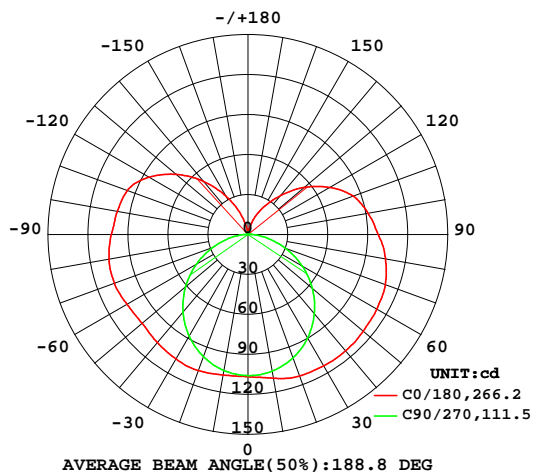


## LUMINAIRE PHOTOMETRIC TEST REPORT

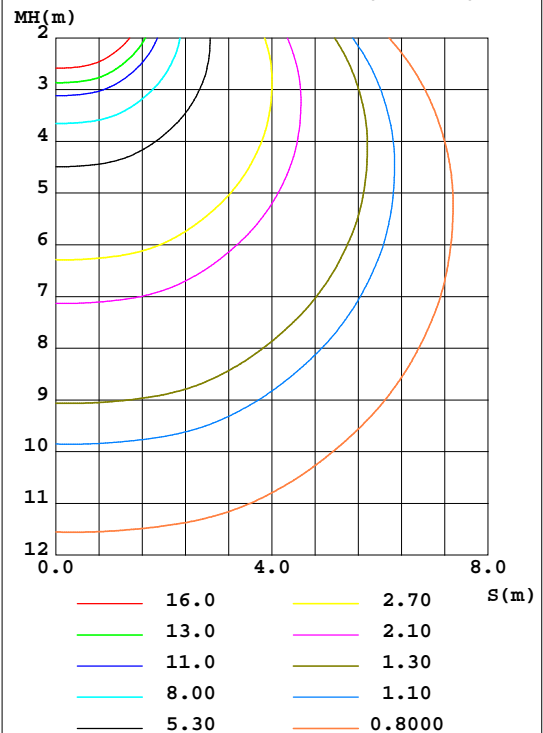
Test:U:24.00V I:0.6161A P:14.79W PF:1.000 Freq:0Hz Lamp Flux:738.11lx1 lm		
NAME: NNR25-ESD	TYPE:	WEIGHT:
SPEC.:NNR25-9LW24CSN050CC0100-ESD	DIM.: 1000*25mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*25mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 49.92 lm/W			
MODEL	NNR25-ESD	I <sub>max</sub> (cd)	114.1	S/MH(C0/180)	1.63
NOMINAL POWER(W)	14.4	LOR(%)	100.0	S/MH(C90/270)	1.24
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	738.11	h UP,DN(C0-180)	15.3,34.6
NOMINAL FLUX(lm)	738.111	CIE CLASS	SEMI-D.	h UP,DN(C180-360)	16.3,33.8
LAMPS INSIDE	1	h up(%)	31.6	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	24	h down(%)	68.4	CIBSE SHR MAX	1.55

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:JYH  
 Test Date:2020-09-02

g Range: 0 - 180DEG  
 Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:65.0%  
 Test Distance:10.950m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

### ZONAL FLUX DIAGRAM:

g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum,lamp
10	109.5	107.1	104.2	105.1	107.1	105.3	103.7	106.2	0- 10	10.13	10.13	1.37,1.37
20	113.0	107.1	98.71	103.6	108.8	103.4	97.64	106.0	10- 20	29.90	40.03	5.42,5.42
30	113.8	104.4	89.60	99.90	108.0	99.43	88.27	103.0	20- 30	47.64	87.67	11.9,11.9
40	114.0	99.11	77.58	93.08	105.9	92.45	75.95	97.37	30- 40	61.32	149.0	20.2,20.2
50	112.9	92.56	63.10	84.79	103.8	83.99	61.20	90.76	40- 50	70.12	219.1	29.7,29.7
60	111.8	84.92	46.77	78.07	104.8	77.17	44.76	82.96	50- 60	74.16	293.3	39.7,39.7
70	109.7	77.25	29.48	72.38	106.8	71.60	27.64	75.37	60- 70	74.52	367.8	49.8,49.8
80	104.8	70.15	13.45	68.28	105.9	67.66	12.11	68.41	70- 80	71.38	439.2	59.5,59.5
90	97.85	63.41	2.827	65.00	102.7	64.55	1.937	61.00	80- 90	65.99	505.2	68.4,68.4
100	91.62	57.97	0.8594	63.61	99.60	63.34	0.8234	52.02	90-100	60.60	565.8	76.7,76.7
110	84.28	50.54	0.6479	60.94	96.43	60.81	0.7081	47.78	100-110	55.44	621.2	84.2,84.2
120	70.86	37.43	0.8616	48.73	85.98	50.58	0.8952	36.27	110-120	45.94	667.1	90.4,90.4
130	55.10	24.01	1.069	38.02	70.29	38.15	1.089	24.70	120-130	32.62	699.8	94.8,94.8
140	38.26	15.19	1.169	26.80	52.23	27.01	1.202	15.59	130-140	20.86	720.6	97.6,97.6
150	23.92	8.734	1.296	16.04	33.47	16.43	1.309	9.292	140-150	11.36	732.0	99.2,99.2
160	11.84	4.011	1.496	6.403	16.50	6.521	1.563	4.610	150-160	4.788	736.8	99.8,99.8
170	1.825	1.677	1.710	2.129	2.418	2.044	1.770	1.757	160-170	1.169	737.9	100,100
180	1.623	1.910	1.930	2.004	1.576	1.904	1.930	2.004	170-180	0.1731	738.1	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2020-09-02

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.950m [K=1.0000]  
Remarks:

```

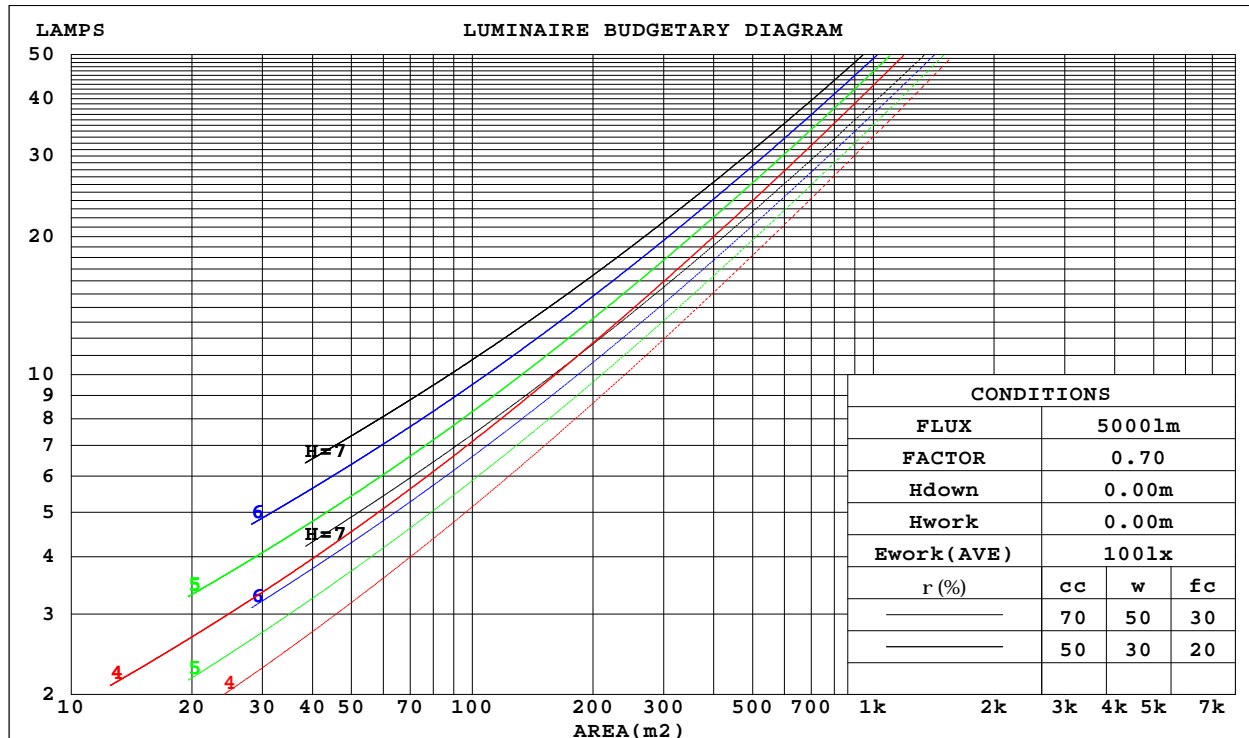
Range: 0 - 180DEG
Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

```

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.00V I:0.6161A P:14.79W PF:1.000 Freq:0Hz Lamp Flux:738.11lx1 lm		
NAME: NNR25-ESD	TYPE:	WEIGHT:
SPEC.:NNR25-9LW24CSN050CC0100-ESD	DIM.: 1000*25mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*25mm	Shielding Angle:

r <sub>cc</sub>	80%			70%			50%			30%			10%			0
r <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r <sub>fc</sub>	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2020-09-02

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.950m [K=1.0000]  
Remarks:

## WEC AND CCEC

Test:U:24.00V I:0.6161A P:14.79W PF:1.000 Freq:0Hz Lamp Flux:738.11lx1 lm		
NAME: NNR25-ESD	TYPE:	WEIGHT:
SPEC.:NNR25-9LW24CSN050CC0100-ESD	DIM.: 1000*25mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*25mm	Shielding Angle:

r <sub>cc</sub>	80%			70%			50%			30%			10%			0
r <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r <sub>fc</sub>	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Wall Exitance Coefficients(WEC)												
0.0																
1.0	.403	.229	.073	.386	.220	.070	.355	.203	.065	.326	.188	.060	.299	.173	.056	
2.0	.341	.187	.057	.326	.180	.055	.297	.165	.051	.271	.152	.048	.246	.139	.044	
3.0	.300	.160	.048	.286	.153	.046	.260	.141	.043	.236	.129	.040	.213	.118	.037	
4.0	.268	.139	.041	.255	.134	.039	.231	.123	.037	.209	.112	.034	.189	.103	.031	
5.0	.243	.124	.036	.231	.119	.035	.209	.109	.032	.189	.100	.030	.170	.091	.027	
6.0	.221	.111	.032	.211	.107	.031	.191	.098	.028	.172	.089	.026	.155	.081	.024	
7.0	.204	.101	.029	.194	.097	.028	.176	.089	.026	.158	.081	.024	.142	.074	.022	
8.0	.189	.092	.026	.180	.088	.025	.163	.081	.023	.147	.074	.021	.131	.067	.020	
9.0	.175	.085	.024	.167	.081	.023	.151	.075	.021	.136	.068	.020	.122	.062	.018	
10.0	.164	.079	.022	.156	.076	.021	.142	.069	.020	.128	.063	.018	.115	.058	.017	

r <sub>cc</sub>	80%			70%			50%			30%			10%			0
r <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r <sub>fc</sub>	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Ceiling Cavity Exitance Coefficients(CCEC)												
0.0	.431	.431	.431	.368	.368	.368	.251	.251	.251	.144	.144	.144	.046	.046	.046	
1.0	.429	.398	.369	.367	.341	.318	.251	.235	.220	.145	.136	.128	.046	.044	.041	
2.0	.423	.376	.336	.362	.323	.291	.248	.224	.203	.143	.130	.119	.046	.042	.039	
3.0	.416	.360	.315	.356	.310	.274	.245	.216	.192	.141	.126	.113	.045	.041	.037	
4.0	.408	.348	.302	.350	.301	.262	.241	.209	.185	.139	.123	.109	.045	.040	.036	
5.0	.400	.338	.293	.344	.293	.255	.237	.205	.180	.137	.120	.107	.044	.039	.035	
6.0	.393	.331	.286	.338	.286	.249	.233	.201	.176	.135	.118	.105	.044	.039	.035	
7.0	.386	.324	.281	.332	.281	.245	.229	.197	.174	.133	.116	.103	.043	.038	.034	
8.0	.379	.319	.277	.327	.277	.242	.226	.194	.172	.131	.115	.102	.043	.038	.034	
9.0	.373	.314	.275	.321	.273	.240	.223	.192	.170	.130	.113	.101	.042	.037	.034	
10.0	.367	.310	.272	.317	.269	.238	.220	.190	.169	.128	.112	.101	.042	.037	.033	

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2020-09-02

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.950m [K=1.0000]  
Remarks:

## UGR(Unified Glare Rating) Table

Test:U:24.00V I:0.6161A P:14.79W PF:1.000 Freq:0Hz Lamp Flux:738.11lx1 lm											
NAME: NNR25-ESD						TYPE:		WEIGHT:			
SPEC.:NNR25-9LW24CSN050CC0100-ESD						DIM.: 1000*25mm		SERIAL No.:			
MFR.: COLORS						SUR.:1000*25mm		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	19.7	20.9	20.3	21.6	22.4	16.7	17.9	17.3	18.6	19.4	
	3H	22.9	24.0	23.6	24.7	25.6	18.3	19.5	19.0	20.2	21.0
	4H	24.7	25.8	25.4	26.5	27.4	19.0	20.1	19.7	20.8	21.7
	6H	26.7	27.7	27.4	28.5	29.4	19.6	20.6	20.3	21.3	22.2
	8H	27.8	28.8	28.5	29.5	30.5	19.8	20.8	20.5	21.5	22.4
	12H	29.1	30.0	29.8	30.8	31.7	19.9	20.9	20.7	21.6	22.6
4H	2H	20.2	21.3	20.9	22.0	22.9	18.2	19.3	18.9	20.0	20.9
	3H	23.6	24.6	24.4	25.3	26.3	20.2	21.1	20.9	21.9	22.8
	4H	25.6	26.5	26.4	27.3	28.2	21.1	22.0	21.9	22.8	23.7
	6H	27.8	28.6	28.6	29.4	30.4	21.9	22.7	22.7	23.5	24.5
	8H	29.0	29.8	29.9	30.6	31.6	22.3	23.0	23.1	23.8	24.8
	12H	30.5	31.1	31.3	32.0	33.0	22.5	23.2	23.4	24.0	25.1
8H	4H	25.9	26.7	26.8	27.5	28.5	22.6	23.3	23.4	24.1	25.2
	6H	28.4	29.1	29.3	29.9	30.9	23.9	24.5	24.7	25.4	26.4
	8H	29.9	30.4	30.7	31.3	32.4	24.5	25.1	25.3	25.9	27.0
	12H	31.6	32.0	32.4	32.9	34.0	25.0	25.5	25.9	26.4	27.5
12H	4H	26.0	26.6	26.8	27.5	28.5	23.1	23.8	23.9	24.6	25.6
	6H	28.6	29.1	29.4	30.0	31.0	24.7	25.2	25.5	26.1	27.1
	8H	30.1	30.6	31.0	31.5	32.6	25.5	26.0	26.4	26.9	27.9
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1					
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.3 / - 0.5					

CIE Pub.117, 738.1 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -1.1)

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2020-09-02

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.950m [K=1.0000]  
Remarks:

## UTILIZATION FACTORS TABLE

Test:U:24.00V I:0.6161A P:14.79W PF:1.000 Freq:0Hz Lamp Flux:738.11lx1 lm		
NAME: NNR25-ESD	TYPE:	WEIGHT:
SPEC.:NNR25-9LW24CSN050CC0100-ESD	DIM.: 1000*25mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*25mm	Shielding Angle:

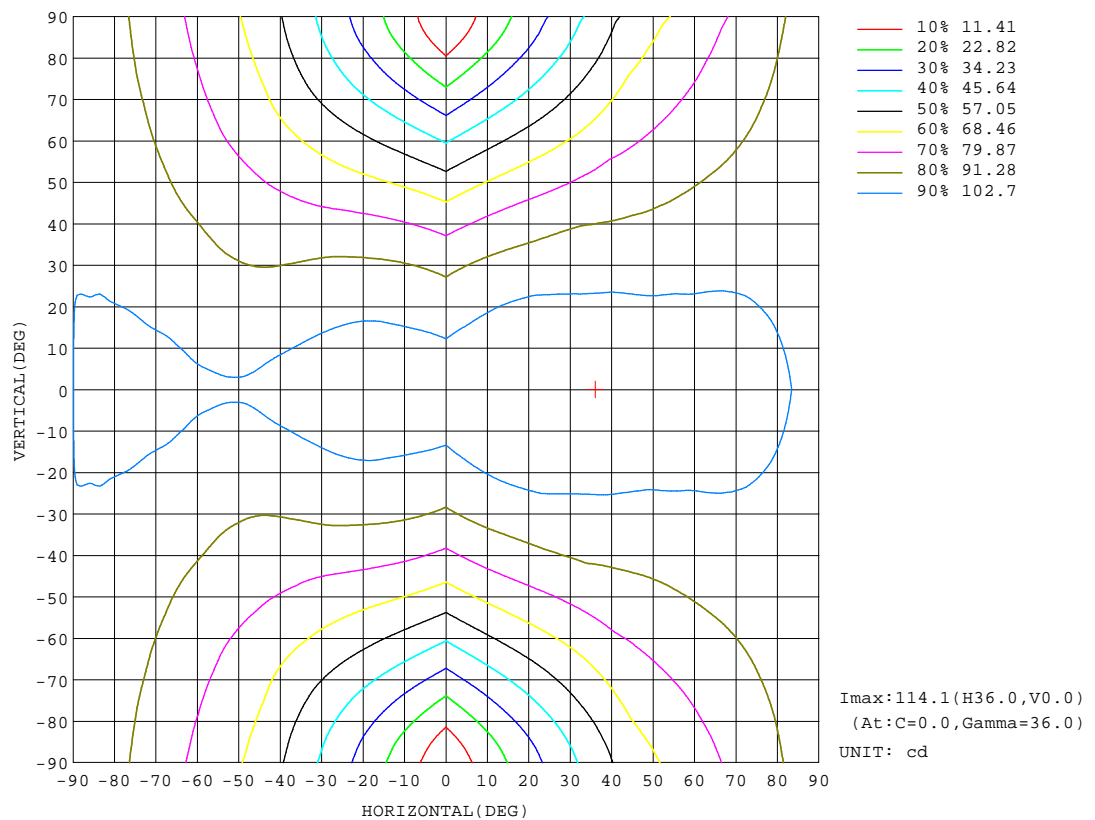
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	42	30	22	41	29	22	38	28	21	15
0.80	51	38	29	49	37	29	45	35	28	19
1.00	59	45	36	56	43	35	51	43	33	24
1.25	65	52	43	62	50	42	57	47	39	28
1.50	71	57	48	67	55	47	61	51	44	31
2.00	78	66	57	74	63	55	67	58	51	37
2.50	83	72	63	78	68	60	70	62	56	40
3.00	87	76	68	82	73	65	73	66	60	43
4.00	92	83	76	87	79	72	77	71	66	47
5.00	95	87	81	90	83	77	80	74	70	50
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2020-09-02

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.950m [K=1.0000]  
Remarks:

## ISOCANDELA DIAGRAM

Test:U:24.00V I:0.6161A P:14.79W PF:1.000 Freq:0Hz Lamp Flux:738.11lx1 lm		
NAME: NNR25-ESD	TYPE:	WEIGHT:
SPEC.:NNR25-9LW24CSN050CC0100-ESD	DIM.: 1000*25mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*25mm	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2020-09-02

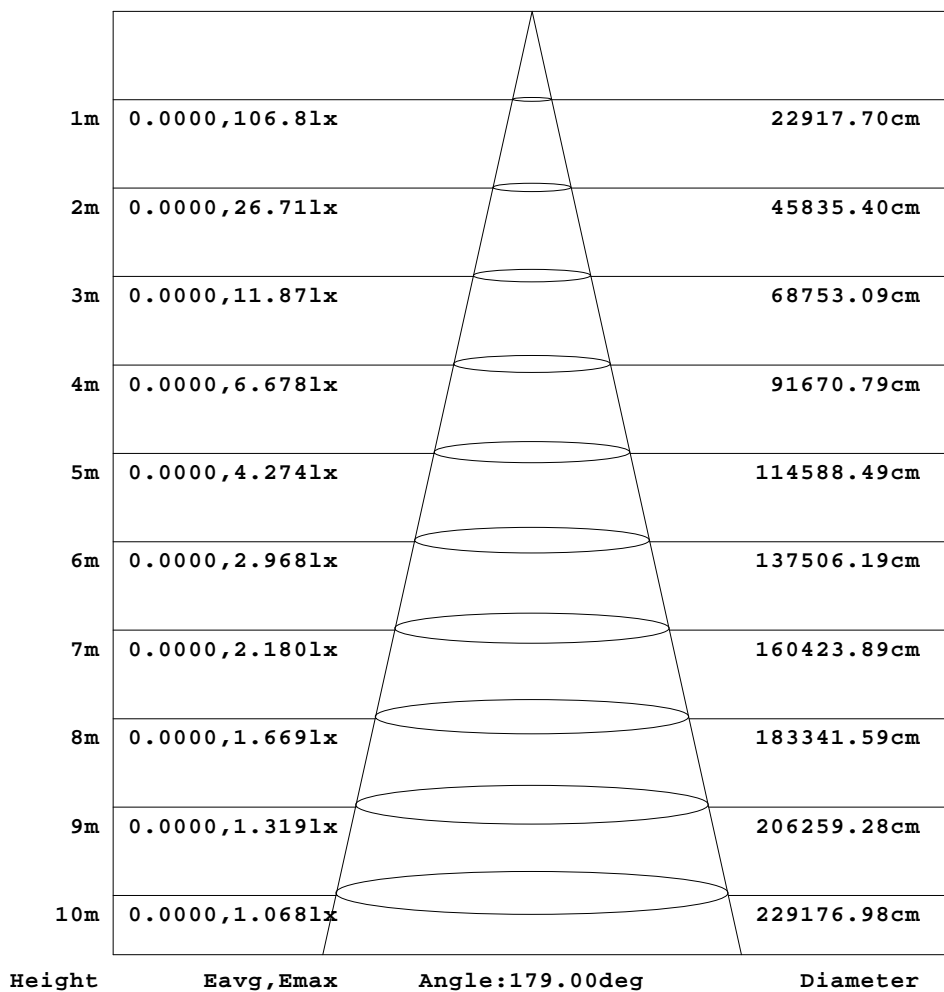
Range: 0 - 180DEG  
Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.950m [K=1.0000]  
Remarks:



### AAI Figure

Test:U:24.00V I:0.6161A P:14.79W PF:1.000 Freq:0Hz Lamp Flux:738.11lx1 lm		
NAME: NNR25-ESD	TYPE:	WEIGHT:
SPEC.:NNR25-9LW24CSN050CC0100-ESD	DIM.: 1000*25mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*25mm	Shielding Angle:

Flux out:505.2 lm



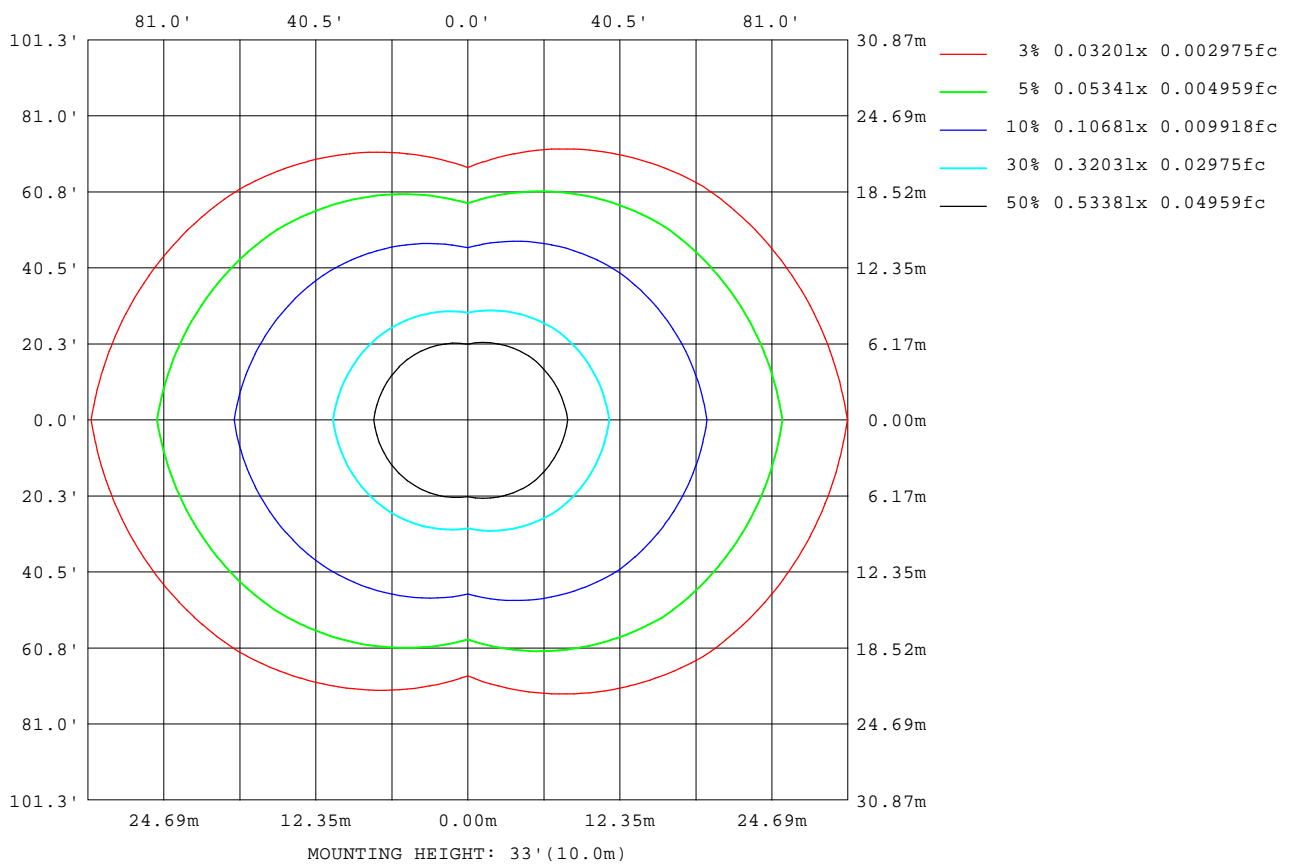
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2020-09-02

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.950m [K=1.0000]  
Remarks:

## ISOLUX DIAGRAM

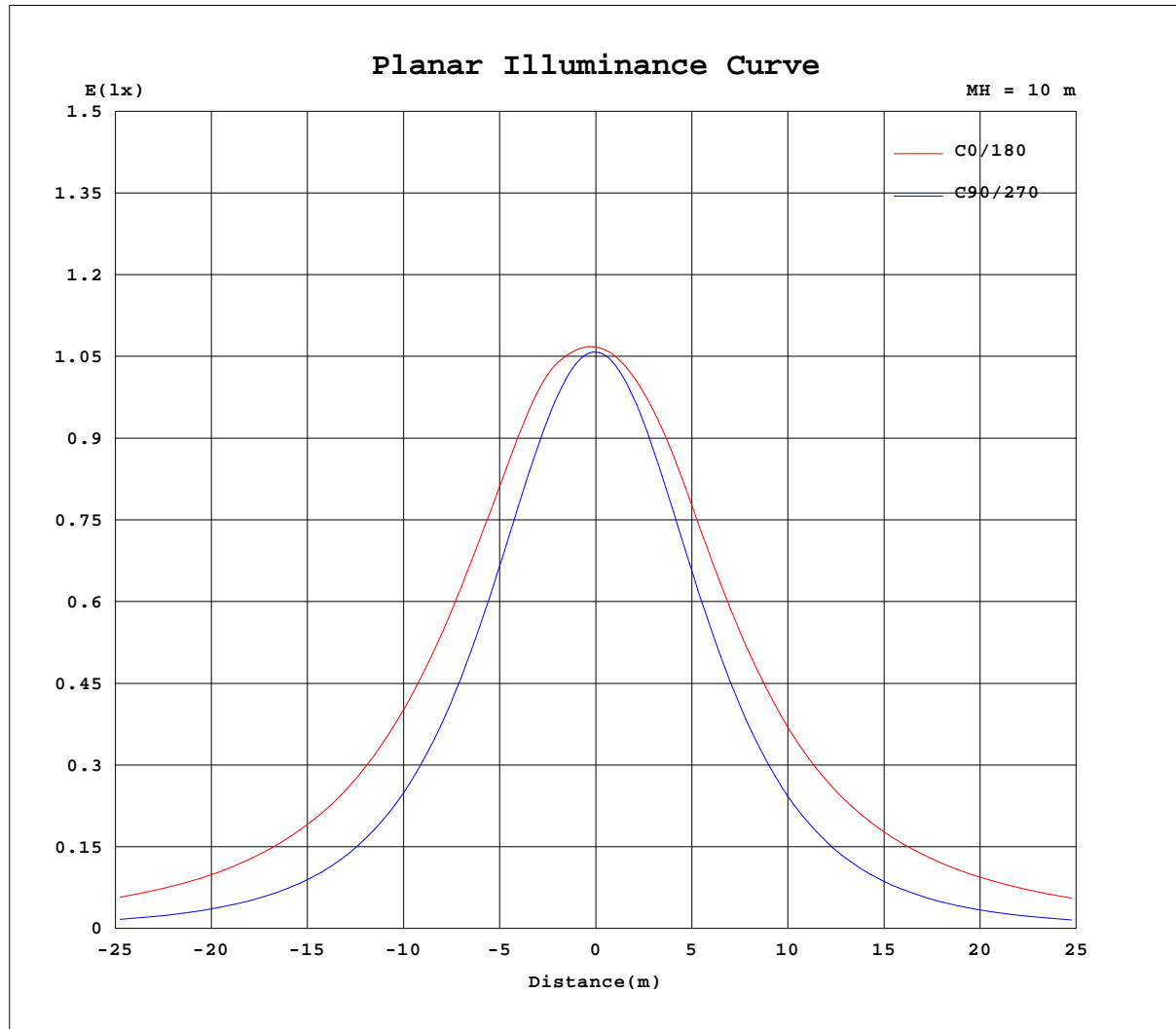
Test:U:24.00V I:0.6161A P:14.79W PF:1.000 Freq:0Hz Lamp Flux:738.11lx1 lm		
NAME: NNR25-ESD	TYPE:	WEIGHT:
SPEC.:NNR25-9LW24CSN050CC0100-ESD	DIM.: 1000*25mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*25mm	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2020-09-02

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.950m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: JYH  
Test Date: 2020-09-02

Range: 0 - 180DEG  
Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity: 65.0%  
Test Distance: 10.950m [K=1.0000]  
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.00V I:0.6161A P:14.79W PF:1.000 Freq:0Hz Lamp Flux:738.11lx1 lm		
NAME: NNR25-ESD	TYPE:	WEIGHT:
SPEC.:NNR25-9LW24CSN050CC0100-ESD	DIM.: 1000*25mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*25mm	Shielding Angle:

Table--1

UNIT: cd

C(DEG) g (DEG)	0	45	90	135	180	225	270	315										
0	107	106	106	106	107	106	106	106										
5	108	107	106	106	107	106	105	106										
10	109	107	104	105	107	105	104	106										
15	112	107	102	104	108	104	101	106										
20	113	107	98.7	104	109	103	97.6	106										
25	113	106	94.5	102	109	102	93.4	105										
30	114	104	89.6	99.9	108	99.4	88.3	103										
35	114	102	83.9	96.6	107	96.2	82.5	100										
40	114	99.1	77.6	93.1	106	92.5	75.9	97.4										
45	114	96.2	70.6	89.0	105	88.3	68.8	94.4										
50	113	92.6	63.1	84.8	104	84.0	61.2	90.8										
55	112	88.7	55.1	81.1	104	80.2	53.2	86.9										
60	112	84.9	46.8	78.1	105	77.2	44.8	83.0										
65	111	81.0	38.2	75.2	106	74.4	36.1	79.1										
70	110	77.2	29.5	72.4	107	71.6	27.6	75.4										
75	108	73.8	21.1	69.9	107	69.3	19.6	71.9										
80	105	70.1	13.4	68.3	106	67.7	12.1	68.4										
85	102	66.7	6.91	66.7	104	66.1	5.51	65.1										
90	97.8	63.4	2.83	65.0	103	64.5	1.94	61.0										
95	94.8	60.6	2.61	64.1	101	63.6	1.75	56.2										
100	91.6	58.0	0.86	63.6	99.6	63.3	0.82	52.0										
105	88.2	55.1	0.65	63.2	98.3	63.0	0.66	52.6										
110	84.3	50.5	0.65	60.9	96.4	60.8	0.71	47.8										
115	78.3	44.2	0.73	55.6	92.4	56.4	0.80	42.9										
120	70.9	37.4	0.86	48.7	86.0	50.6	0.90	36.3										
125	63.0	29.4	0.95	42.7	78.5	44.1	0.98	29.3										
130	55.1	24.0	1.07	38.0	70.3	38.2	1.09	24.7										
135	46.7	19.3	1.15	32.3	61.5	32.5	1.14	19.5										
140	38.3	15.2	1.17	26.8	52.2	27.0	1.20	15.6										
145	30.7	11.8	1.30	21.3	42.6	21.6	1.25	12.2										
150	23.9	8.73	1.30	16.0	33.5	16.4	1.31	9.29										
155	17.6	6.21	1.36	11.0	24.7	11.4	1.42	6.87										
160	11.8	4.01	1.50	6.40	16.5	6.52	1.56	4.61										
165	6.03	2.01	1.58	3.17	8.92	3.15	1.67	2.63										
170	1.83	1.68	1.71	2.13	2.42	2.04	1.77	1.76										
175	1.64	1.79	1.79	1.98	1.52	1.88	1.87	1.78										
180	1.62	1.91	1.93	2.00	1.58	1.90	1.93	2.00										

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2020-09-02

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.950m [K=1.0000]  
Remarks: