

Low Voltage Track System Module ML26-RS40-24W-930-45



Light Output Ratio:	100.0%	
Luminaire Power:	24.06 W	
SHR Nominal:	0.50	Calculated using the TM5
SHR Maximum:	0.70	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

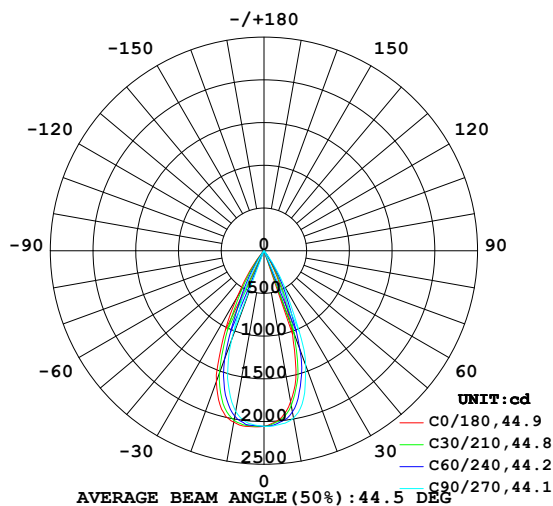
γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity: 56%  
Test Distance: 5.850m [K=1.0000]  
Remarks:

LUMINAIRE PHOTOMETRIC TEST REPORT

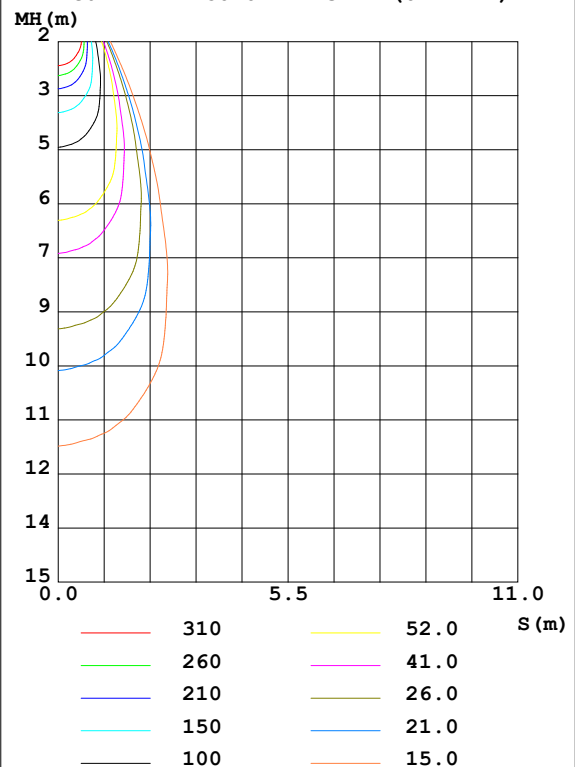
Test:U:48.00V I:0.4956A P:24.06W PF:1.000 Freq:0Hz Lamp Flux:1112.34x1 lm		
NAME: ML26-RS40-24W-930-45	TYPE:Low Voltage Track System Module	
SPEC.:3000K	DIM.: $\phi$ 40mm*H105mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 46.24 lm/W			
MODEL	CITIZEN-3000K	I <sub>max</sub> (cd)	2071	S/MH (C0/180)	0.78
NOMINAL POWER (W)	24	LOR (%)	100.0	S/MH (C90/270)	0.62
RATED VOLTAGE (V)	48	TOTAL FLUX (lm)	1112.3	$\eta$ UP,DN (C0-180)	0.0,53.1
NOMINAL FLUX (lm)	1112.34	CIE CLASS	DIRECT	$\eta$ UP,DN (C180-360)	0.0,46.9
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	48	$\eta$ down (%)	100.0	CIBSE SHR MAX	0.70

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
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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%  
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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	1794	1885	1990	2043	2038	1987	1909	1814	0- 10	190.9	190.9	17.2,17.2
20	919.7	1131	1425	1611	1631	1425	1108	880.4	10- 20	460.5	651.5	58.6,58.6
30	169.2	294.8	465.5	631.9	639.1	415.2	212.1	138.9	20- 30	349.2	1001	90,90
40	14.07	20.53	36.79	79.86	75.17	29.63	14.75	12.43	30- 40	95.99	1097	98.6,98.6
50	4.339	5.586	7.534	9.498	8.853	6.398	4.607	3.954	40- 50	11.10	1108	99.6,99.6
60	1.206	1.449	1.984	2.814	2.651	1.754	1.164	1.051	50- 60	3.226	1111	99.9,99.9
70	0.3598	0.3748	0.5123	0.7272	0.6720	0.4936	0.3319	0.3073	60- 70	0.9552	1112	100,100
80	0.0982	0.0915	0.1511	0.1949	0.1761	0.1464	0.0808	0.0812	70- 80	0.2796	1112	100,100
90	0.0545	0.0524	0.0503	0.0592	0.0501	0.0349	0.0241	0.0307	80- 90	0.0786	1112	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): 1104.3 lm

%lum = 99.3%

%lamp = 99.3%

Conical surface Flux(120deg): 1111 lm

%lum = 99.9%

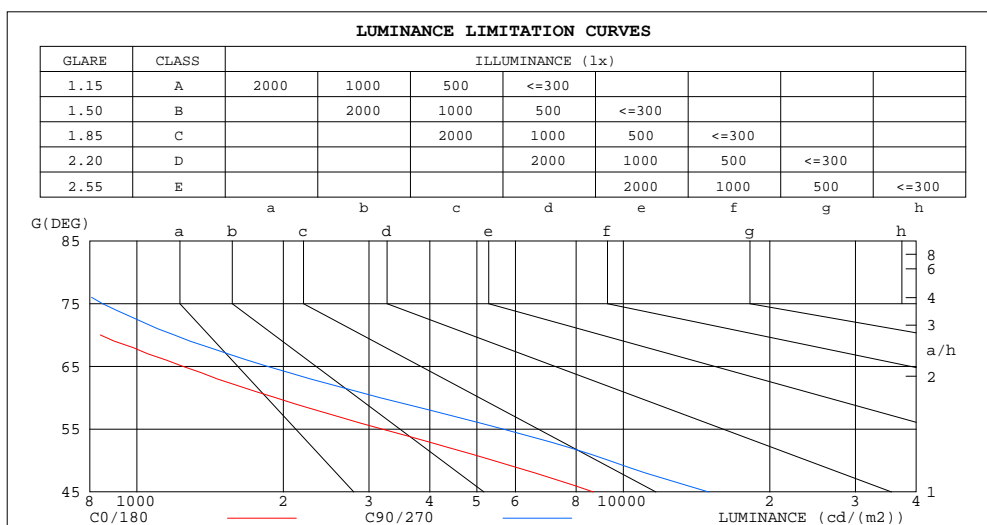
%lamp = 99.9%

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Remarks:

### LUMINANCE LIMITATION CURVES

Test:U:48.00V I:0.4956A P:24.06W PF:1.000 Freq:0Hz Lamp Flux:1112.34x1 lm		
NAME: ML26-RS40-24W-930-45	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	780
80	452	693
75	600	849
70	841	1193
65	1242	1853
60	1928	3160
55	3189	5657
50	5395	9332
45	8672	14970

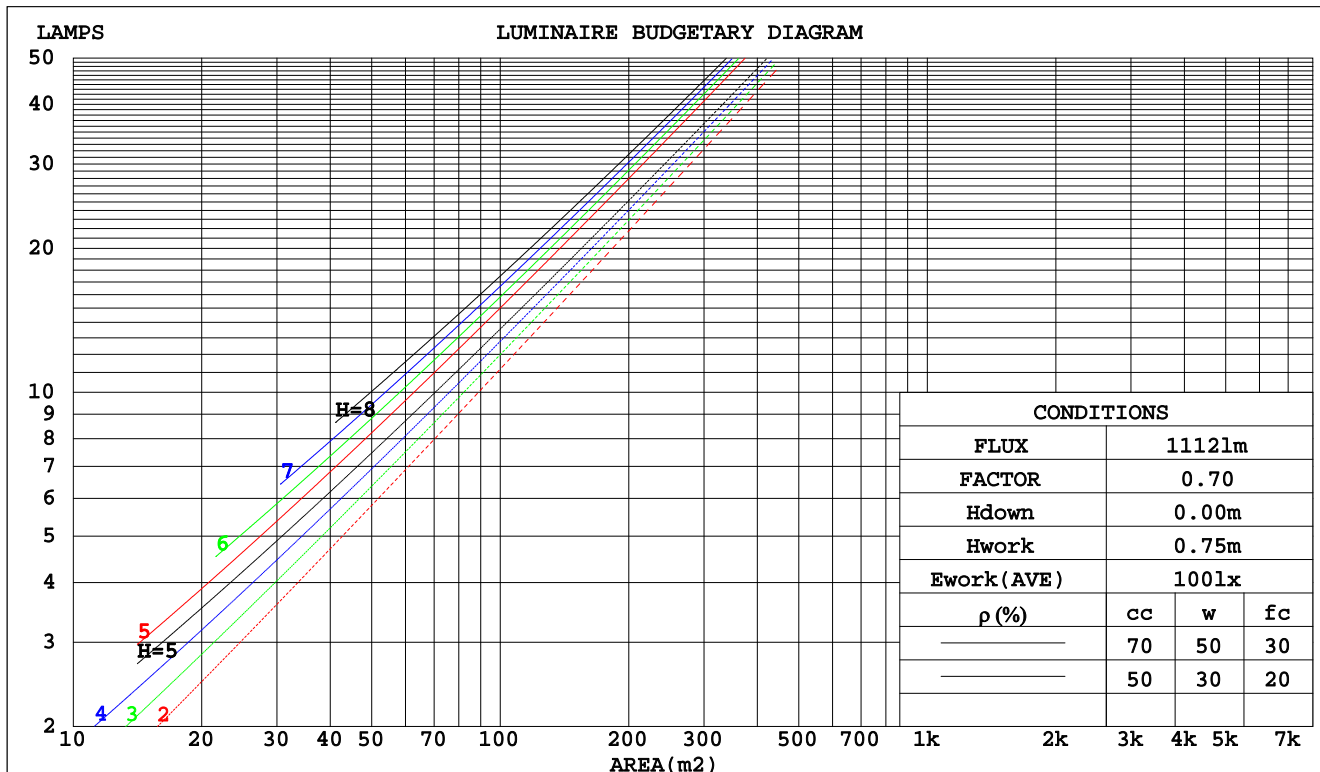
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CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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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	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	.00	.99	.98	.97	.95
2.0	1.06	1.02	.99	1.04	1.01	.98	1.01	.98	.96	.98	.96	.94	.95	.93	.92	.90
3.0	.00	.96	.92	.98	.95	.91	.96	.93	.90	.94	.91	.89	.91	.89	.87	.86
4.0	.95	.90	.86	.94	.89	.86	.92	.88	.85	.90	.87	.84	.88	.85	.83	.82
5.0	.90	.85	.81	.89	.85	.81	.87	.83	.80	.86	.82	.80	.84	.81	.79	.78
6.0	.86	.81	.77	.85	.80	.77	.84	.79	.76	.82	.79	.76	.81	.78	.75	.74
7.0	.82	.77	.73	.81	.76	.73	.80	.76	.73	.79	.75	.72	.78	.75	.72	.71
8.0	.78	.73	.70	.78	.73	.70	.77	.72	.69	.76	.72	.69	.75	.71	.69	.68
9.0	.75	.70	.67	.74	.70	.66	.74	.69	.66	.73	.69	.66	.72	.68	.66	.65
10.0	.72	.67	.64	.71	.67	.64	.71	.66	.63	.70	.66	.63	.69	.66	.63	.62



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## WEC AND CCEC

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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	.156	.089	.028	.149	.085	.027	.137	.078	.025	.125	.072	.023	.115	.066	.021		
2.0	.147	.081	.025	.141	.078	.024	.131	.073	.023	.121	.068	.021	.113	.064	.020		
3.0	.139	.074	.022	.134	.072	.022	.125	.068	.021	.117	.064	.020	.110	.061	.019		
4.0	.132	.068	.020	.128	.067	.020	.120	.064	.019	.113	.061	.018	.107	.058	.018		
5.0	.125	.064	.018	.122	.062	.018	.115	.060	.018	.109	.058	.017	.104	.055	.017		
6.0	.119	.060	.017	.116	.059	.017	.111	.057	.017	.105	.055	.016	.101	.053	.016		
7.0	.114	.056	.016	.112	.056	.016	.107	.054	.016	.102	.052	.015	.098	.051	.015		
8.0	.109	.053	.015	.107	.053	.015	.103	.051	.015	.099	.050	.014	.095	.049	.014		
9.0	.105	.051	.014	.103	.050	.014	.099	.049	.014	.095	.048	.014	.092	.047	.013		
10.0	.101	.048	.013	.099	.048	.013	.096	.047	.013	.092	.046	.013	.089	.045	.013		

$\rho_{cc}$	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	.170	.157	.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	.139	.113	.093	.119	.098	.081	.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	.102	.075	.055	.070	.052	.039	.041	.031	.023	.013	.010	.008		
6.0	.110	.077	.053	.095	.066	.046	.065	.047	.032	.038	.027	.019	.012	.009	.006		
7.0	.103	.069	.045	.089	.060	.039	.061	.042	.028	.036	.025	.016	.012	.008	.005		
8.0	.097	.062	.038	.084	.054	.034	.058	.038	.024	.034	.022	.014	.011	.007	.005		
9.0	.092	.057	.033	.079	.050	.029	.055	.035	.021	.032	.021	.012	.010	.007	.004		
10.0	.088	.053	.029	.076	.046	.025	.052	.032	.018	.031	.019	.011	.010	.006	.004		

C Range: 0 - 360DEG  
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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:0.4956A P:24.06W PF:1.000 Freq:0Hz Lamp Flux:1112.34x1 lm										
NAME: ML26-RS40-24W-930-45					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	11.2	12.0	11.5	12.2	12.4	17.7	18.5	17.9	18.6	18.8
3H	11.1	11.8	11.4	12.0	12.2	17.5	18.3	17.8	18.5	18.7
4H	11.0	11.7	11.3	11.9	12.1	17.5	18.1	17.7	18.4	18.6
6H	10.9	11.6	11.2	11.8	12.1	17.4	18.0	17.7	18.3	18.5
8H	10.9	11.5	11.2	11.8	12.0	17.3	18.0	17.6	18.2	18.5
12H	10.9	11.5	11.2	11.7	12.0	17.3	17.9	17.6	18.1	18.4
4H 2H	11.0	11.7	11.3	11.9	12.2	17.5	18.1	17.7	18.4	18.6
3H	10.9	11.5	11.2	11.7	12.0	17.3	17.9	17.6	18.1	18.4
4H	10.8	11.3	11.1	11.6	11.9	17.2	17.7	17.5	18.0	18.3
6H	10.7	11.2	11.1	11.5	11.8	17.1	17.6	17.5	17.9	18.2
8H	10.6	11.1	11.0	11.4	11.8	17.0	17.5	17.4	17.8	18.2
12H	10.6	11.0	11.0	11.4	11.8	17.0	17.4	17.4	17.8	18.2
8H 4H	10.6	11.1	11.0	11.4	11.8	17.0	17.5	17.4	17.8	18.2
6H	10.5	10.9	11.0	11.3	11.7	16.9	17.3	17.4	17.7	18.1
8H	10.5	10.8	10.9	11.2	11.7	16.9	17.2	17.3	17.6	18.1
12H	10.4	10.7	10.9	11.1	11.6	16.8	17.1	17.3	17.5	18.0
12H 4H	10.6	11.0	11.0	11.4	11.8	17.0	17.4	17.4	17.8	18.2
6H	10.5	10.8	10.9	11.2	11.7	16.9	17.2	17.3	17.6	18.1
8H	10.4	10.7	10.9	11.1	11.6	16.8	17.1	17.3	17.5	18.0
Variations with the observer position at spacings:										
S = 1.0H	+ 2.7 / - 6.9					+ 5.6 / -10.6				
1.5H	+ 4.3 / - 4.8					+ 8.0 / - 9.0				
2.0H	+ 4.3 / - 5.2					+ 5.3 / - 6.6				

CIE Pub.117, 1112 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 0.4$ )

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### UTILIZATION FACTORS TABLE

Test:U:48.00V I:0.4956A P:24.06W PF:1.000 Freq:0Hz Lamp Flux:1112.34x1 lm		
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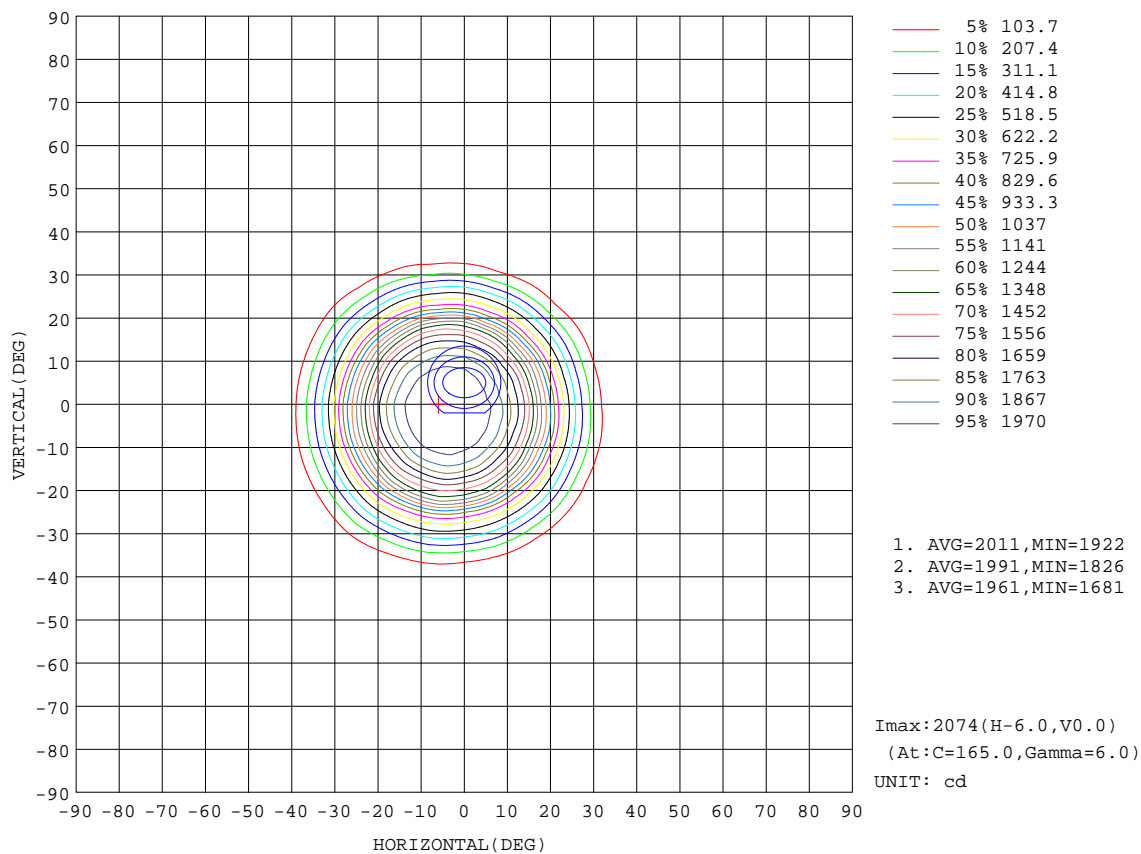
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	85	82	90	85	81	89	84	81	78
0.80	98	92	89	97	92	89	96	92	89	85
1.00	102	96	93	101	96	93	99	96	92	89
1.25	105	100	97	104	100	97	102	99	96	92
1.50	108	103	100	106	103	100	104	101	99	95
2.00	110	106	103	108	105	102	106	103	101	96
2.50	111	108	105	110	107	104	107	104	102	97
3.00	113	110	107	111	108	106	108	105	104	98
4.00	114	112	110	112	110	109	109	107	106	99
5.00	116	114	112	114	112	110	110	108	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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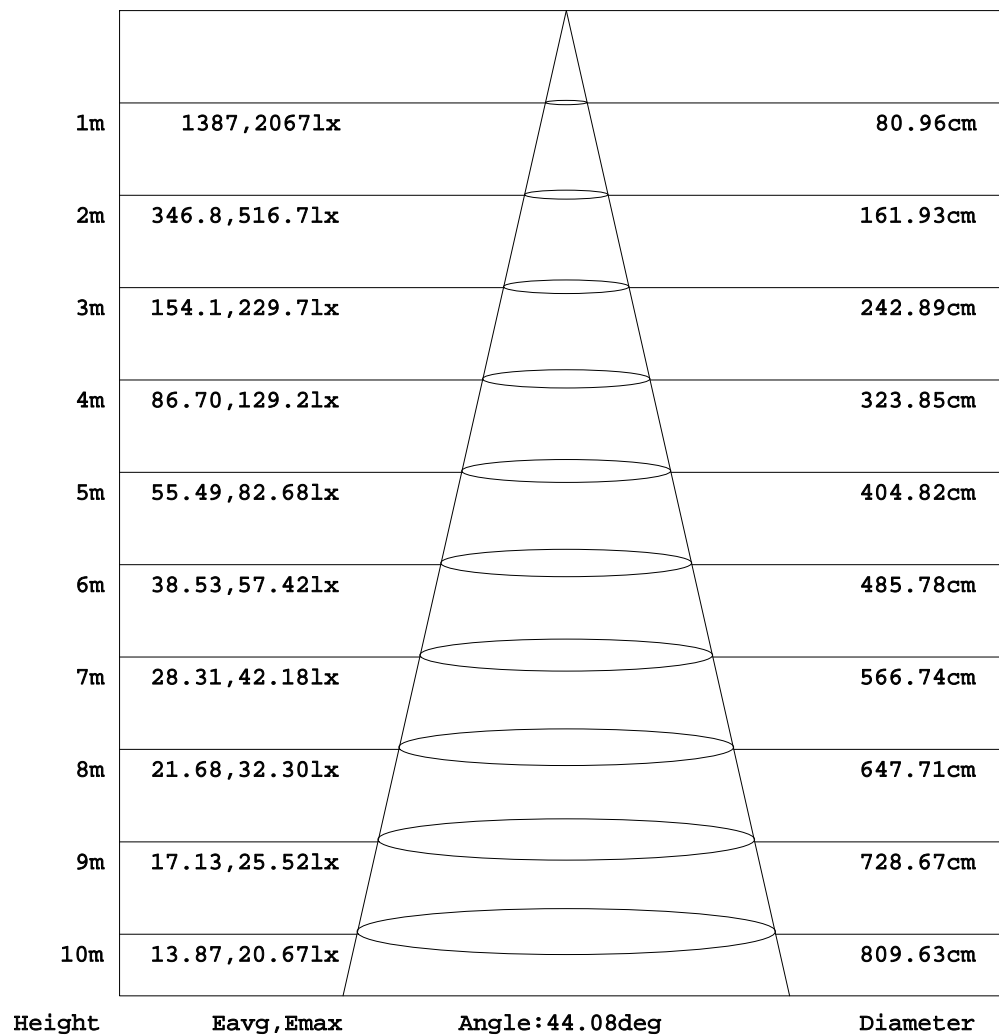
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**AAI Figure**

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Flux out:785.2 lm



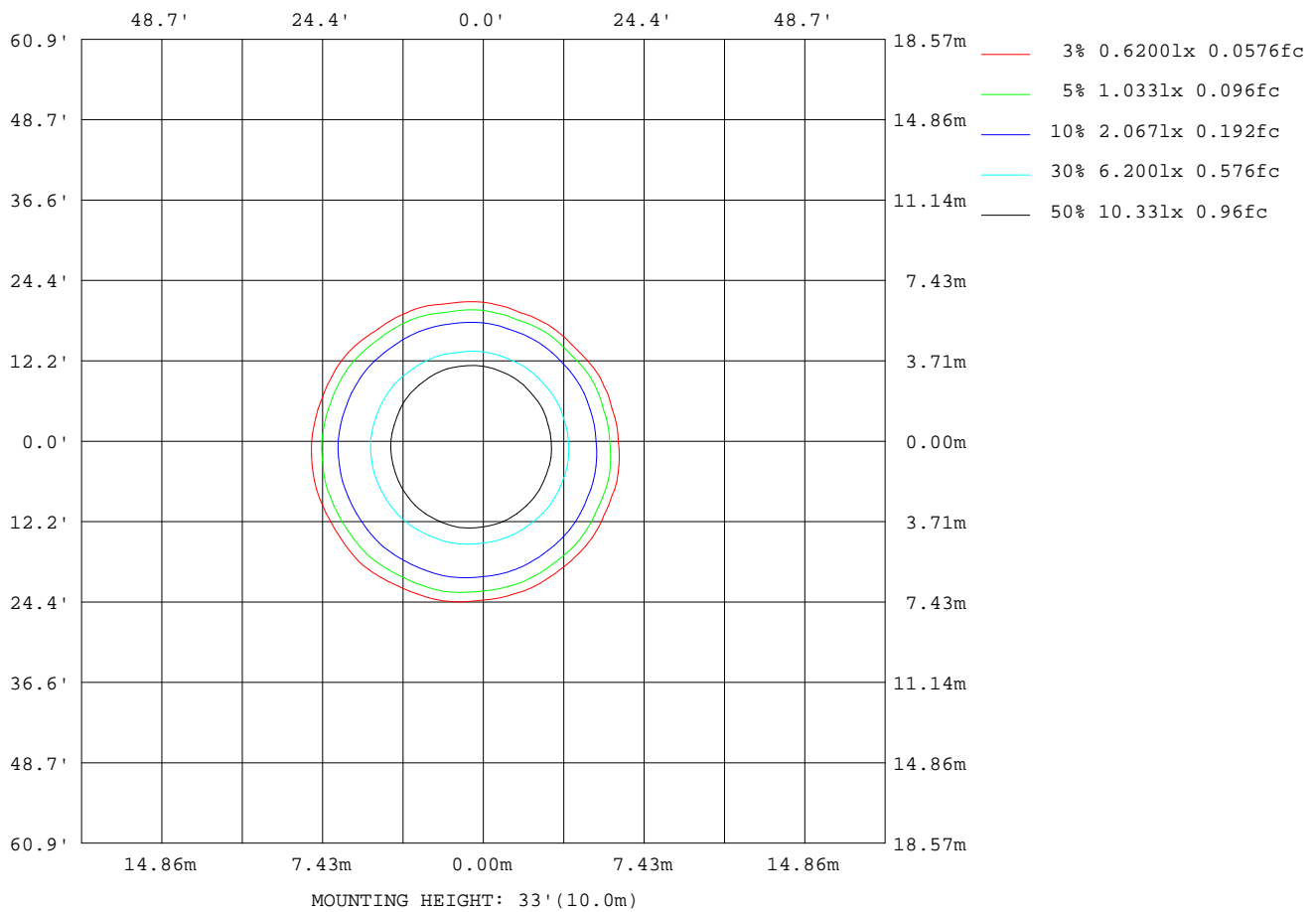
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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ISOLUX DIAGRAM

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Remarks:

### LED Avg.L Report

Test:U:48.00V I:0.4956A P:24.06W PF:1.000 Freq:0Hz Lamp Flux:1112.34x1 lm		
NAME: ML26-RS40-24W-930-45	TYPE:Low Voltage Track System Module	
SPEC.:3000K	DIM.: $\phi$ 40mm*H105mm	
MFR.: NEKO LIGHTING AG		

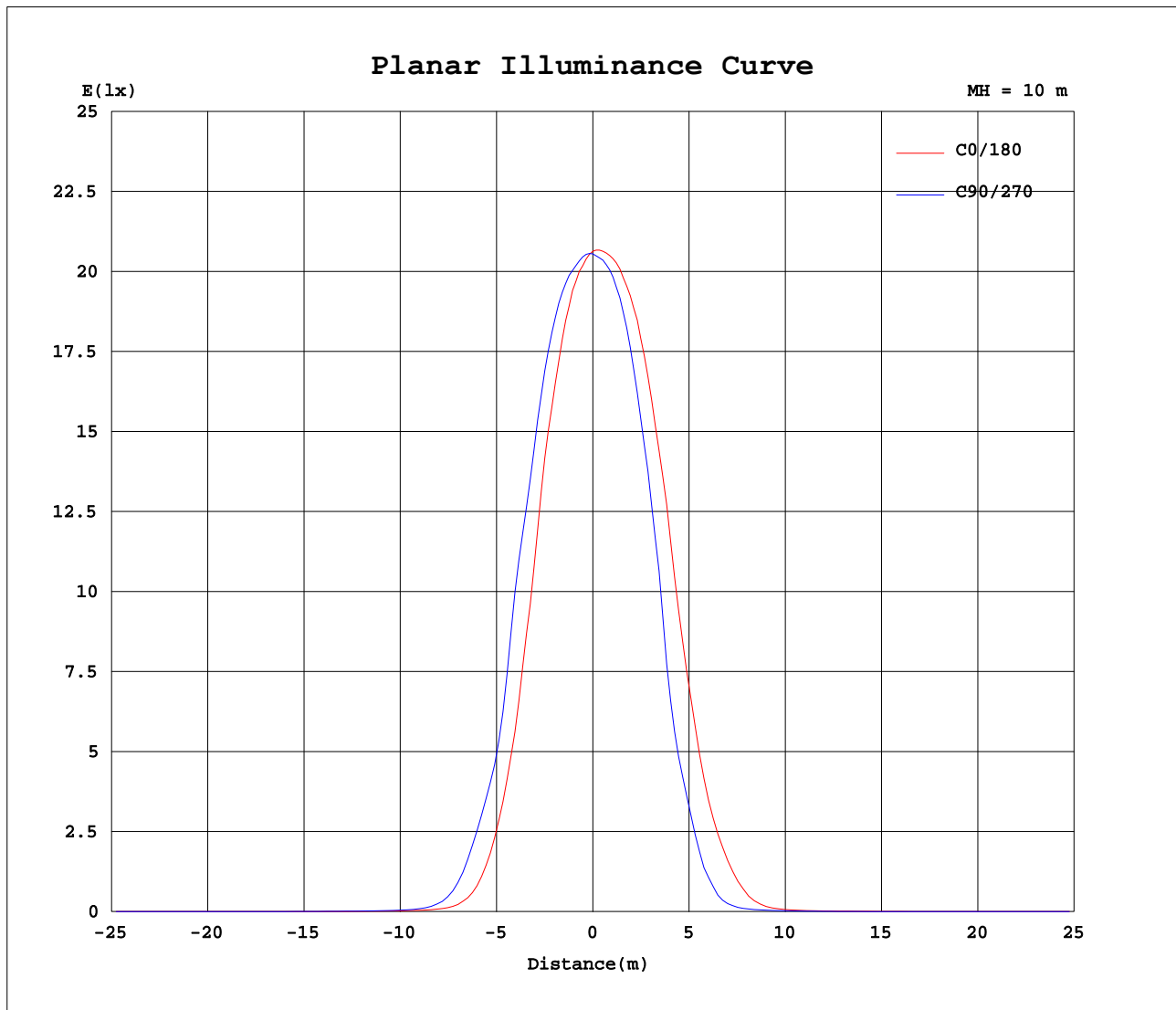
AvgL	cd/m2
L_0~180 (65) av	1866
L_0~180 (75) av	824
L_0~180 (85) av	646
L_90~270 (65) av	1507
L_90~270 (75) av	686
L_90~270 (85) av	530
L_45 (65) av	1703
L_45 (75) av	772
L_45 (85) av	609

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:

```