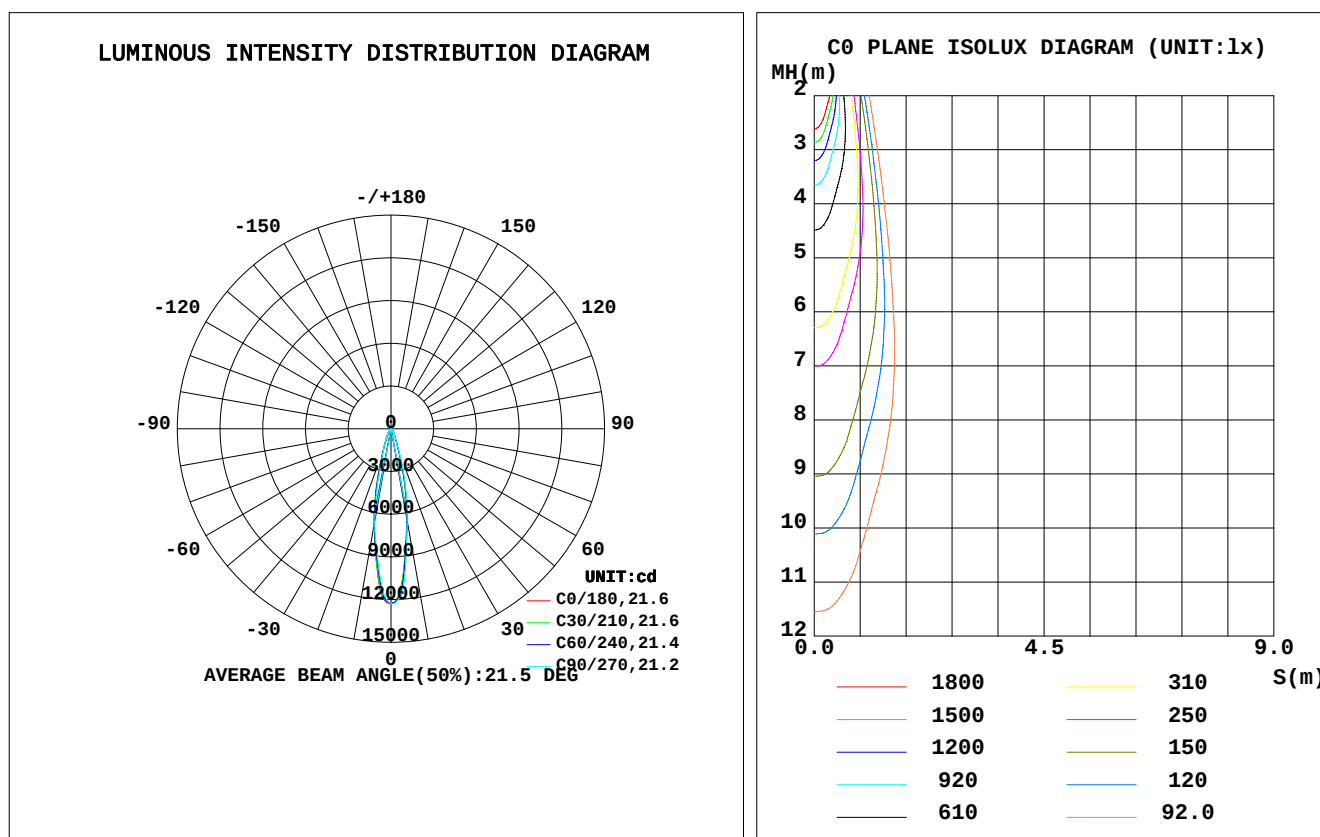


LUMINAIRE PHOTOMETRIC TEST REPORT

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: 98.76 lm/W
MODEL		Imax(cd)	12359	S/MH(C0/180)	0.37	
NOMINAL POWER(W)	30	LOR(%)	94.9	S/MH(C90/270)	0.36	
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	2696.6	η UP, DN(C0-180)	0.0, 47.7	
NOMINAL FLUX(lm)	2841.82	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 47.2	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE(V)	230	η down(%)	94.9	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:

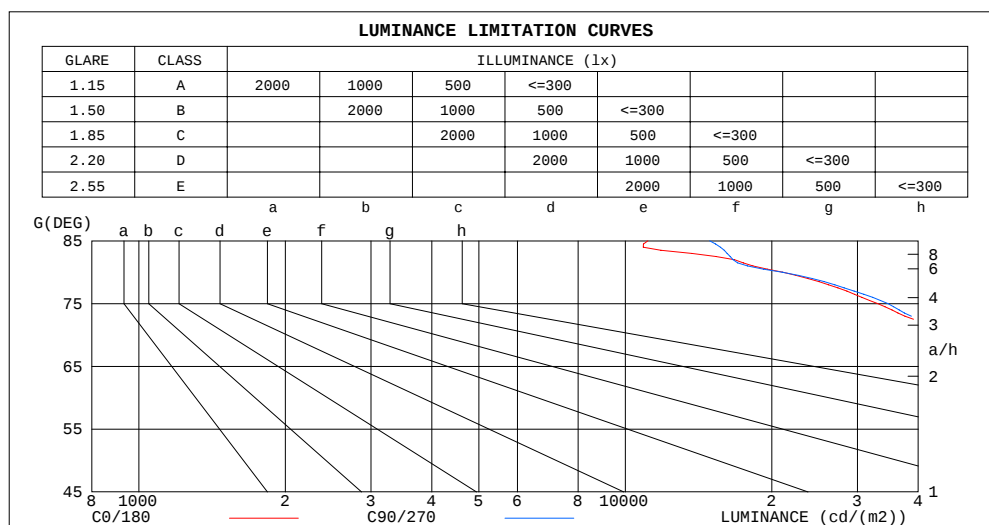
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	657.2	648.3	653.4	702.8	675.4	679.6	660.5	627.1	0- 10	854.4	854.4	31.7, 30.1
20	148.1	144.9	154.5	169.2	151.8	154.8	150.8	142.7	10- 20	970.4	1825	67.7, 64.2
30	46.48	42.60	40.65	42.61	43.17	50.16	52.26	49.30	20- 30	371.5	2196	81.4, 77.3
40	21.19	20.13	19.51	20.11	20.19	22.53	24.07	22.86	30- 40	194.4	2391	88.7, 84.1
50	12.39	12.02	11.82	12.09	12.17	12.87	13.50	12.78	40- 50	125.2	2516	93.3, 88.5
60	8.210	7.901	7.824	8.018	8.078	8.345	8.673	8.248	50- 60	90.67	2607	96.7, 91.7
70	4.142	4.066	4.105	4.325	4.243	4.286	4.290	4.041	60- 70	60.27	2667	98.9, 93.8
80	0.9659	0.9397	0.9621	1.106	1.027	1.034	0.9725	0.8527	70- 80	25.47	2692	99.8, 94.7
90	0.0898	0.0918	0.0926	0.0901	0.0807	0.0773	0.0804	0.0810	80- 90	4.230	2697	100, 94.9
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	11124	14906
80	21065	21012
75	33017	34638
70	45863	45519
65	54132	52669
60	62184	59346
55	66353	64065
50	73020	69731
45	84917	79792

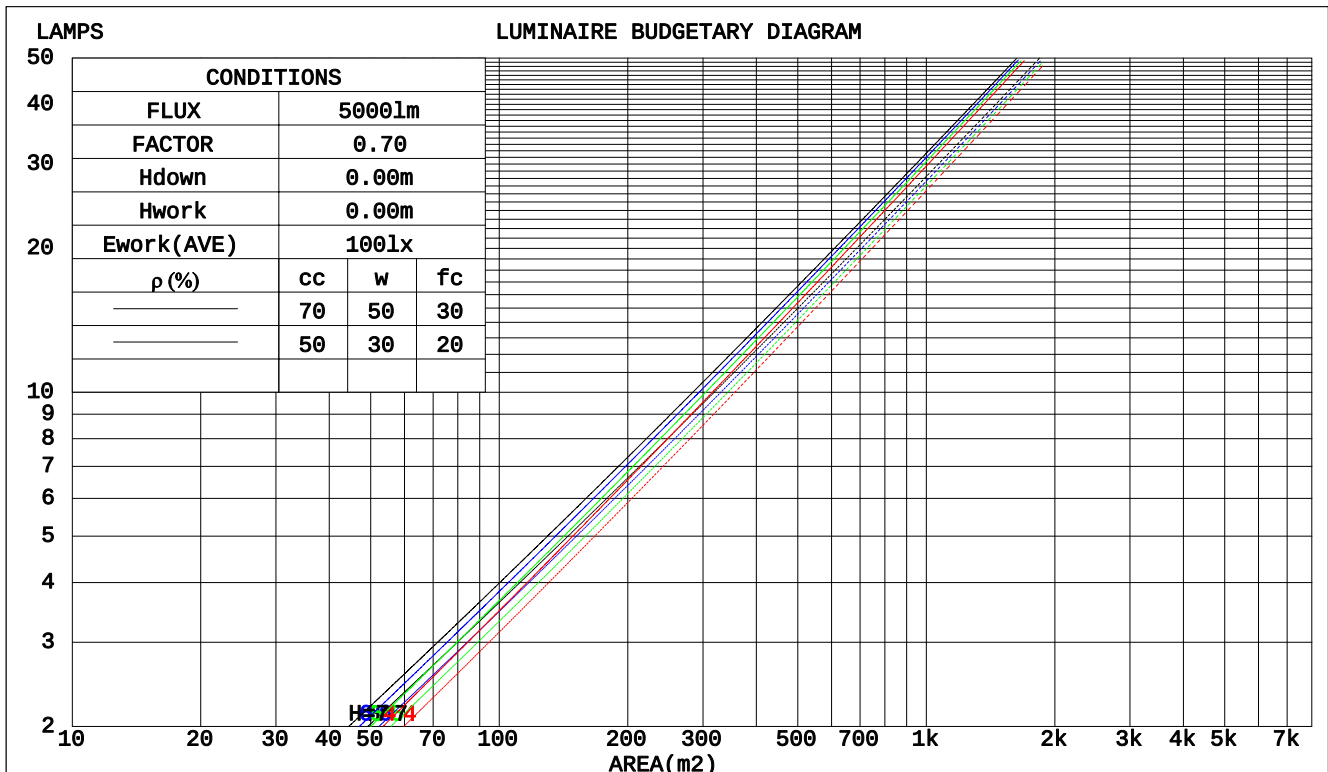
C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature: 28DEG
 Operators: SYF
 Test Date: 2017-10-10

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	1.13	1.13	1.13	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	.97	.97	.97	.95
1.0	1.06	1.04	1.02	1.04	1.02	1.00	.90	.98	.97	.96	.95	.94	.93	.92	.91	.90
2.0	.99	.96	.93	.98	.95	.92	.95	.92	.90	.92	.90	.88	.89	.88	.86	.85
3.0	.94	.90	.87	.93	.89	.86	.90	.87	.85	.88	.85	.83	.86	.84	.82	.81
4.0	.89	.85	.81	.88	.84	.81	.86	.83	.80	.84	.81	.79	.83	.80	.78	.77
5.0	.85	.81	.77	.84	.80	.77	.83	.79	.76	.81	.78	.75	.80	.77	.75	.74
6.0	.82	.77	.73	.81	.76	.73	.80	.76	.73	.78	.75	.72	.77	.74	.72	.71
7.0	.78	.74	.70	.78	.73	.70	.77	.73	.70	.76	.72	.70	.75	.72	.69	.68
8.0	.76	.71	.68	.75	.71	.68	.74	.70	.67	.73	.70	.67	.72	.69	.67	.66
9.0	.73	.68	.65	.73	.68	.65	.72	.68	.65	.71	.67	.65	.70	.67	.65	.64
10.0	.71	.66	.63	.70	.66	.63	.70	.66	.63	.69	.65	.63	.68	.65	.63	.62



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	.155	.088	.028	.149	.085	.027	.137	.079	.025	.126	.073	.023	.116	.067	.022		
2.0	.146	.080	.025	.141	.077	.024	.131	.073	.023	.122	.068	.021	.113	.064	.020		
3.0	.136	.073	.022	.132	.071	.021	.123	.067	.020	.116	.063	.019	.109	.060	.019		
4.0	.127	.066	.019	.124	.065	.019	.117	.062	.018	.110	.059	.018	.104	.056	.017		
5.0	.120	.061	.018	.116	.060	.017	.110	.057	.017	.104	.055	.016	.099	.053	.016		
6.0	.112	.056	.016	.110	.055	.016	.104	.053	.016	.099	.052	.015	.095	.050	.015		
7.0	.106	.053	.015	.104	.052	.015	.099	.050	.014	.095	.049	.014	.091	.047	.014		
8.0	.101	.049	.014	.098	.048	.014	.094	.047	.013	.090	.046	.013	.087	.045	.013		
9.0	.096	.046	.013	.094	.046	.013	.090	.045	.013	.087	.043	.012	.083	.042	.012		
10.0	.091	.044	.012	.089	.043	.012	.086	.042	.012	.083	.041	.012	.080	.040	.012		

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	.181	.181	.181	.154	.154	.154	.105	.105	.105	.061	.061	.061	.019	.019	.019		
1.0	.162	.149	.138	.138	.128	.119	.095	.088	.082	.054	.051	.048	.017	.016	.015		
2.0	.146	.126	.109	.125	.108	.094	.086	.075	.066	.049	.044	.038	.016	.014	.013		
3.0	.133	.108	.087	.114	.093	.076	.078	.065	.053	.045	.038	.031	.015	.012	.010		
4.0	.122	.093	.072	.105	.081	.062	.072	.056	.044	.042	.033	.026	.013	.011	.009		
5.0	.113	.082	.059	.097	.071	.052	.067	.050	.037	.039	.029	.022	.012	.009	.007		
6.0	.104	.073	.050	.090	.063	.044	.062	.044	.031	.036	.026	.018	.012	.008	.006		
7.0	.097	.065	.043	.084	.057	.037	.058	.040	.026	.034	.023	.016	.011	.008	.005		
8.0	.091	.059	.037	.079	.051	.032	.054	.036	.023	.032	.021	.014	.010	.007	.004		
9.0	.086	.054	.032	.074	.047	.028	.051	.033	.020	.030	.019	.012	.010	.006	.004		
10.0	.081	.049	.028	.070	.043	.025	.048	.030	.018	.028	.018	.010	.009	.006	.003		

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	2H	22.6	23.3	22.8	23.5	23.7	22.3	23.1	22.6	23.3	23.4
	3H	23.5	24.2	23.7	24.4	24.6	23.3	24.1	23.6	24.2	24.4
	4H	23.7	24.4	24.0	24.7	24.9	23.6	24.3	23.9	24.5	24.7
	6H	23.8	24.5	24.1	24.7	25.0	23.7	24.4	24.0	24.6	24.8
	8H	23.8	24.5	24.1	24.7	25.0	23.7	24.3	24.0	24.6	24.8
	12H	23.8	24.4	24.1	24.7	24.9	23.7	24.3	24.0	24.5	24.8
4H	2H	23.0	23.7	23.2	23.9	24.1	22.8	23.5	23.1	23.7	23.9
	3H	24.0	24.7	24.4	24.9	25.2	23.9	24.5	24.2	24.8	25.1
	4H	24.3	24.9	24.7	25.2	25.5	24.2	24.8	24.6	25.1	25.4
	6H	24.5	25.0	24.8	25.3	25.6	24.4	24.9	24.7	25.2	25.6
	8H	24.5	24.9	24.8	25.3	25.6	24.4	24.8	24.8	25.2	25.6
	12H	24.4	24.9	24.8	25.2	25.6	24.4	24.8	24.8	25.2	25.5
8H	4H	24.4	24.9	24.8	25.2	25.6	24.3	24.8	24.7	25.1	25.5
	6H	24.6	24.9	25.0	25.3	25.7	24.5	24.9	24.9	25.3	25.7
	8H	24.6	24.9	25.0	25.3	25.8	24.5	24.8	24.9	25.2	25.7
	12H	24.6	24.9	25.0	25.3	25.8	24.5	24.8	24.9	25.2	25.7
12H	4H	24.4	24.8	24.8	25.2	25.5	24.3	24.7	24.7	25.1	25.4
	6H	24.5	24.9	25.0	25.3	25.7	24.4	24.8	24.9	25.2	25.6
	8H	24.5	24.8	25.0	25.3	25.7	24.5	24.8	24.9	25.2	25.7
Variations with the observer position at spacings:											
S = 1.0H		+ 0.4 / - 0.6					+ 0.4 / - 0.6				
1.5H		+ 0.5 / - 0.3					+ 0.4 / - 0.4				
2.0H		+ 0.6 / - 0.5					+ 0.5 / - 0.4				

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
 γ 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:

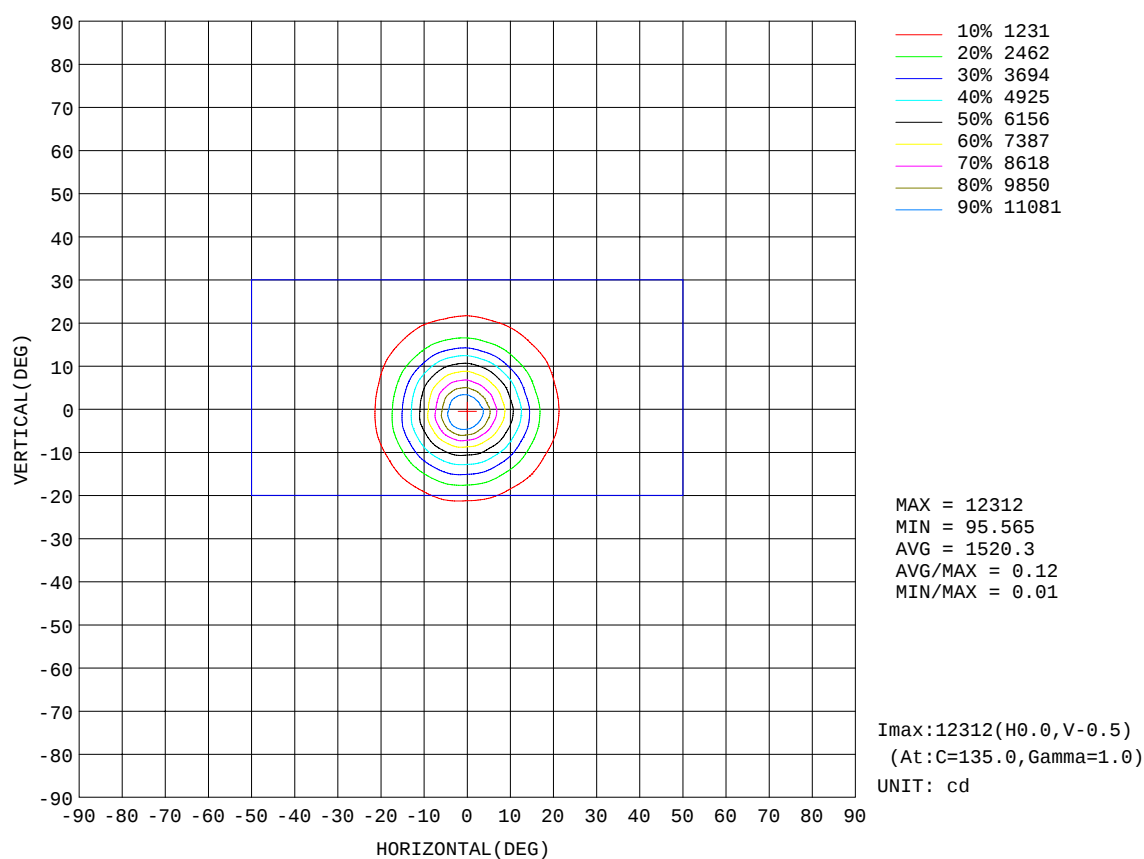
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	80	74	70	80	74	70	79	73	70	66
0.80	87	81	77	87	81	77	86	80	77	73
1.00	92	86	82	91	86	82	90	86	82	78
1.25	96	91	87	95	90	87	93	89	86	82
1.50	99	94	90	98	93	90	95	92	89	84
2.00	102	97	94	100	96	93	98	94	92	87
2.50	104	100	96	102	98	96	99	96	94	88
3.00	105	102	99	103	100	98	100	98	96	89
4.00	107	104	102	105	103	101	102	100	98	91
5.00	109	106	104	107	105	103	103	101	100	93
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:

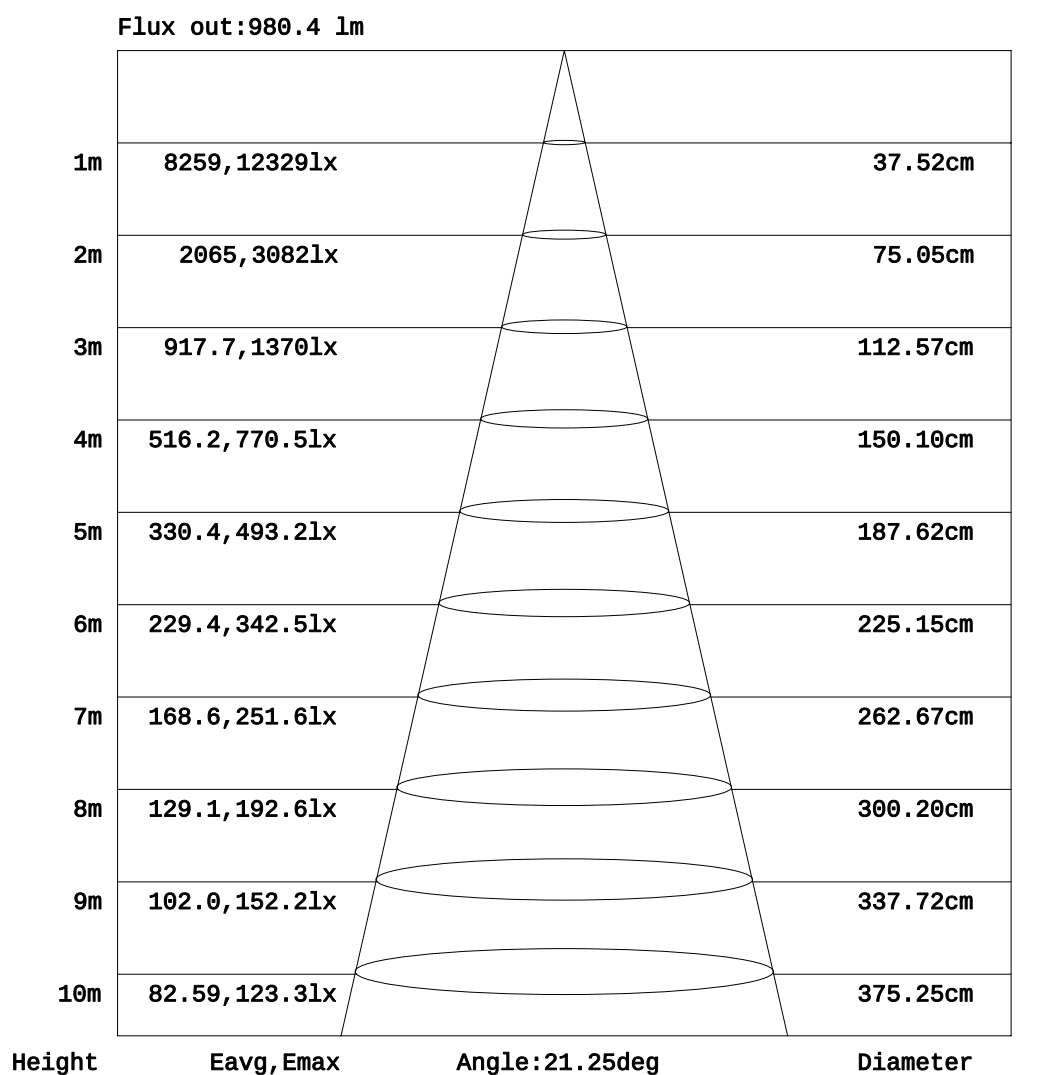


C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature: 28DEG
 Operators: SYF
 Test Date: 2017-10-10

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:



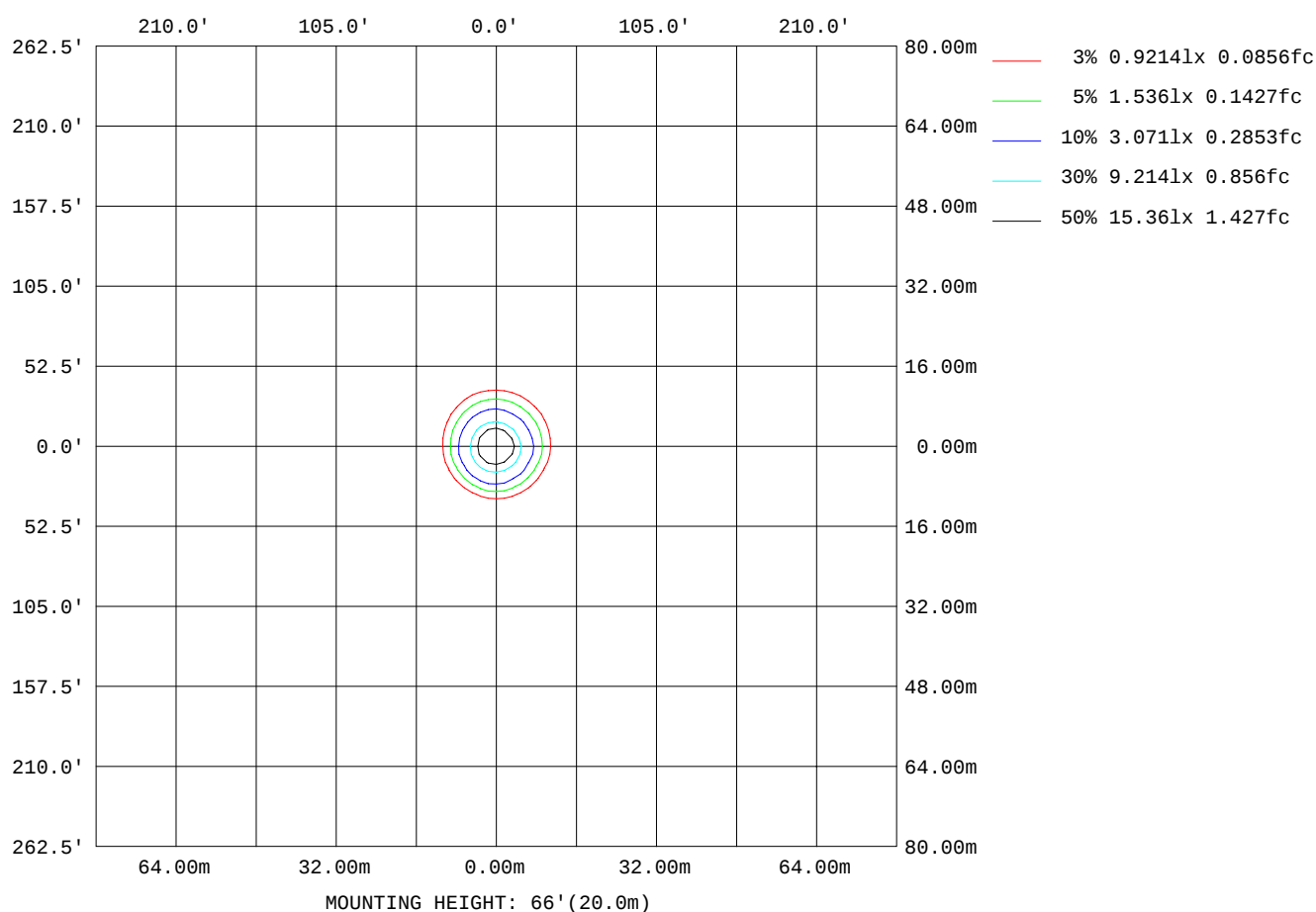
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:

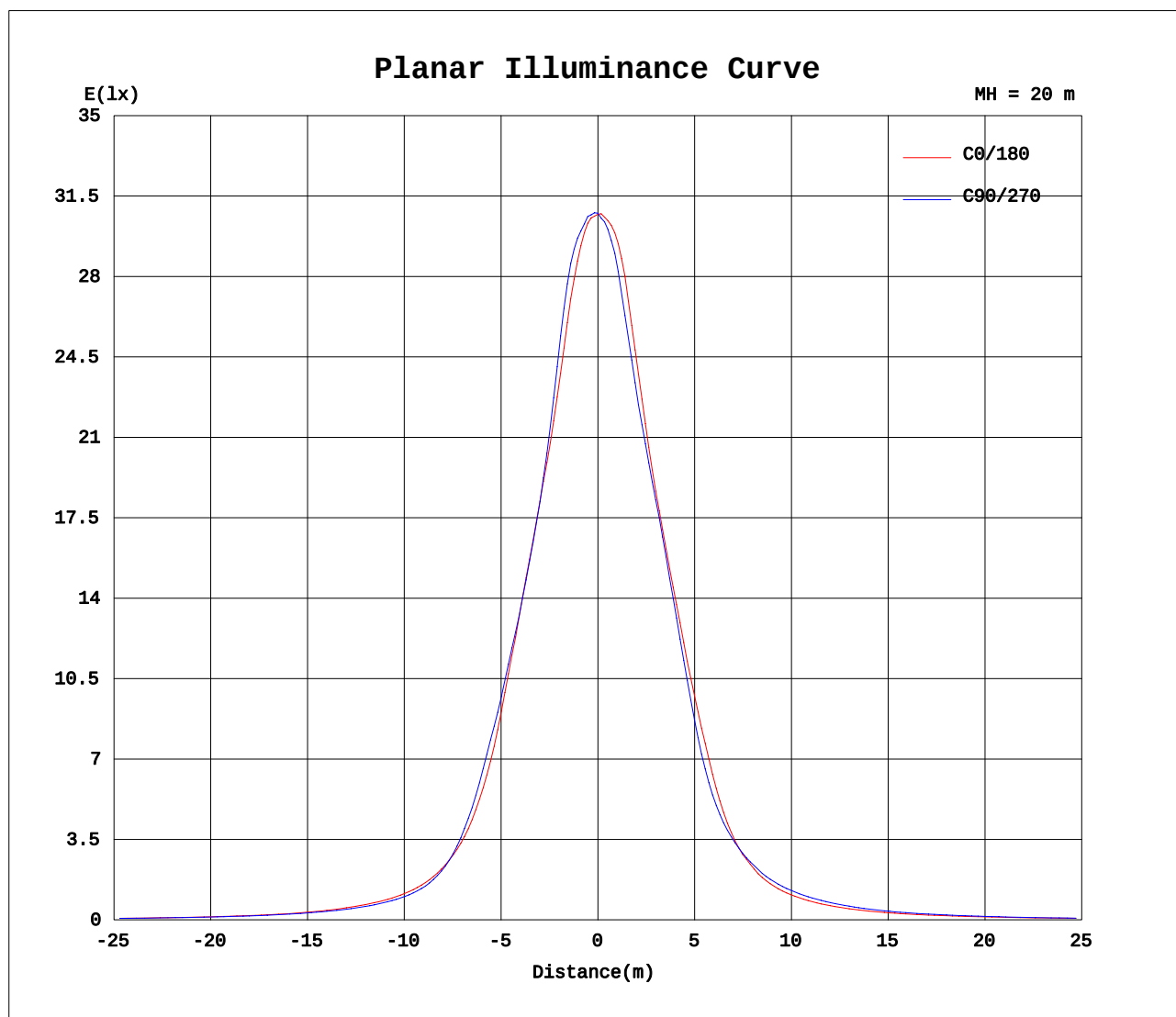
AvgL	cd/m2
L_0~180(65)av	54481
L_0~180(75)av	34172
L_0~180(85)av	10472
L_90~270(65)av	54606
L_90~270(75)av	34119
L_90~270(85)av	14452
L_45(65)av	54234
L_45(75)av	34167
L_45(85)av	15985

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-TL030-01 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

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: