

Low Voltage Track System Module ML26-RS40-24W-930-30



Light Output Ratio:	100.0%	
Luminaire Power:	24.17 W	
SHR Nominal:	0.50	Calculated using the TM5
SHR Maximum:	0.50	fine grid method.

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: Jason Long  
Test Date: 2019-12-03

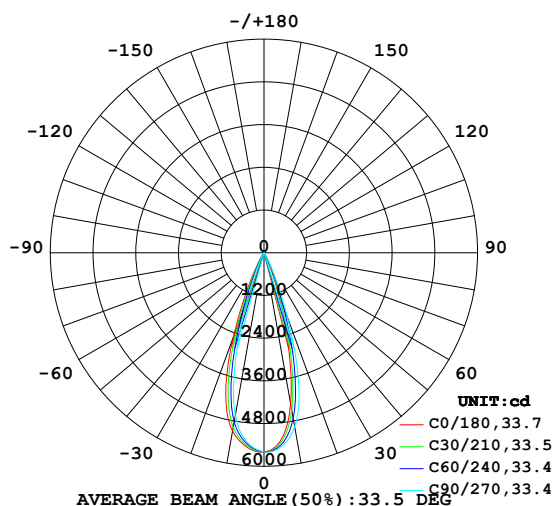
γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity: 56%  
Test Distance: 5.850m [K=1.0000]  
Remarks:

**LUMINAIRE PHOTOMETRIC TEST REPORT**

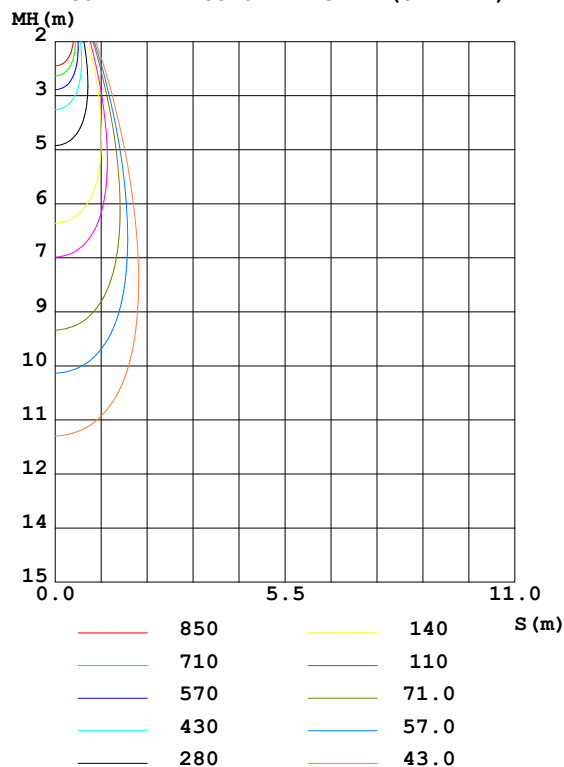
Test:U:48.00V I:0.5036A P:24.17W PF:1.000 Freq:0Hz Lamp Flux:1744.36x1 lm		
NAME: ML26-RS40-24W-930-30	TYPE:Low Voltage Track System Module	
SPEC.:3000K	DIM.: $\phi$ 40mm*H105mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 72.16 lm/W			
MODEL	CITIZEN-3000K	I <sub>max</sub> (cd)	5610	S/MH (C0/180)	0.58
NOMINAL POWER (W)	24	LOR (%)	100.0	S/MH (C90/270)	0.49
RATED VOLTAGE (V)	48	TOTAL FLUX (lm)	1744.4	$\eta$ UP,DN (C0-180)	0.0,52.5
NOMINAL FLUX (lm)	1744.36	CIE CLASS	DIRECT	$\eta$ UP,DN (C180-360)	0.0,47.5
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	48	$\eta$ down (%)	100.0	CIBSE SHR MAX	0.50

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Jason Long  
 Test Date:2019-12-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
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 Remarks:

### ZONAL FLUX DIAGRAM

#### ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	4316	4639	4962	5131	5088	4874	4640	4330	0- 10	495.8	495.8	28.4, 28.4
20	1044	1471	1922	2578	2535	1909	1343	946.9	10- 20	898.5	1394	79.9, 79.9
30	76.03	126.1	154.5	254.0	289.4	166.8	90.75	69.94	20- 30	305.1	1699	97.4, 97.4
40	11.08	15.33	26.27	34.63	37.68	26.54	13.74	8.340	30- 40	37.26	1737	99.6, 99.6
50	1.481	1.822	2.105	2.521	3.022	2.295	1.776	1.485	40- 50	6.083	1743	99.9, 99.9
60	0.4210	0.5194	0.7040	0.8828	0.9128	0.7493	0.4875	0.3928	50- 60	1.098	1744	100, 100
70	0.1446	0.1348	0.1907	0.2025	0.2002	0.1743	0.1290	0.1301	60- 70	0.3321	1744	100, 100
80	0.0712	0.0609	0.0855	0.0705	0.0667	0.0718	0.0416	0.0595	70- 80	0.1091	1744	100, 100
90	0.0668	0.0609	0.0591	0.0573	0.0431	0.0435	0.0438	0.0441	80- 90	0.0606	1744	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		

Conical surface Flux(90deg): 1741.4 lm

%lum = 99.8%

%lamp = 99.8%

Conical surface Flux(120deg): 1743.9 lm

%lum = 100.0%

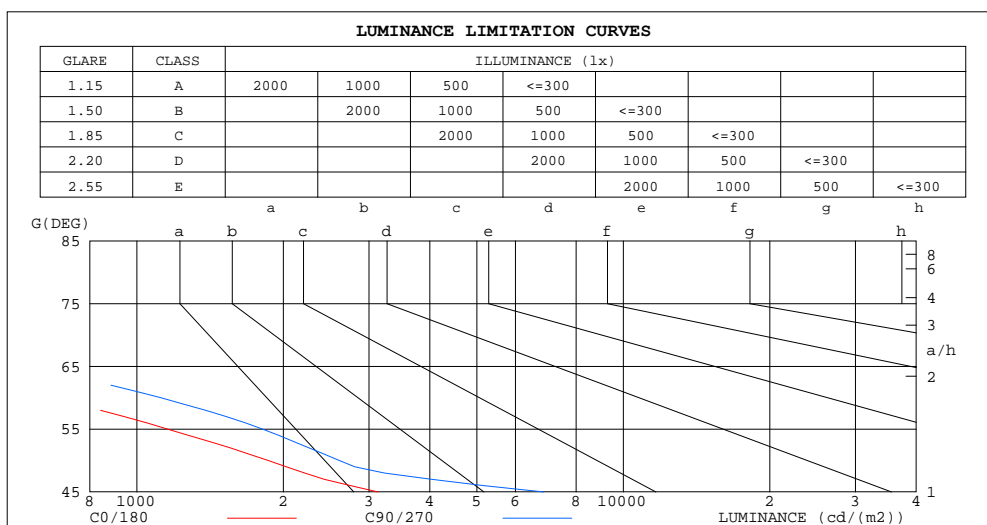
%lamp = 100.0%

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Temperature: 25.3DEG  
Operators: Jason Long  
Test Date: 2019-12-03

$\gamma$  Range: 0 - 90DEG  
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Remarks:

### LUMINANCE LIMITATION CURVES

Test:U:48.00V I:0.5036A P:24.17W PF:1.000 Freq:0Hz Lamp Flux:1744.36x1 lm		
NAME: ML26-RS40-24W-930-30	TYPE:Low Voltage Track System Module	
SPEC.:3000K	DIM.: $\phi 40\text{mm} \times \text{H}105\text{mm}$	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	560	619
80	331	391
75	310	370
70	341	443
65	437	631
60	680	1119
55	1155	1811
50	1860	2603
45	3130	6859

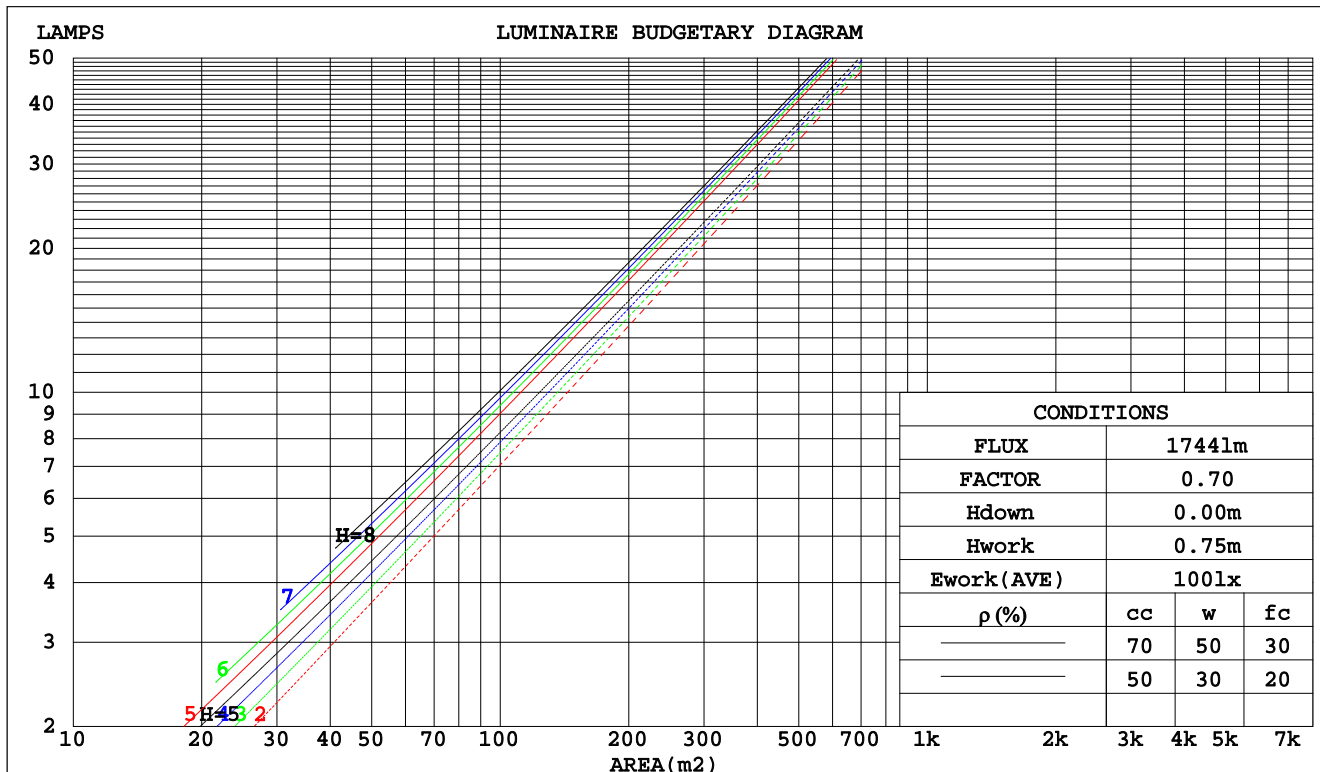
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**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

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pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	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	.00
1.0	1.13	1.11	1.09	1.11	1.09	1.07	1.07	1.05	1.04	1.03	1.02	1.01	.00	.99	.98	.96
2.0	1.07	1.04	1.02	1.06	1.03	1.01	1.03	1.00	.99	.00	.98	.97	.97	.96	.95	.93
3.0	1.03	.99	.96	1.01	.98	.95	.99	.96	.94	.97	.94	.93	.95	.93	.91	.90
4.0	.99	.95	.92	.98	.94	.91	.96	.92	.90	.94	.91	.89	.92	.90	.88	.87
5.0	.95	.91	.88	.94	.90	.87	.92	.89	.86	.91	.88	.86	.89	.87	.85	.84
6.0	.91	.87	.84	.91	.87	.84	.89	.86	.83	.88	.85	.83	.87	.84	.82	.81
7.0	.88	.84	.81	.88	.84	.81	.87	.83	.80	.86	.82	.80	.85	.82	.80	.79
8.0	.85	.81	.78	.85	.81	.78	.84	.80	.78	.83	.80	.78	.82	.79	.77	.76
9.0	.83	.79	.76	.82	.78	.76	.82	.78	.75	.81	.78	.75	.80	.77	.75	.74
10.0	.80	.76	.73	.80	.76	.73	.79	.76	.73	.79	.75	.73	.78	.75	.73	.72



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## WEC AND CCEC

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NAME: ML26-RS40-24W-930-30	TYPE:Low Voltage Track System Module	
SPEC.:3000K	DIM.: $\phi$ 40mm*H105mm	
MFR.: NEKO LIGHTING AG		

$\rho_{cc}$	80%			70%			50%			30%			10%			0	
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
$\rho_{fc}$	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.139	.079	.025	.132	.075	.024	.120	.069	.022	.108	.062	.020	.098	.057	.018		
2.0	.128	.070	.022	.123	.068	.021	.113	.063	.019	.103	.058	.018	.095	.054	.017		
3.0	.120	.064	.019	.115	.062	.019	.107	.058	.018	.099	.054	.017	.092	.051	.016		
4.0	.113	.059	.017	.109	.057	.017	.102	.054	.016	.095	.051	.015	.089	.048	.015		
5.0	.106	.054	.016	.103	.053	.015	.097	.051	.015	.091	.048	.014	.086	.046	.014		
6.0	.101	.051	.014	.098	.050	.014	.093	.048	.014	.088	.046	.013	.083	.044	.013		
7.0	.096	.048	.013	.094	.047	.013	.089	.045	.013	.085	.043	.013	.081	.042	.012		
8.0	.092	.045	.013	.090	.044	.012	.086	.043	.012	.082	.041	.012	.078	.040	.012		
9.0	.088	.043	.012	.086	.042	.012	.083	.041	.012	.079	.040	.011	.076	.039	.011		
10.0	.085	.041	.011	.083	.040	.011	.080	.039	.011	.077	.038	.011	.074	.037	.011		

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	.168	.158	.148	.144	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.150	.133	.118	.129	.114	.102	.088	.079	.071	.051	.046	.042	.016	.015	.014	
3.0	.136	.113	.096	.116	.098	.083	.080	.068	.058	.046	.040	.034	.015	.013	.011	
4.0	.123	.098	.079	.106	.085	.068	.073	.059	.048	.042	.035	.028	.014	.011	.009	
5.0	.113	.086	.066	.097	.074	.057	.067	.052	.040	.039	.030	.024	.012	.010	.008	
6.0	.104	.076	.055	.089	.066	.048	.062	.046	.034	.036	.027	.020	.012	.009	.007	
7.0	.097	.068	.047	.083	.059	.041	.057	.041	.029	.033	.024	.017	.011	.008	.006	
8.0	.090	.061	.041	.078	.053	.035	.054	.037	.025	.031	.022	.015	.010	.007	.005	
9.0	.085	.055	.035	.073	.048	.031	.051	.034	.022	.029	.020	.013	.010	.007	.004	
10.0	.080	.051	.031	.069	.044	.027	.048	.031	.019	.028	.018	.011	.009	.006	.004	

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
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 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:56%  
Test Distance:5.850m [K=1.0000]  
Remarks:

## UGR(Unified Glare Rating) Table

Test:U:48.00V I:0.5036A P:24.17W PF:1.000 Freq:0Hz Lamp Flux:1744.36x1 lm										
NAME: ML26-RS40-24W-930-30					TYPE:Low Voltage Track System Module					
SPEC.:3000K					DIM.: $\phi$ 40mm*H105mm					
MFR.: NEKO LIGHTING AG										
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	4.0	4.6	4.2	4.8	4.9	6.8	7.4	7.0	7.6	7.7
3H	3.8	4.4	4.1	4.6	4.8	6.6	7.2	6.8	7.4	7.6
4H	3.7	4.3	4.0	4.5	4.7	6.5	7.1	6.8	7.3	7.5
6H	3.7	4.2	3.9	4.4	4.7	6.4	7.0	6.7	7.2	7.5
8H	3.6	4.2	3.9	4.4	4.6	6.4	6.9	6.7	7.2	7.4
12H	3.6	4.1	3.9	4.3	4.6	6.4	6.9	6.7	7.1	7.4
4H 2H	3.7	4.3	4.0	4.5	4.7	6.5	7.1	6.8	7.3	7.5
3H	3.6	4.1	3.9	4.4	4.6	6.4	6.9	6.7	7.1	7.4
4H	3.5	4.0	3.8	4.2	4.5	6.3	6.7	6.6	7.0	7.3
6H	3.4	3.8	3.8	4.1	4.5	6.2	6.6	6.5	6.9	7.3
8H	3.3	3.7	3.7	4.1	4.4	6.1	6.5	6.5	6.9	7.2
12H	3.3	3.6	3.7	4.0	4.4	6.1	6.4	6.5	6.8	7.2
8H 4H	3.3	3.7	3.7	4.1	4.4	6.1	6.5	6.5	6.8	7.2
6H	3.2	3.5	3.6	3.9	4.3	6.0	6.3	6.4	6.7	7.1
8H	3.2	3.5	3.6	3.9	4.3	5.9	6.2	6.4	6.6	7.1
12H	3.1	3.4	3.6	3.8	4.3	5.9	6.1	6.4	6.6	7.0
12H 4H	3.3	3.6	3.7	4.0	4.4	6.1	6.4	6.5	6.8	7.2
6H	3.2	3.5	3.6	3.9	4.3	5.9	6.2	6.4	6.6	7.1
8H	3.1	3.4	3.6	3.8	4.3	5.9	6.1	6.3	6.6	7.0
Variations with the observer position at spacings:										
S = 1.0H	+ 3.2 / -11.0					+ 4.4 / -12.8				
1.5H	+ 5.7 / - 8.4					+ 7.0 / -11.1				
2.0H	+ 4.1 / - 4.3					+ 6.9 / - 5.8				

CIE Pub.117, 1744 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 1.9$ )

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### UTILIZATION FACTORS TABLE

Test:U:48.00V I:0.5036A P:24.17W PF:1.000 Freq:0Hz Lamp Flux:1744.36x1 lm		
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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) $k(RI) \times RCR = 5$									
$k = 0.60$	91	86	82	91	86	82	90	85	82	79
0.80	98	93	90	98	93	90	96	92	89	86
1.00	102	97	94	101	97	93	100	96	93	89
1.25	105	101	98	104	100	97	103	99	97	93
1.50	108	104	101	107	103	100	104	101	99	95
2.00	110	106	103	109	105	103	106	103	101	96
2.50	111	108	105	110	107	104	107	104	103	97
3.00	113	110	107	111	108	106	108	106	104	98
4.00	115	112	110	113	111	109	109	107	106	99
5.00	116	114	112	114	112	111	110	109	107	100
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

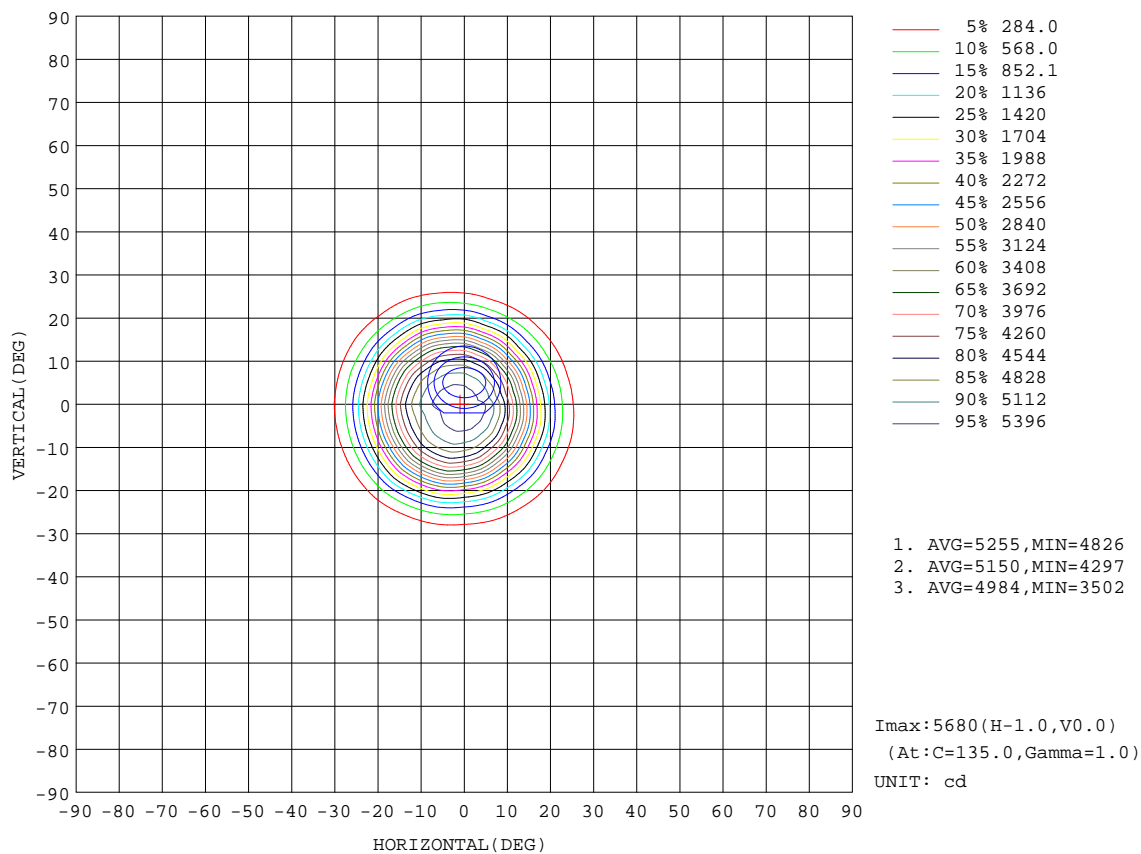
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ISOCANDELA DIAGRAM

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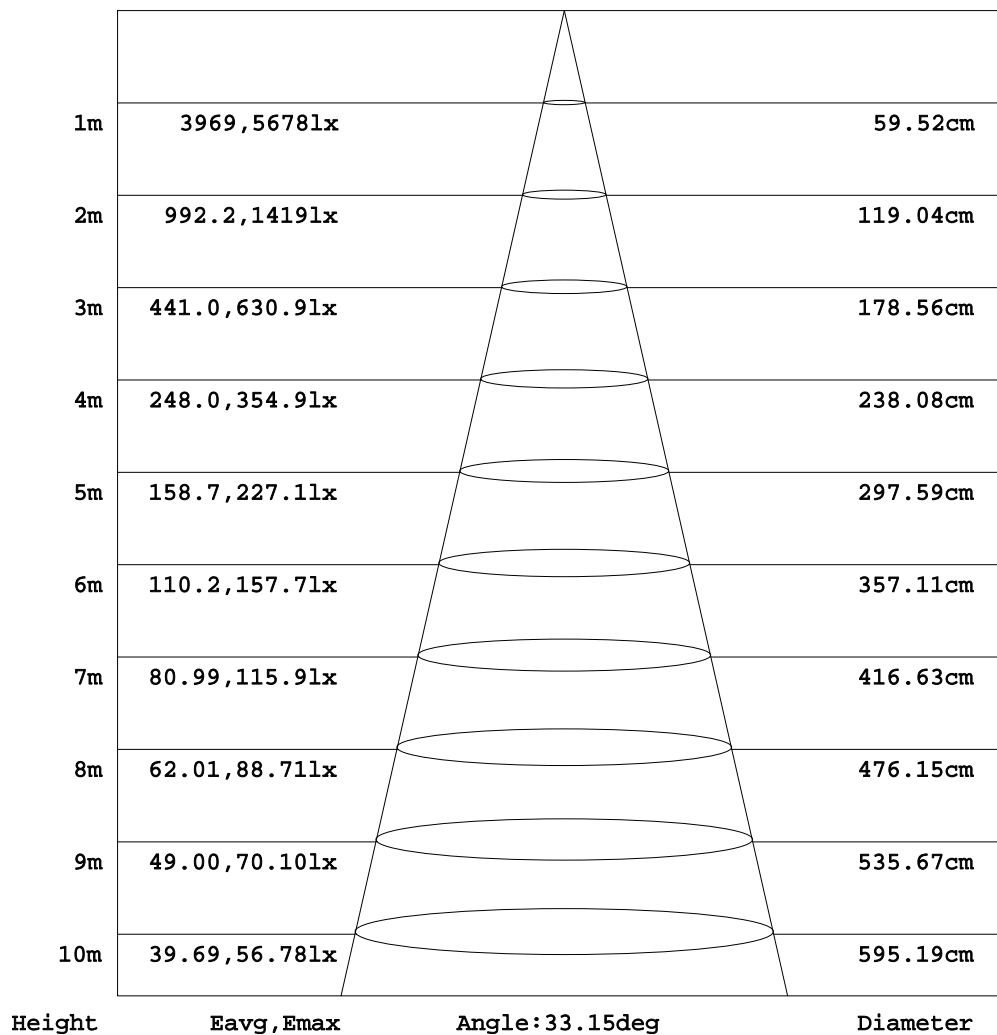
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**AAI Figure**

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Flux out:1165 lm



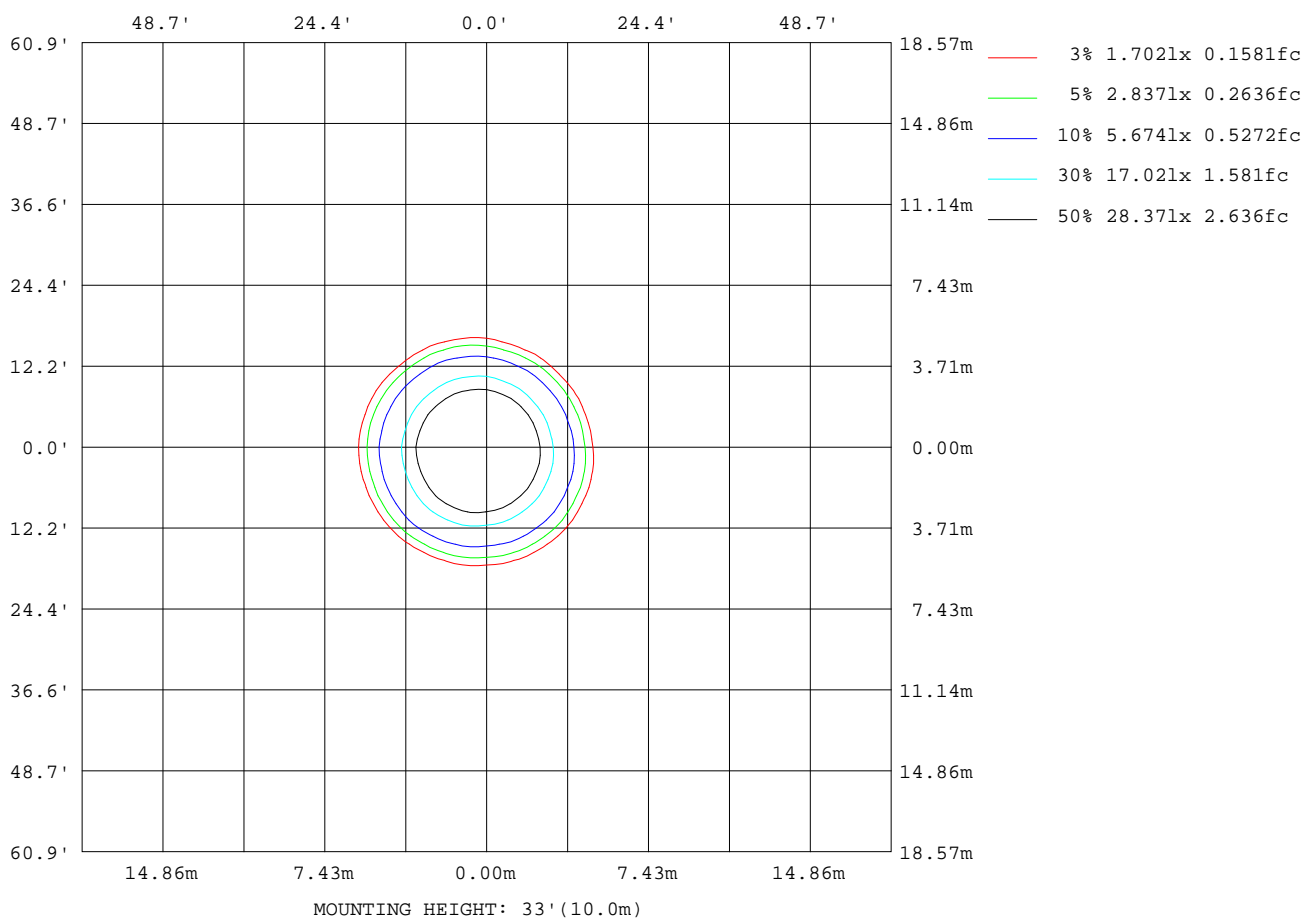
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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ISOLUX DIAGRAM

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Remarks:

### LED Avg.L Report

Test:U:48.00V I:0.5036A P:24.17W PF:1.000 Freq:0Hz Lamp Flux:1744.36x1 lm		
NAME: ML26-RS40-24W-930-30	TYPE:Low Voltage Track System Module	
SPEC.:3000K	DIM.: $\phi$ 40mm*H105mm	
MFR.: NEKO LIGHTING AG		

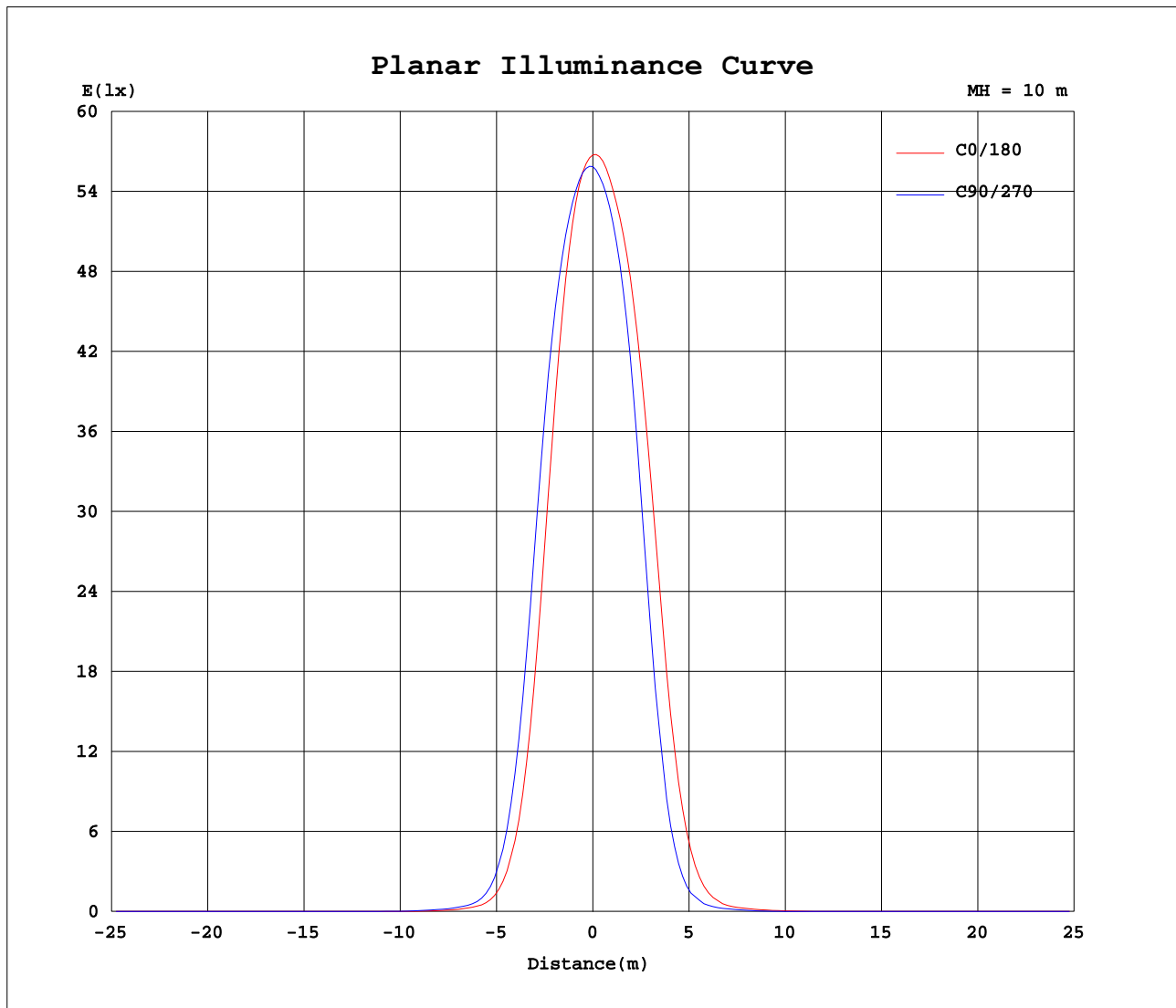
AvgL	cd/m2
L_0~180 (65) av	633
L_0~180 (75) av	308
L_0~180 (85) av	473
L_90~270 (65) av	533
L_90~270 (75) av	293
L_90~270 (85) av	490
L_45 (65) av	573
L_45 (75) av	302
L_45 (85) av	490

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-12-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:56%  
Test Distance:5.850m [K=1.0000]  
Remarks:

### Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: Jason Long  
Test Date: 2019-12-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity: 56%  
Test Distance: 5.850m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:56%
Test Distance:5.850m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:56%
Test Distance:5.850m [K=1.0000]
Remarks:

```