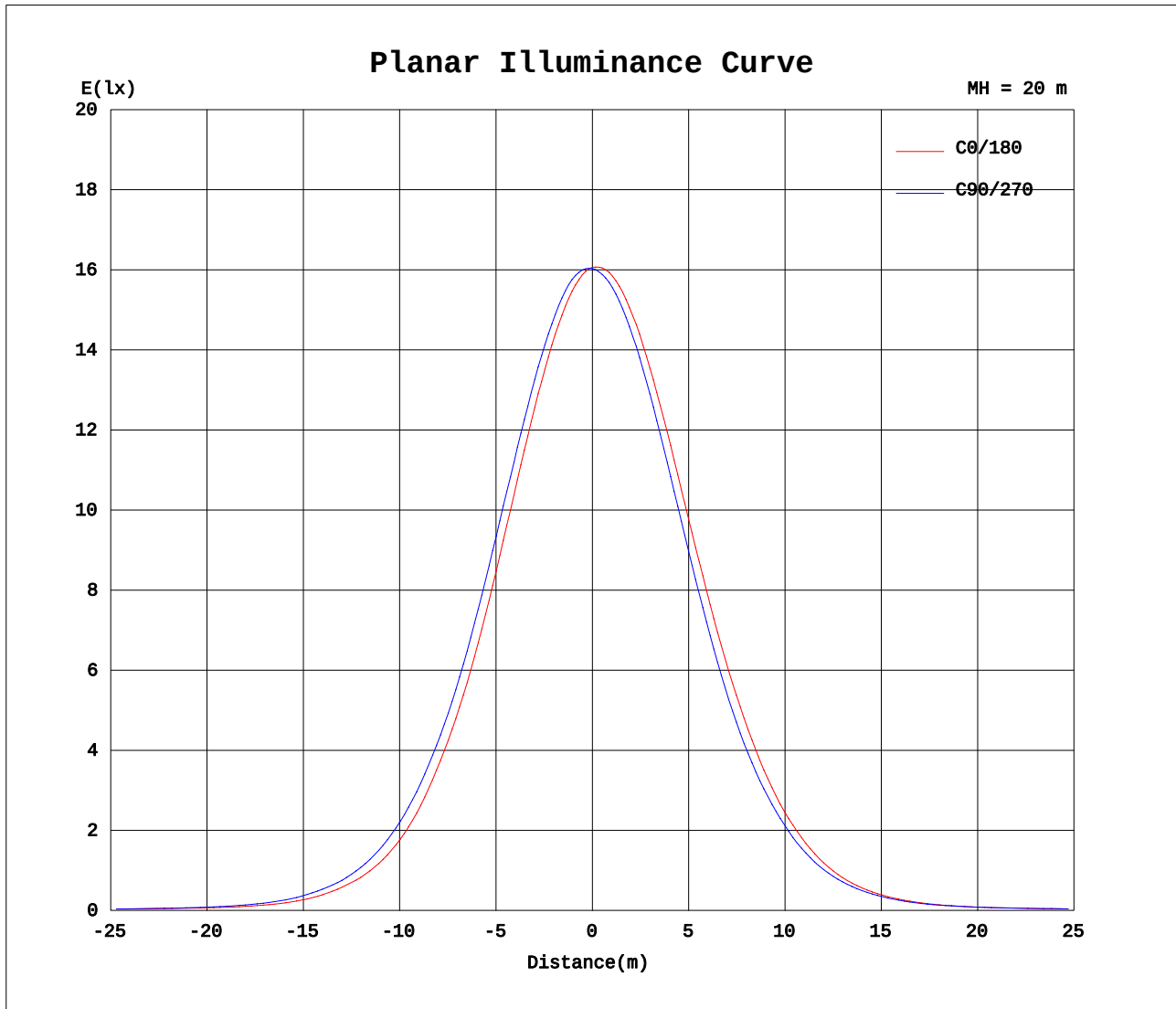
AvgL	cd/m2
L_0~180(65)av	23576
L_0~180(75)av	10082
L_0~180(85)av	1916
L_90~270(65)av	23295
L_90~270(75)av	10363
L_90~270(85)av	2028
L_45(65)av	23537
L_45(75)av	10317
L_45(85)av	1977

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: VN-TL030-02	TYPE: track lights	WEIGHT: 1.2
SPEC.: 3000K CRI90 38D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

UNIT: cd

[illegible]

```

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:

```