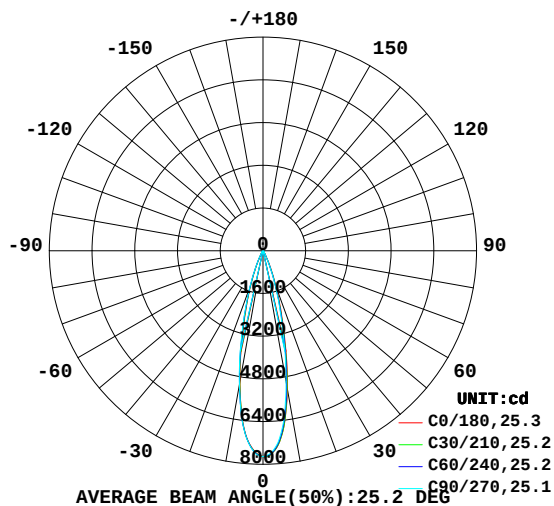


LUMINAIRE PHOTOMETRIC TEST REPORT

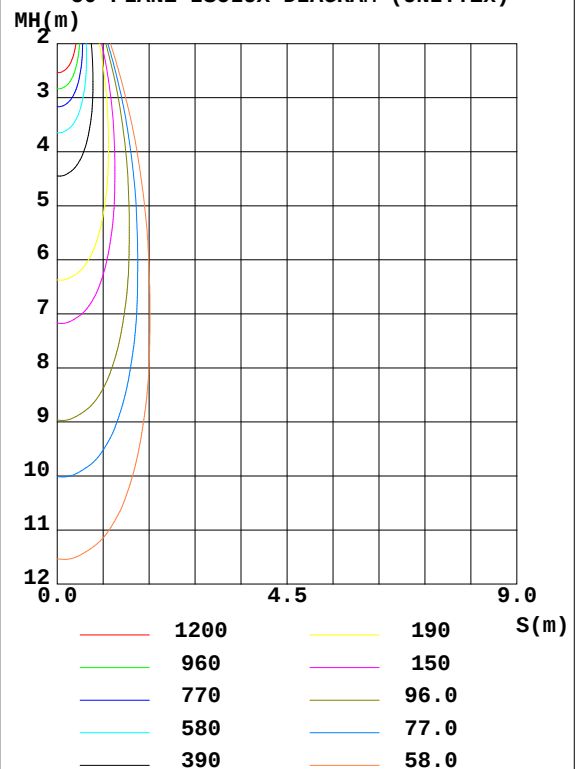
NAME: VN-TL0020-21	TYPE: LED TRACK LIGHT	WEIGHT:
SPEC.: CRI90 3000K 18D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 98.95 lm/W
MODEL	CXM-14-AC30	Imax(cd)	7728	S/MH(C0/180)	0.42	
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	0.44	
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	1871.7	η UP, DN(C0-180)	0.0, 49.8	
NOMINAL FLUX(lm)	1871.66	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 50.2	
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	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT: lx)



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature: 25.3DEG
Operators: XYJ
Test Date: 2019-12-4

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity: 65.0%
Test Distance: 5.190m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

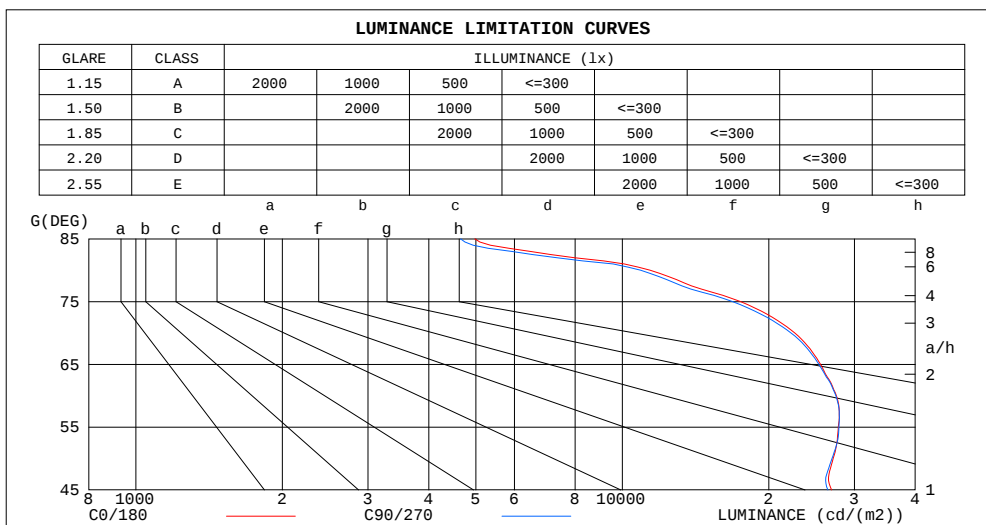
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	5249	5249	4987	5037	4987	4991	5100	5098	0- 10	610.8	610.8	32.6, 32.6
20	1435	1380	1260	1284	1307	1300	1428	1398	10- 20	785.2	1396	74.6, 74.6
30	210.1	178.8	169.2	176.6	185.7	166.6	199.8	204.1	20- 30	261.6	1658	88.6, 88.6
40	76.13	73.90	73.52	75.14	73.72	70.85	73.43	74.71	30- 40	67.41	1725	92.2, 92.2
50	56.04	55.16	55.76	56.54	58.65	58.54	58.31	55.80	40- 50	48.85	1774	94.8, 94.8
60	44.27	44.26	44.17	44.15	44.16	44.31	44.93	43.70	50- 60	46.73	1821	97.3, 97.3
70	24.87	25.10	24.43	24.05	23.44	23.76	24.53	24.34	60- 70	34.06	1855	99.1, 99.1
80	6.364	6.484	6.086	5.804	5.422	5.548	5.844	5.847	70- 80	15.00	1870	99.9, 99.9
90	0.6183	0.6099	0.6164	0.6051	0.5808	0.5635	0.5722	0.5654	80- 90	2.062	1872	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: 25.3DEG
 Operators: XYJ
 Test Date: 2019-12-4

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.401
 Humidity: 65.0%
 Test Distance: 5.190m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

NAME: vN-TL0020-21	TYPE:LED TRACK LIGHT	WEIGHT:
SPEC.:CRI90 3000K 18D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	4974	4649
80	11404	10900
75	17494	16847
70	22624	22211
65	25546	25351
60	27551	27475
55	27798	27872
50	27128	26978
45	26915	26450

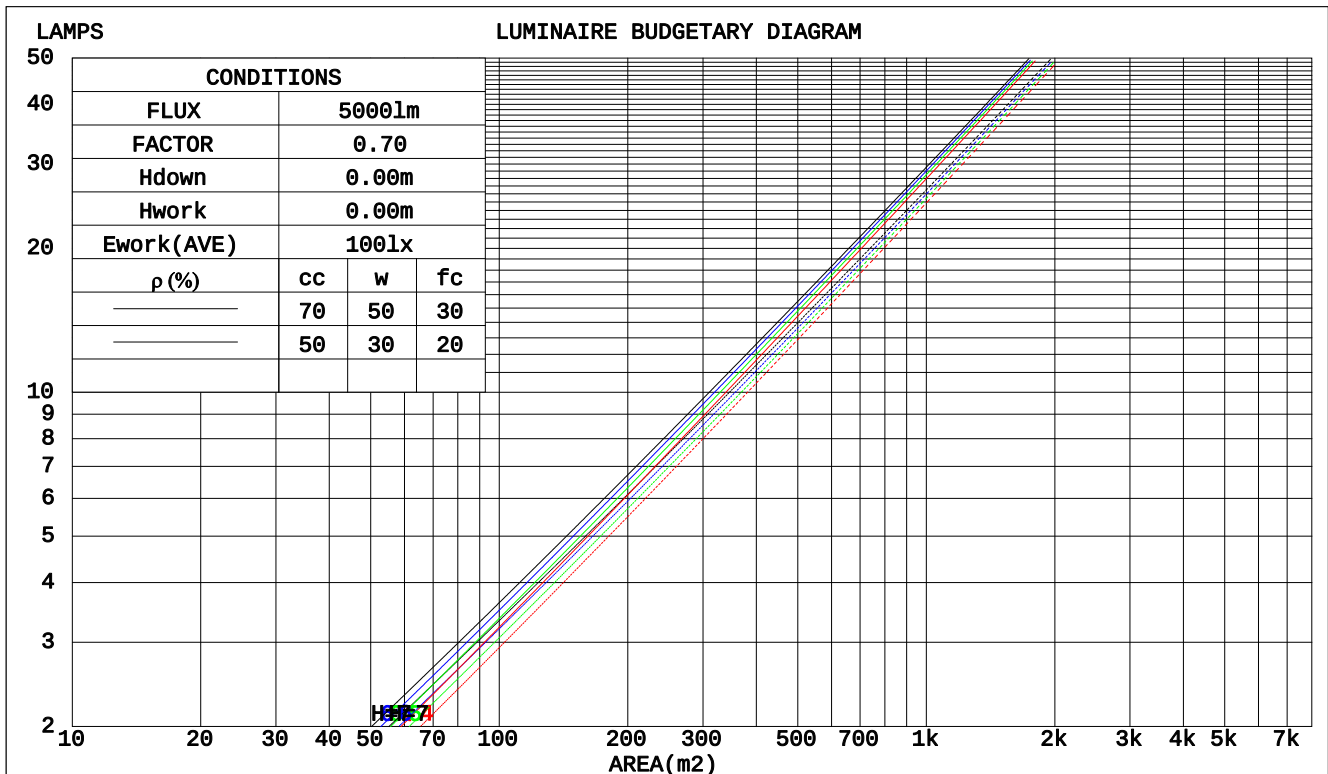
C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature: 25.3DEG
 Operators: XYJ
 Test Date: 2019-12-4

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.401
 Humidity: 65.0%
 Test Distance: 5.190m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: VN-TL0020-21	TYPE:LED TRACK LIGHT	WEIGHT:
SPEC.:CRI90 3000K 18D	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	1.06	1.02	.99	1.04	1.01	.99	1.01	.99	.96	.98	.96	.94	.95	.94	.92	.91
3.0	1.01	.97	.93	.99	.96	.93	.97	.94	.91	.94	.92	.90	.92	.90	.88	.87
4.0	.96	.92	.88	.95	.91	.88	.93	.89	.87	.91	.88	.86	.89	.87	.85	.84
5.0	.92	.87	.84	.91	.87	.84	.90	.86	.83	.88	.85	.82	.87	.84	.82	.80
6.0	.89	.84	.81	.88	.84	.80	.86	.83	.80	.85	.82	.79	.84	.81	.79	.78
7.0	.85	.81	.78	.85	.80	.77	.84	.80	.77	.83	.79	.77	.82	.79	.76	.75
8.0	.83	.78	.75	.82	.78	.75	.81	.77	.74	.80	.77	.74	.79	.76	.74	.73
9.0	.80	.76	.73	.80	.75	.72	.79	.75	.72	.78	.74	.72	.77	.74	.72	.71
10.0	.78	.73	.70	.77	.73	.70	.77	.73	.70	.76	.72	.70	.75	.72	.70	.69



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:XYJ
Test Date:2019-12-4

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.190m [K=1.0000]
Remarks:

WEC AND CCEC

NAME: VN-TL0020-21	TYPE:LED TRACK LIGHT	WEIGHT:
SPEC.:CRI90 3000K 18D	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	.154	.088	.028	.148	.084	.027	.135	.078	.025	.124	.071	.023	.113	.066	.021		
2.0	.144	.079	.024	.138	.076	.023	.128	.071	.022	.118	.066	.021	.110	.062	.020		
3.0	.134	.071	.021	.129	.069	.021	.121	.065	.020	.113	.062	.019	.105	.058	.018		
4.0	.125	.065	.019	.121	.063	.019	.114	.060	.018	.107	.057	.017	.100	.055	.017		
5.0	.117	.060	.017	.114	.058	.017	.107	.056	.016	.102	.054	.016	.096	.051	.015		
6.0	.110	.055	.016	.107	.054	.016	.102	.052	.015	.097	.050	.015	.092	.048	.014		
7.0	.104	.052	.015	.102	.051	.014	.097	.049	.014	.092	.047	.014	.088	.046	.013		
8.0	.099	.048	.014	.097	.048	.013	.092	.046	.013	.088	.045	.013	.085	.044	.013		
9.0	.094	.045	.013	.092	.045	.013	.088	.044	.012	.085	.043	.012	.082	.041	.012		
10.0	.090	.043	.012	.088	.042	.012	.085	.041	.012	.082	.040	.012	.079	.040	.011		

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	.158	.147	.145	.135	.126	.099	.093	.087	.057	.054	.051	.018	.017	.016	
2.0	.153	.133	.116	.131	.114	.100	.090	.079	.070	.052	.046	.041	.017	.015	.013	
3.0	.138	.113	.094	.119	.098	.081	.081	.068	.057	.047	.040	.034	.015	.013	.011	
4.0	.126	.098	.077	.108	.085	.067	.074	.059	.047	.043	.035	.028	.014	.011	.009	
5.0	.116	.086	.064	.100	.074	.056	.069	.052	.039	.040	.031	.023	.013	.010	.008	
6.0	.107	.076	.054	.092	.066	.047	.064	.046	.033	.037	.027	.020	.012	.009	.007	
7.0	.100	.068	.046	.086	.059	.040	.059	.041	.028	.034	.024	.017	.011	.008	.006	
8.0	.093	.062	.040	.080	.053	.035	.055	.037	.025	.032	.022	.015	.010	.007	.005	
9.0	.087	.056	.035	.075	.049	.030	.052	.034	.021	.030	.020	.013	.010	.007	.004	
10.0	.082	.051	.030	.071	.044	.027	.049	.031	.019	.029	.018	.011	.009	.006	.004	

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature:25.3DEG
 Operators:XYJ
 Test Date:2019-12-4

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
 Humidity:65.0%
 Test Distance:5.190m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

NAME: VN-TL0020-21						TYPE:LED TRACK LIGHT			WEIGHT:		
SPEC.:CRI90 3000K 18D						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		15.9	16.6	16.1	16.8	16.9	16.0	16.7	16.2	16.9	17.0
3H		17.3	18.0	17.6	18.2	18.4	17.4	18.1	17.6	18.2	18.4
4H		17.7	18.4	18.0	18.6	18.8	17.8	18.4	18.0	18.6	18.8
6H		17.9	18.5	18.2	18.7	19.0	17.9	18.5	18.2	18.7	19.0
8H		17.9	18.5	18.2	18.7	19.0	17.9	18.5	18.2	18.7	19.0
12H		17.9	18.4	18.2	18.7	19.0	17.8	18.4	18.2	18.7	19.0
4H	2H	16.6	17.2	16.8	17.4	17.6	16.7	17.3	16.9	17.5	17.7
	3H	18.1	18.7	18.4	18.9	19.2	18.1	18.7	18.4	19.0	19.2
	4H	18.6	19.1	18.9	19.4	19.7	18.6	19.1	18.9	19.4	19.7
	6H	18.8	19.2	19.1	19.6	19.9	18.8	19.2	19.1	19.6	19.9
	8H	18.8	19.2	19.2	19.6	19.9	18.8	19.2	19.1	19.5	19.9
	12H	18.7	19.1	19.1	19.5	19.9	18.7	19.1	19.1	19.5	19.9
8H	4H	18.7	19.1	19.1	19.5	19.8	18.7	19.1	19.1	19.5	19.8
	6H	18.9	19.3	19.4	19.7	20.1	18.9	19.3	19.3	19.7	20.1
	8H	19.0	19.3	19.4	19.7	20.1	18.9	19.3	19.4	19.7	20.1
	12H	18.9	19.2	19.4	19.7	20.1	18.9	19.2	19.4	19.6	20.1
12H	4H	18.7	19.1	19.1	19.4	19.8	18.7	19.1	19.1	19.4	19.8
	6H	18.9	19.2	19.4	19.7	20.1	18.9	19.2	19.3	19.6	20.1
	8H	18.9	19.2	19.4	19.7	20.1	18.9	19.2	19.4	19.6	20.1
Variations with the observer position at spacings:											
S = 1.0H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				
1.5H		+ 0.2 / - 0.3					+ 0.3 / - 0.4				
2.0H		+ 0.3 / - 0.5					+ 0.4 / - 0.7				

CIE Pub.117, 1872 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 2.2$)

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:XYJ
Test Date:2019-12-4

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 γ Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.190m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

NAME: VN-TL0020-21	TYPE:LED TRACK LIGHT	WEIGHT:
SPEC.:CRI90 3000K 18D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

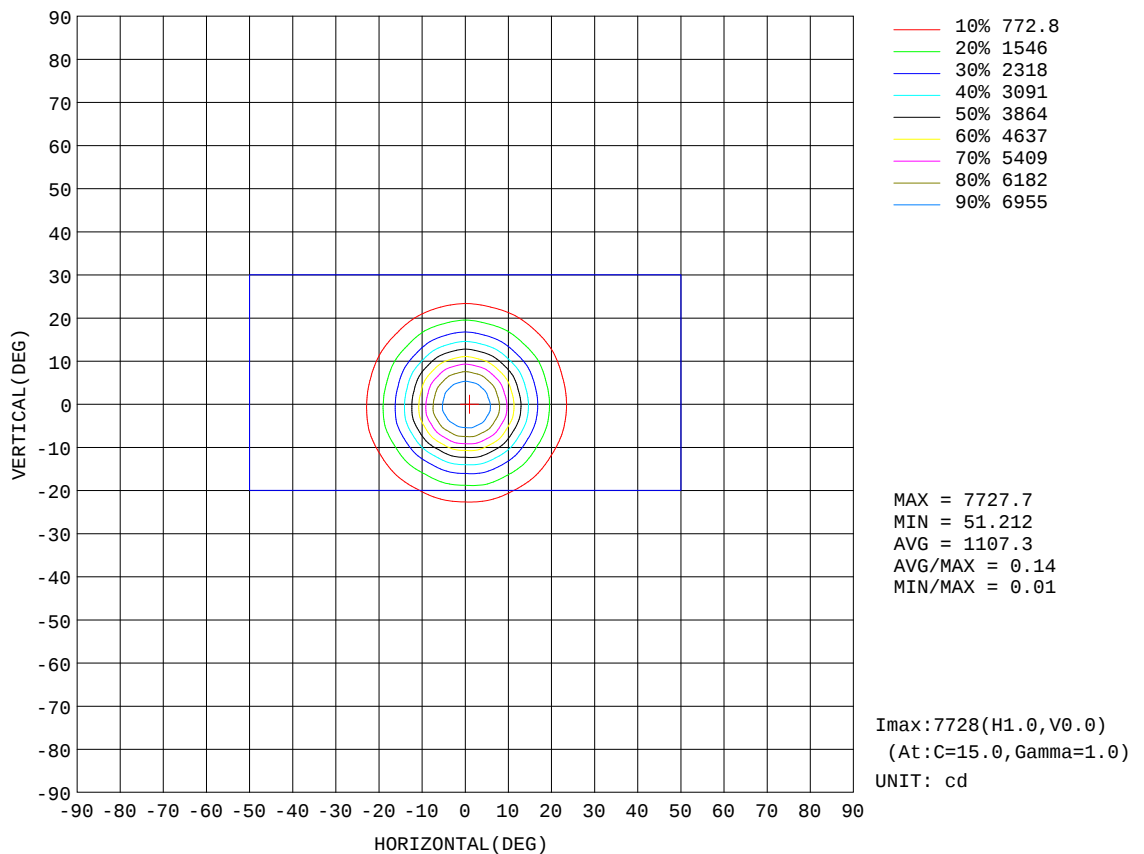
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	80	76	86	80	76	85	80	76	73
0.80	94	88	84	93	88	84	92	87	84	80
1.00	98	93	89	98	92	89	96	92	88	84
1.25	102	97	93	101	96	93	99	95	92	88
1.50	105	100	97	104	100	96	102	98	95	91
2.00	108	104	100	107	103	100	104	101	98	93
2.50	110	106	103	108	105	102	105	102	100	94
3.00	111	108	105	110	106	104	106	104	102	95
4.00	114	111	108	111	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:25.3DEG
 Operators:XYJ
 Test Date:2019-12-4

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
 Humidity:65.0%
 Test Distance:5.190m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

NAME: VN-TL0020-21	TYPE:LED TRACK LIGHT	WEIGHT:
SPEC.:CRI90 3000K 18D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

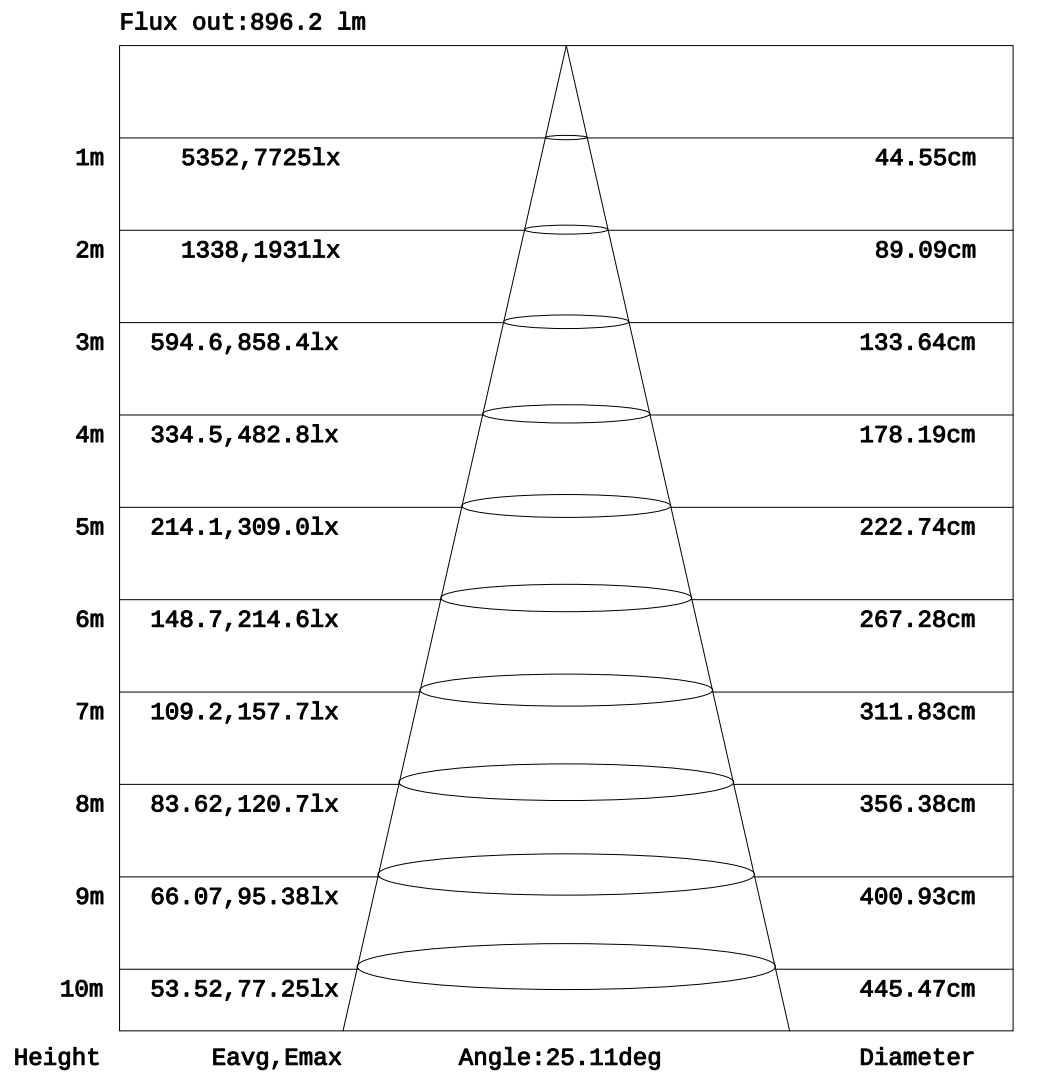


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:XYJ
Test Date:2019-12-4

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.190m [K=1.0000]
Remarks:

AAI Figure

NAME: vN-TL0020-21	TYPE:LED TRACK LIGHT	WEIGHT:
SPEC.:CRI90 3000K 18D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:



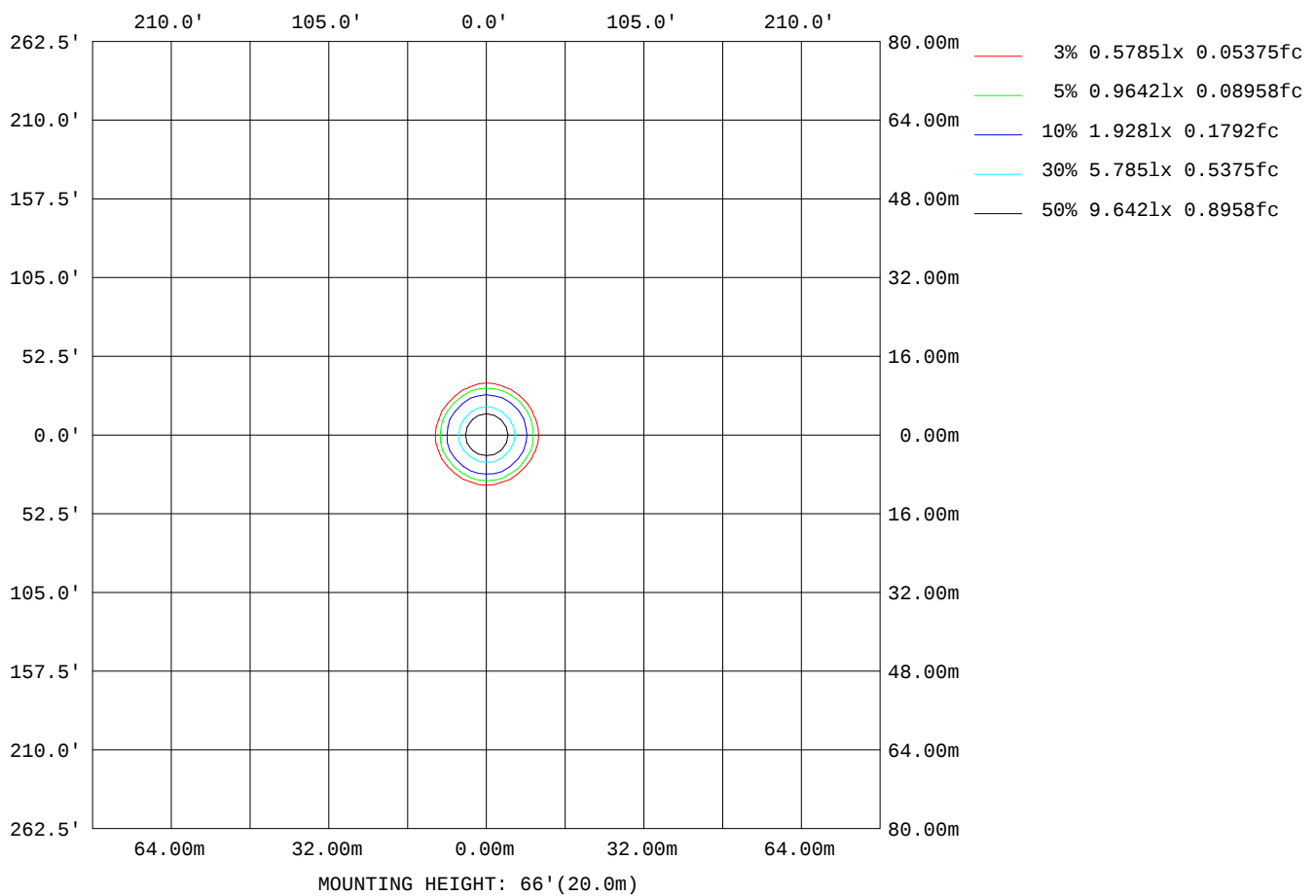
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:XYJ
Test Date:2019-12-4

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.190m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

NAME: VN-TL0020-21	TYPE: LED TRACK LIGHT	WEIGHT:
SPEC.: CRI90 3000K 18D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature: 25.3DEG
Operators: XYJ
Test Date: 2019-12-4

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity: 65.0%
Test Distance: 5.190m [K=1.0000]
Remarks:

LED Avg.L Report

NAME: VN-TL0020-21	TYPE:LED TRACK LIGHT	WEIGHT:
SPEC.:CRI90 3000K 18D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

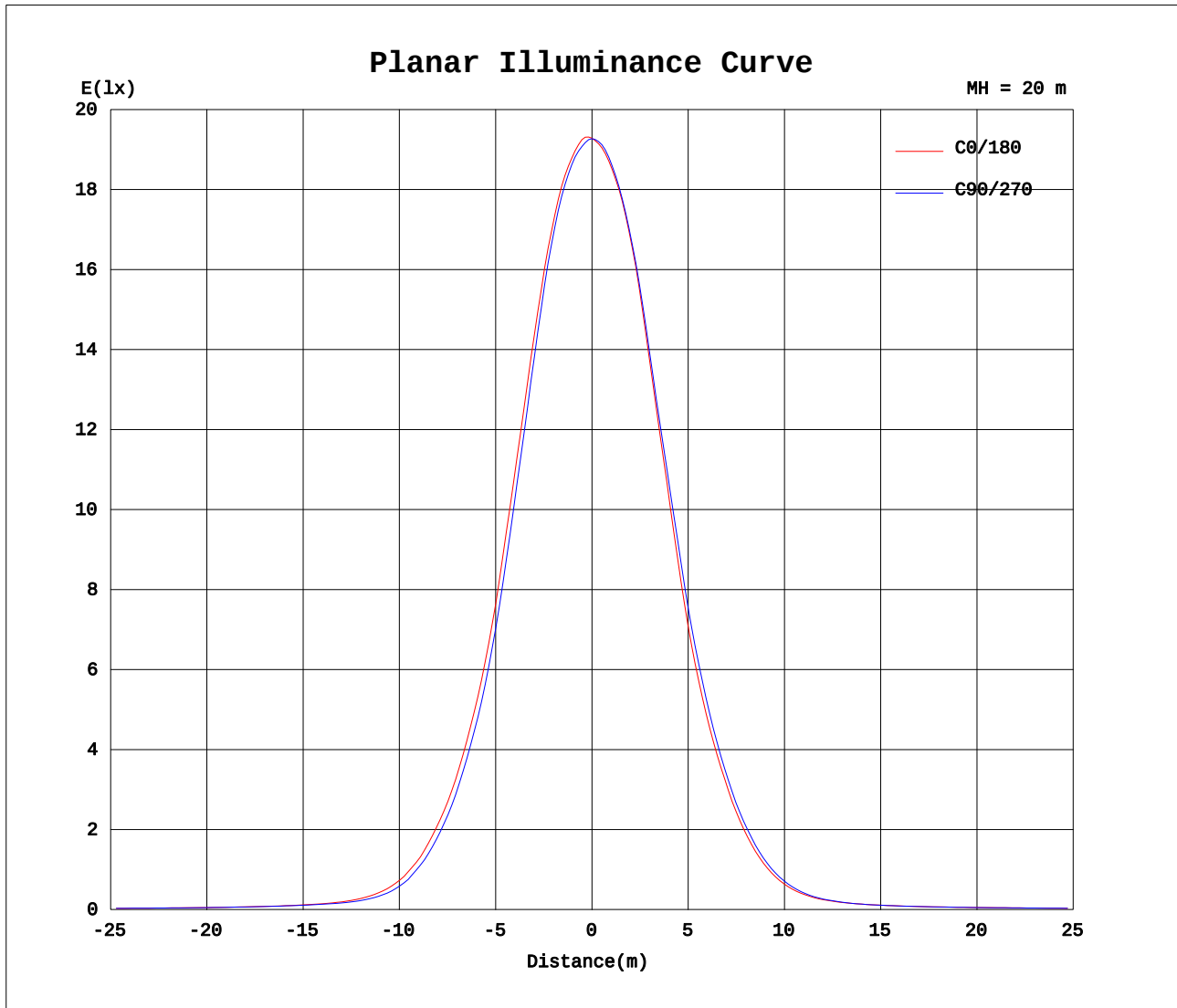
AvgL	cd/m2
L_0~180(65)av	25203
L_0~180(75)av	16590
L_0~180(85)av	4440
L_90~270(65)av	25514
L_90~270(75)av	16723
L_90~270(85)av	4401
L_45(65)av	25323
L_45(75)av	16693
L_45(85)av	4372

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:25.3DEG
Operators:XYJ
Test Date:2019-12-4

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.190m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature: 25.3DEG
 Operators: XYJ
 Test Date: 2019-12-4

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.401
 Humidity: 65.0%
 Test Distance: 5.190m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: VN-TL0020-21	TYPE:LED TRACK LIGHT	WEIGHT:
SPEC.:CRI90 3000K 18D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

Table - -1

UNIT: cd

[illegible]

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature: 25.3DEG
Operators: XYJ
Test Date: 2019-12-4

```

Range: 0 - 90DEG
Interval: 0.5DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.190m [K=1.0000]
Remarks:

```

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: VN-TL0020-21	TYPE: LED TRACK LIGHT	WEIGHT:
SPEC.: CRI90 3000K 18D	DIM.:	SERIAL No.:
MFR.: 1	SUR.:	Shielding Angle:

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UNIT: cd

[illegible]

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature: 25.3DEG
Operators: XYJ
Test Date: 2019-12-4

```

Range: 0 - 90DEG
Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.401
Humidity:65.0%
Test Distance:5.190m [K=1.0000]
Remarks:

```