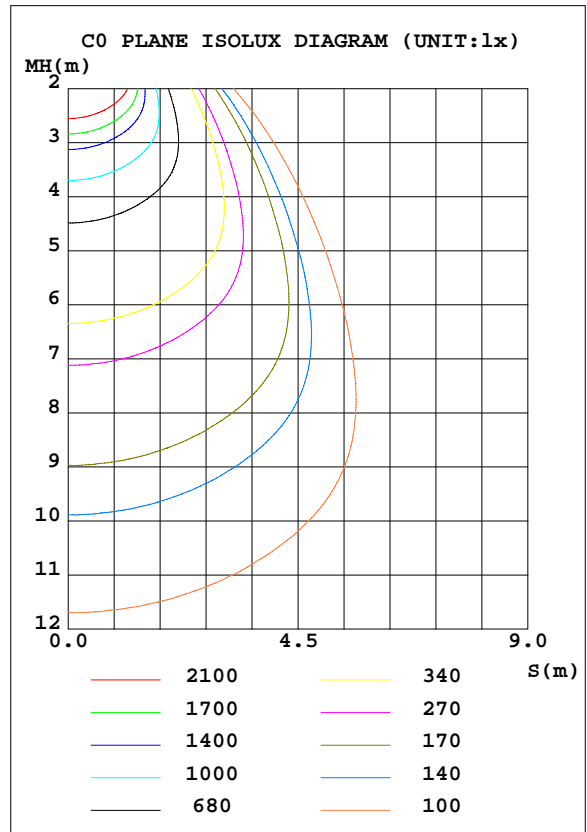
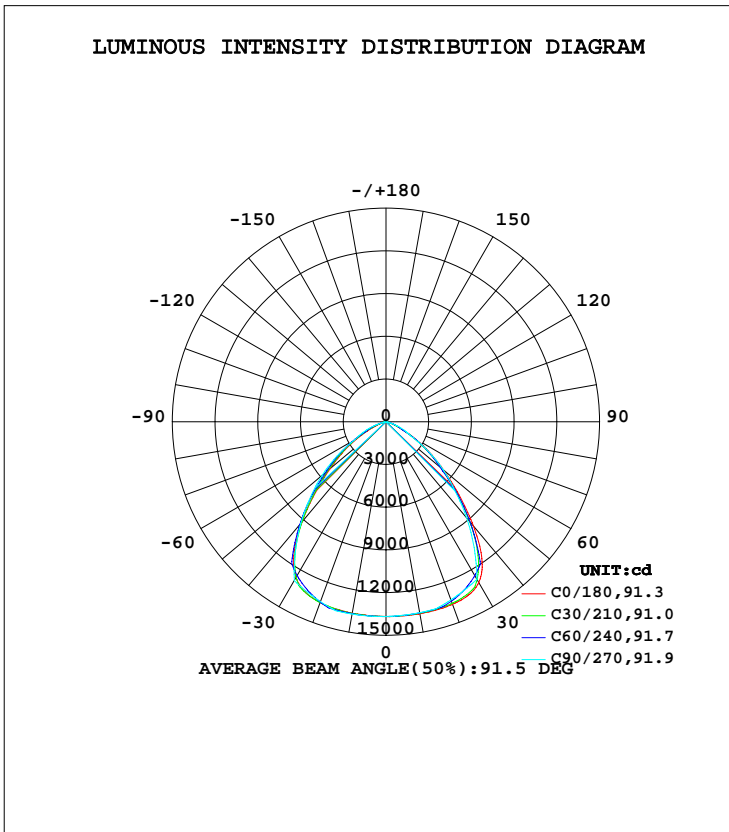


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:219.4V I:0.9136A P:196.0W PF:0.9775 Lamp Flux:28739.3x1 lm		
NAME: NSH-NA200W-90D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: NEWSTAR	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 146.65 lm/W			
MODEL		I _{max} (cd)	13732	S/MH(C0/180)	1.27
NOMINAL POWER(W)	200	LOR(%)	100.0	S/MH(C90/270)	1.29
RATED VOLTAGE(V)	220.0	TOTAL FLUX(lm)	28739	η UP, DN(C0-180)	0.0,49.1
NOMINAL FLUX(lm)	28739.3	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,50.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220.0	η down(%)	100.0	CIBSE SHR MAX	1.30



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity:65.2%
 Test Distance:6.710m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

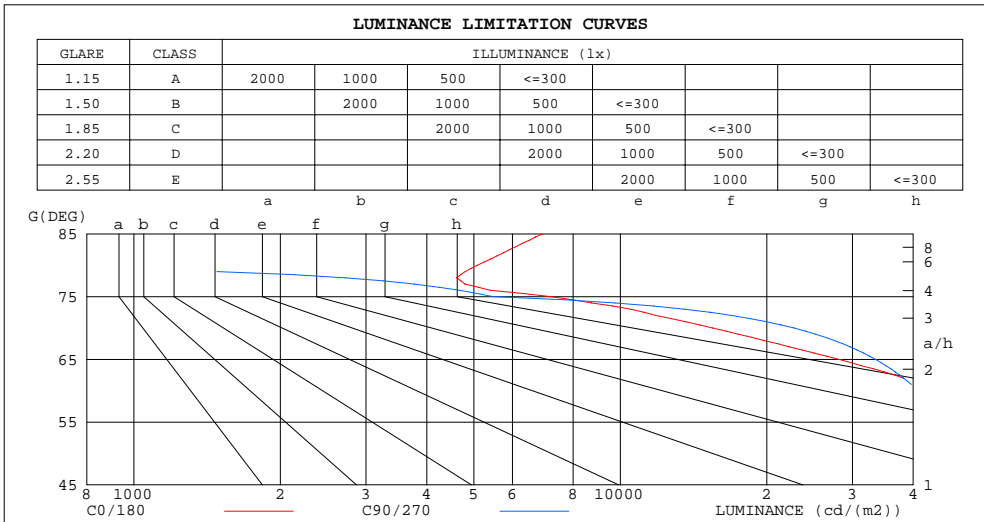
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	lum, lamp
5	1368	1366	1365	1365	1367	1368	1369	1369	0- 5	326.9	326.9	1.14,1.14
10	1370	1365	1362	1361	1365	1367	1371	1371	5- 10	977.8	1305	4.54,4.54
15	1369	1362	1359	1357	1360	1365	1373	1370	10- 15	1620	2924	10.2,10.2
20	1365	1357	1332	1350	1351	1359	1345	1366	15- 20	2238	5162	18,18
25	1350	1314	1305	1300	1327	1311	1316	1326	20- 25	2801	7963	27.7,27.7
30	1304	1234	1277	1214	1264	1230	1288	1251	25- 30	3271	11234	39.1,39.1
35	1175	1111	1079	1087	1126	1110	1109	1135	30- 35	3525	14759	51.4,51.4
40	955.8	934.9	881.4	912.5	917.4	946.1	930.2	967.4	35- 40	3412	18171	63.2,63.2
45	724.0	710.5	683.4	696.3	698.2	737.5	751.2	747.4	40- 45	3015	21187	73.7,73.7
50	529.1	514.6	523.9	507.4	512.7	551.0	585.5	551.6	45- 50	2489	23675	82.4,82.4
55	371.1	347.6	364.4	345.5	364.3	391.0	419.9	385.0	50- 55	1949	25624	89.2,89.2
60	230.9	228.4	205.0	227.3	228.6	263.7	254.2	258.0	55- 60	1398	27022	94,94
65	118.8	123.1	141.4	122.7	118.1	148.4	177.3	142.6	60- 65	876.3	27898	97.1,97.1
70	52.85	57.10	77.75	57.12	51.94	71.46	100.5	67.14	65- 70	502.5	28401	98.8,98.8
75	18.56	30.51	14.14	30.61	18.95	35.76	23.57	33.77	70- 75	240.4	28641	99.7,99.7
80	8.834	8.383	0	8.709	9.163	7.634	0	7.279	75- 80	74.19	28716	99.9,99.9
85	6.039	0	0	0	6.575	0	0	0	80- 85	20.04	28736	100,100
90	2.102	0	0	0	3.667	0	0	0	85- 90	3.618	28739	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:×10cd								UNIT:lm			

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity:65.2%
 Test Distance:6.710m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:219.4V I:0.9136A P:196.0W PF:0.9775 Lamp Flux:28739.3x1 lm		
NAME: NSH-NA200W-90D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: NEWSTAR	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	6929	0
80	5087	0
75	7173	5463
70	15453	22733
65	28102	33449
60	46183	40994
55	64701	63538
50	82317	81505
45	102388	96643

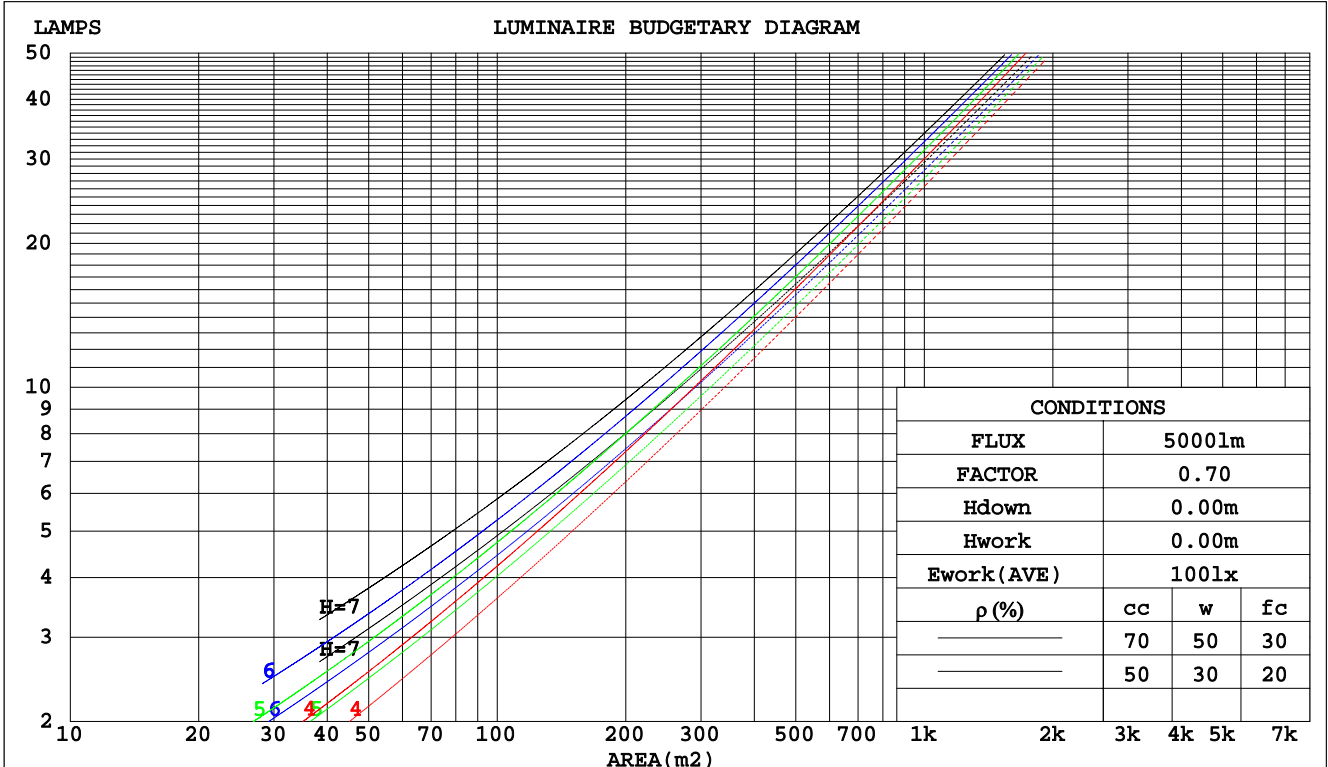
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity:65.2%
 Test Distance:6.710m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:219.4V I:0.9136A P:196.0W PF:0.9775 Lamp Flux:28739.3x1 lm		
NAME: NSH-NA200W-90D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: NEWSTAR	SUR.:	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																0
pfc																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	.00
1.0	1.08	1.05	1.02	1.06	1.03	1.00	1.02	.99	.97	.98	.96	.94	.94	.93	.91	.89
2.0	.97	.92	.87	.95	.90	.86	.92	.88	.84	.89	.85	.82	.86	.83	.81	.79
3.0	.87	.81	.75	.86	.80	.75	.83	.78	.74	.80	.76	.72	.78	.74	.71	.69
4.0	.79	.72	.66	.78	.71	.66	.75	.69	.65	.73	.68	.64	.71	.67	.63	.61
5.0	.72	.64	.58	.71	.63	.58	.69	.62	.57	.67	.61	.57	.65	.60	.56	.54
6.0	.65	.57	.52	.64	.57	.52	.63	.56	.51	.61	.55	.51	.60	.54	.50	.49
7.0	.60	.52	.47	.59	.52	.46	.58	.51	.46	.56	.50	.46	.55	.50	.45	.44
8.0	.55	.47	.42	.54	.47	.42	.53	.46	.42	.52	.46	.41	.51	.45	.41	.40
9.0	.51	.43	.38	.50	.43	.38	.49	.42	.38	.48	.42	.38	.47	.42	.38	.36
10.0	.47	.40	.35	.46	.39	.35	.46	.39	.35	.45	.39	.35	.44	.38	.34	.33



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity: 65.2%
 Test Distance: 6.710m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:219.4V I:0.9136A P:196.0W PF:0.9775 Lamp Flux:28739.3x1 lm		
NAME: NSH-NA200W-90D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: NEWSTAR	SUR.:	Shielding Angle:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.233	.132	.042	.226	.129	.041	.213	.122	.039	.201	.116	.037	.190	.110	.036	
2.0	.228	.125	.038	.222	.122	.038	.211	.117	.036	.201	.113	.035	.191	.108	.034	
3.0	.218	.116	.035	.213	.114	.034	.204	.110	.034	.195	.107	.033	.186	.103	.032	
4.0	.207	.108	.032	.203	.106	.031	.194	.103	.031	.186	.100	.030	.179	.097	.030	
5.0	.196	.100	.029	.192	.099	.029	.184	.096	.028	.177	.094	.028	.171	.091	.027	
6.0	.185	.093	.027	.182	.092	.026	.175	.090	.026	.169	.088	.026	.163	.086	.025	
7.0	.175	.087	.025	.172	.086	.024	.166	.084	.024	.160	.082	.024	.155	.081	.024	
8.0	.166	.081	.023	.163	.080	.023	.158	.079	.022	.152	.077	.022	.148	.076	.022	
9.0	.157	.076	.021	.155	.075	.021	.150	.074	.021	.145	.073	.021	.141	.072	.021	
10.0	.149	.072	.020	.147	.071	.020	.142	.070	.020	.138	.069	.020	.134	.068	.019	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	.175	.157	.140	.150	.135	.121	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.164	.132	.106	.140	.114	.091	.096	.079	.064	.055	.046	.037	.018	.015	.012	
3.0	.155	.114	.082	.133	.098	.071	.091	.068	.050	.053	.040	.029	.017	.013	.010	
4.0	.147	.100	.065	.126	.086	.056	.086	.060	.039	.050	.035	.023	.016	.011	.008	
5.0	.139	.089	.052	.120	.077	.045	.082	.054	.032	.048	.032	.019	.015	.010	.006	
6.0	.133	.081	.043	.114	.070	.038	.079	.049	.027	.046	.029	.016	.015	.009	.005	
7.0	.126	.074	.036	.109	.064	.032	.075	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.121	.068	.031	.104	.059	.027	.072	.041	.019	.042	.024	.012	.014	.008	.004	
9.0	.115	.063	.027	.099	.054	.024	.069	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.110	.059	.024	.095	.051	.021	.066	.036	.015	.039	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity:65.2%
 Test Distance:6.710m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:219.4V I:0.9136A P:196.0W PF:0.9775 Lamp Flux:28739.3x1 lm										
NAME: NSH-NA200W-90D					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: NEWSTAR					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	26.5	27.8	26.7	28.0	28.1	26.5	27.8	26.7	28.0	28.2
3H	26.5	27.7	26.8	27.9	28.1	26.7	27.9	27.0	28.1	28.3
4H	26.4	27.5	26.7	27.8	28.0	26.6	27.8	26.9	28.0	28.2
6H	26.3	27.4	26.7	27.6	27.9	26.5	27.6	26.9	27.8	28.1
8H	26.3	27.3	26.6	27.6	27.9	26.5	27.5	26.8	27.8	28.0
12H	26.3	27.2	26.6	27.5	27.8	26.4	27.4	26.8	27.7	28.0
4H 2H	26.5	27.6	26.8	27.9	28.1	26.5	27.6	26.8	27.9	28.1
3H	26.6	27.5	26.9	27.8	28.1	26.8	27.8	27.1	28.0	28.3
4H	26.5	27.4	26.9	27.7	28.0	26.8	27.6	27.1	27.9	28.3
6H	26.5	27.2	26.8	27.6	27.9	26.7	27.4	27.1	27.8	28.1
8H	26.4	27.1	26.8	27.5	27.9	26.6	27.3	27.0	27.7	28.1
12H	26.4	27.0	26.8	27.4	27.8	26.6	27.2	27.0	27.6	28.0
8H 4H	26.4	27.1	26.8	27.5	27.9	26.7	27.4	27.1	27.7	28.1
6H	26.4	27.0	26.8	27.4	27.8	26.6	27.1	27.0	27.5	28.0
8H	26.4	26.9	26.8	27.3	27.7	26.5	27.0	27.0	27.5	27.9
12H	26.3	26.8	26.8	27.2	27.7	26.5	26.9	27.0	27.4	27.8
12H 4H	26.4	27.0	26.8	27.4	27.8	26.6	27.3	27.0	27.6	28.0
6H	26.3	26.8	26.8	27.3	27.7	26.5	27.0	27.0	27.5	27.9
8H	26.3	26.7	26.8	27.2	27.7	26.5	26.9	27.0	27.4	27.8
Variations with the observer position at spacings:										
S = 1.0H	+ 1.1 / - 1.7					+ 1.1 / - 1.4				
1.5H	+ 0.8 / - 0.9					+ 0.6 / - 0.7				
2.0H	+ 2.3 / - 3.4					+ 2.2 / - 3.7				

CIE Pub.117 Corrected 28739 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.7)

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity:65.2%
 Test Distance:6.710m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:219.4V I:0.9136A P:196.0W PF:0.9775 Lamp Flux:28739.3x1 lm		
NAME: NSH-NA200W-90D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: NEWSTAR	SUR.:	Shielding Angle:

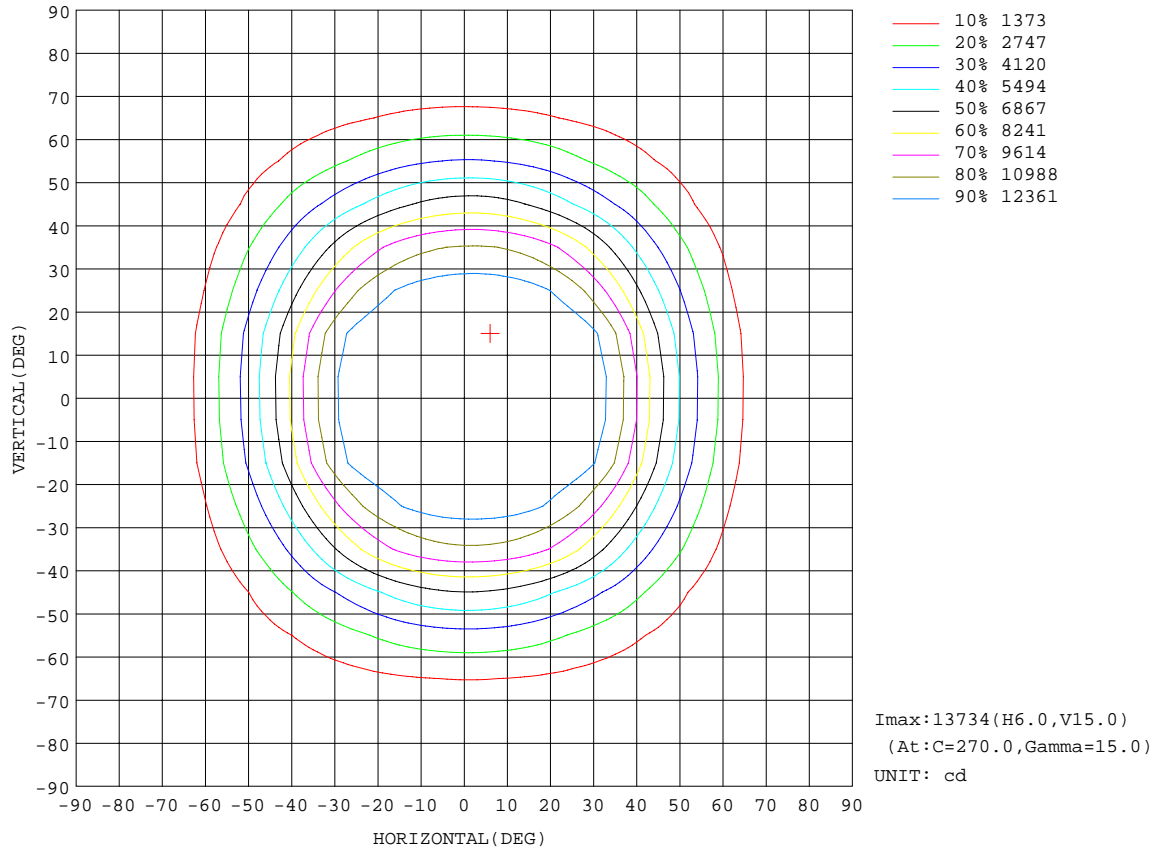
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	68	58	52	67	58	52	66	58	52	47
0.80	78	69	63	77	68	63	76	68	62	57
1.00	86	77	72	85	77	71	83	78	71	65
1.25	92	84	79	91	84	79	89	83	78	72
1.50	97	89	84	95	88	84	93	87	83	76
2.00	102	96	91	100	95	90	97	93	89	82
2.50	105	99	95	103	98	94	100	95	92	85
3.00	107	102	98	105	101	97	102	98	95	88
4.00	110	106	103	108	104	101	104	101	99	91
5.00	112	108	105	110	106	104	105	103	101	92
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity:65.2%
 Test Distance:6.710m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:219.4V I:0.9136A P:196.0W PF:0.9775 Lamp Flux:28739.3x1 lm		
NAME: NSH-NA200W-90D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: NEWSTAR	SUR.:	Shielding Angle:

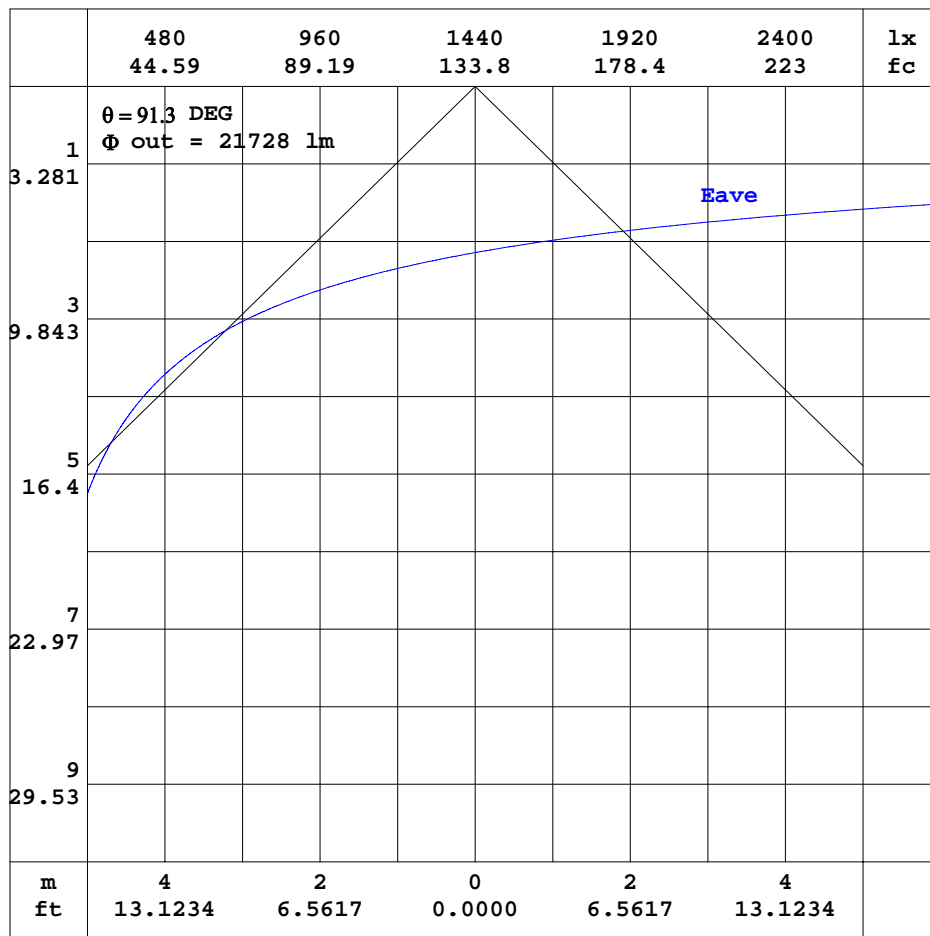


C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity: 65.2%
 Test Distance: 6.710m [K=1.0000]
 Remarks:

AAI CURVES

Test:U:219.4V I:0.9136A P:196.0W PF:0.9775 Lamp Flux:28739.3x1 lm		
NAME: NSH-NA200W-90D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: NEWSTAR	SUR.:	Shielding Angle:



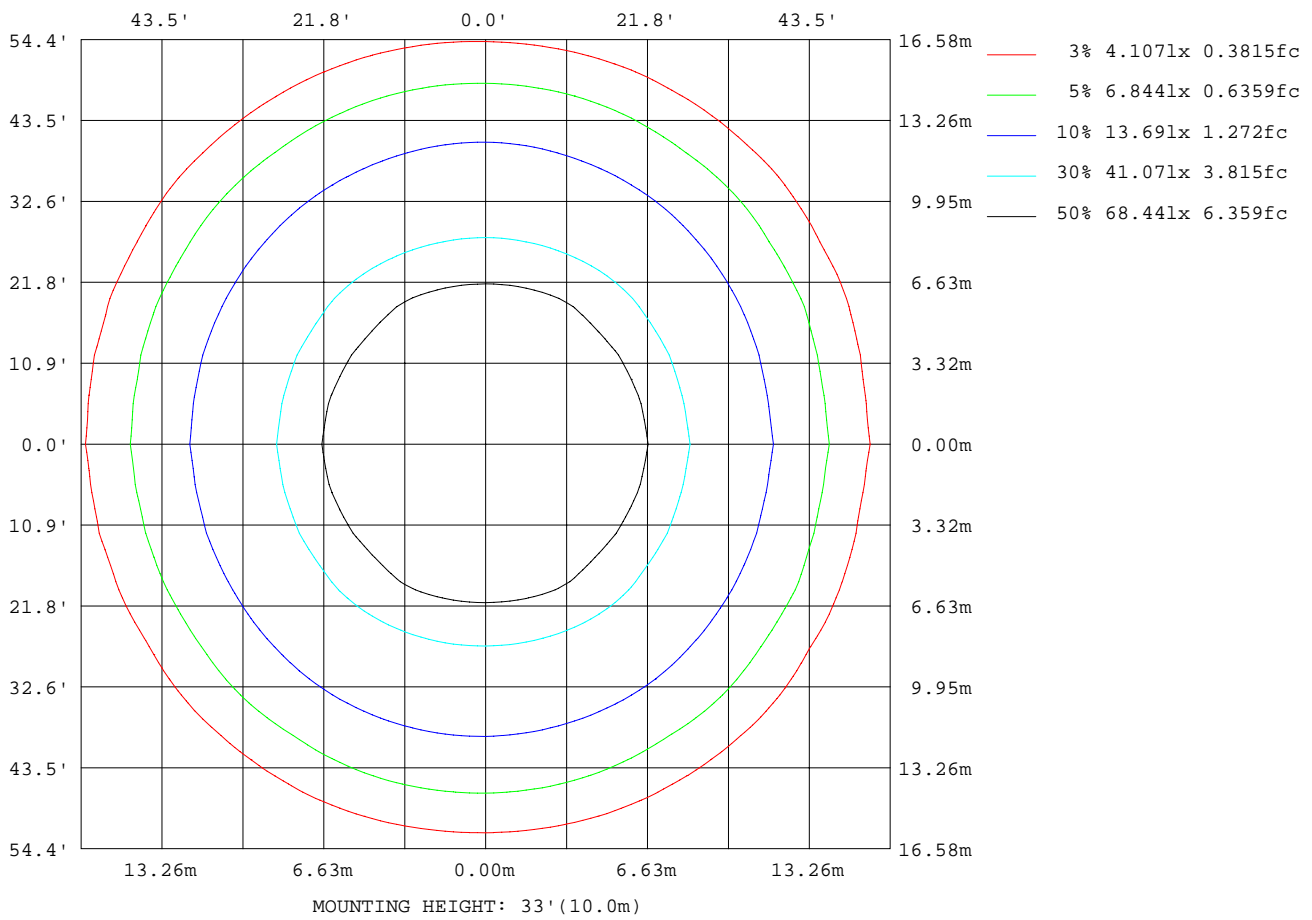
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity: 65.2%
 Test Distance: 6.710m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:219.4V I:0.9136A P:196.0W PF:0.9775 Lamp Flux:28739.3x1 lm		
NAME: NSH-NA200W-90D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: NEWSTAR	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity:65.2%
 Test Distance:6.710m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:219.4V I:0.9136A P:196.0W PF:0.9775 Lamp Flux:28739.3x1 lm		
NAME: NSH-NA200W-90D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: NEWSTAR	SUR.:	Shielding Angle:

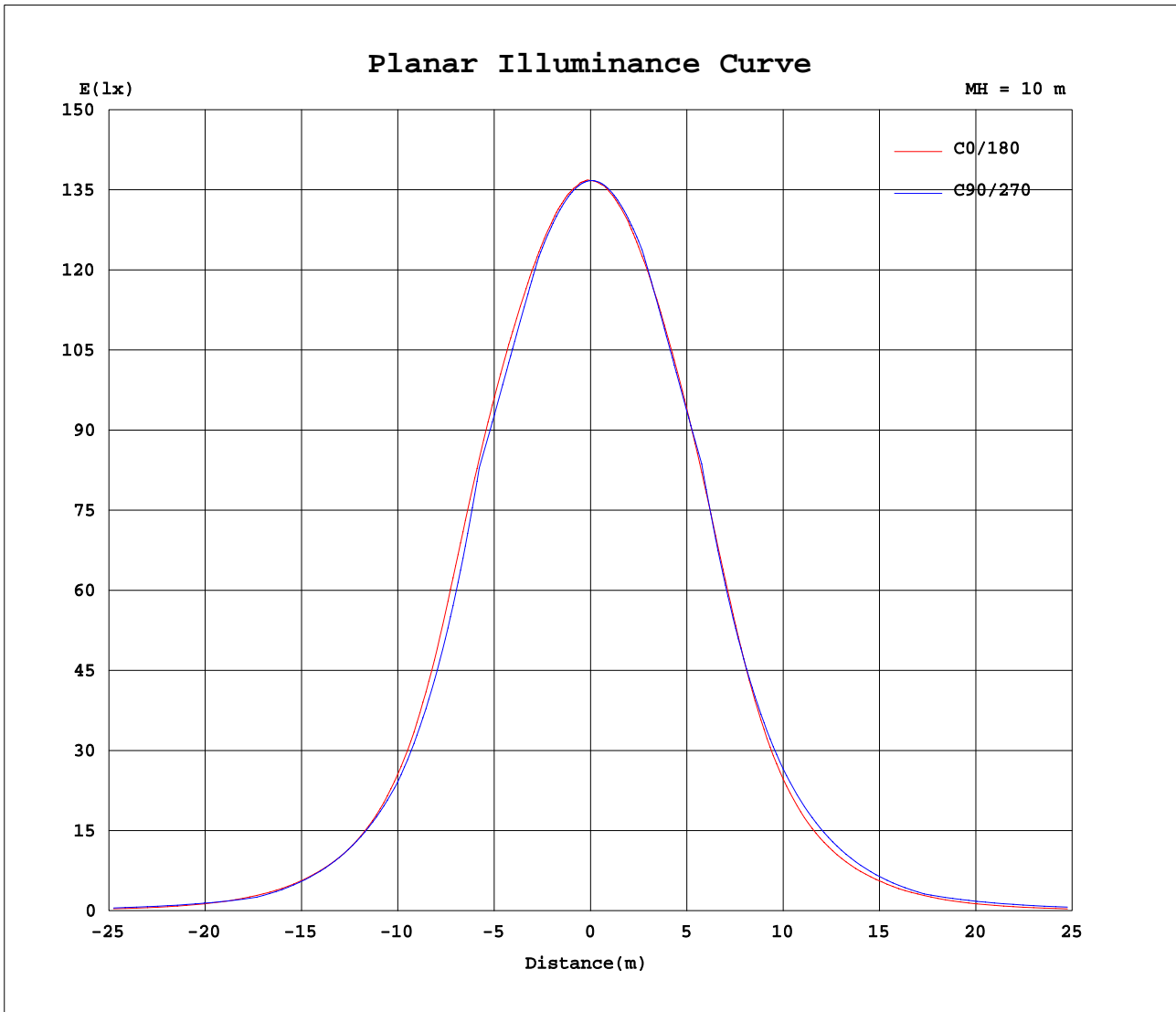
AvgL	cd/m2
L_0~180(65)av	28023
L_0~180(75)av	7247
L_0~180(85)av	7236
L_90~270(65)av	37705
L_90~270(75)av	7286
L_90~270(85)av	0
L_45(65)av	31757
L_45(75)av	12620
L_45(85)av	0

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity:65.2%
 Test Distance:6.710m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.351
 Humidity: 65.2%
 Test Distance: 6.710m [K=1.0000]
 Remarks: