

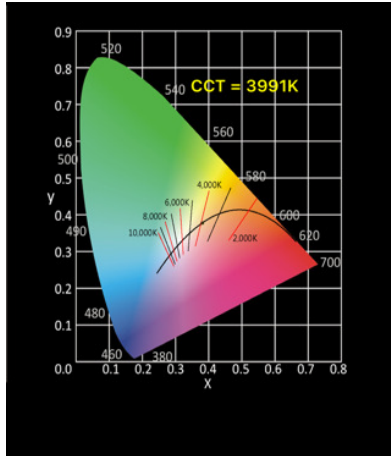
Report of Photometry & Chromaticity for Morgan Hope Ltd. ASTRID STRATA 112 -36W LED LUMINAIRE

A. Product Description



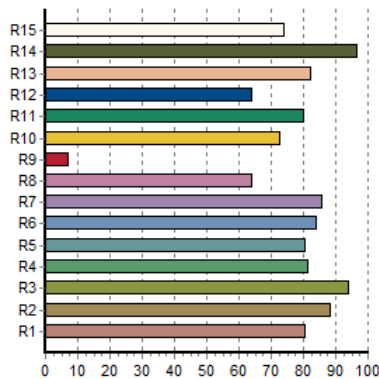
Product Name astrid strata 112 36w ASTRID STRATA 36W
Date 30-06-2016
Manufacturer Morgan Hope
Tester lightlab photometrics Reviewer KB
Temperature 25degC Re. Humidity(%) 50
Spectrum Range : 380 ~ 780 nm. Wavelength Step : 1 nm.
















C. Photometry and Chromaticity



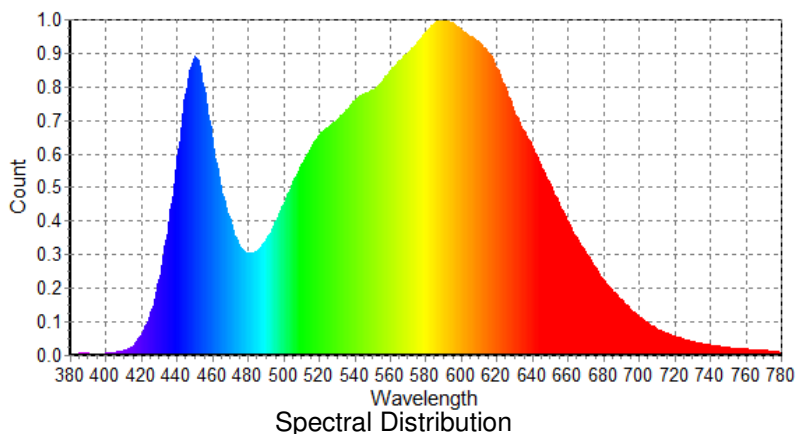
CIE1931 Chromaticity Diagram

CIE_x	0.3810	Δv	0.0003
CIE_y	0.3778	Ld(nm)	578.9
CIE_u'	0.2251	Purity(%)	28.0
CIE_v'	0.5021	FWHM(nm)	148.0
CCT(K)	3991	SP ratio	1.68
Luminaire lumens	2915	PPFD(umol/sec m ²)	
Lp(nm)	588.0		15.5
TLCl(Qa)	66.15	GAI	73.0

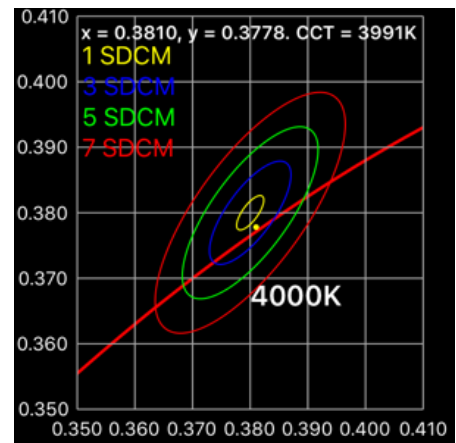


CRI(Ra)		83	Re(thru R1~R15)		76
Qa		82			
 R1	80.9	 R6	84.4	 R11	80.5
 R2	88.7	 R7	86.0	 R12	64.5
 R3	94.4	 R8	64.4	 R13	82.7
 R4	81.8	 R9	7.5	 R14	96.9
 R5	81.1	 R10	72.9	 R15	74.6

Histogram Diagram of CRI



Spectral Distribution



IEC SDCM

filename : ASTRID-STRATA-112.LDT
 meas. number : 1947
 luminaire number : ASTRID STRATA 112
 date / operator : 01-07-2016



default lamp type(s)

no of lamps	lamp type	luminaire lumens	input wattage
1	LED MODULE	2915 lm	37.5 W

dimensions

luminaire		luminous area	
length	: 1200 mm	length	: 1120 mm
width	: 150 mm	width	: 60 mm
height	: 55 mm	height	: 20 mm

coordinate system

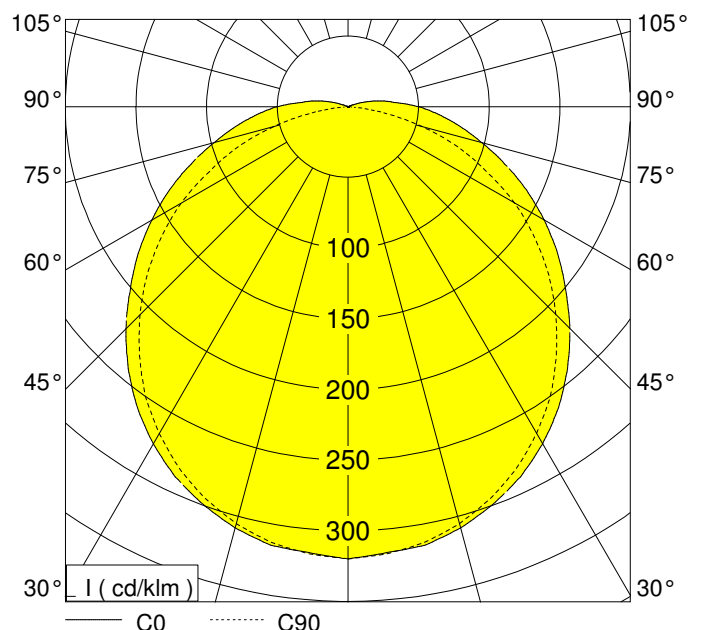
no of planes	: 7	samples / plane	: 37
first c-plane	: 0.0 °	first gamma-angle	: 0.0 °
step angle	: 15.0 °	step angle	: 5.0 °
last c-plane	: 90.0 °	last gamma-angle	: 180.0 °
symmetrics : symmetry to C0 / C90			

performance

light output ratio : 100.0 %
 DFF : 97.5 %
 UFF : 2.5 %

classification

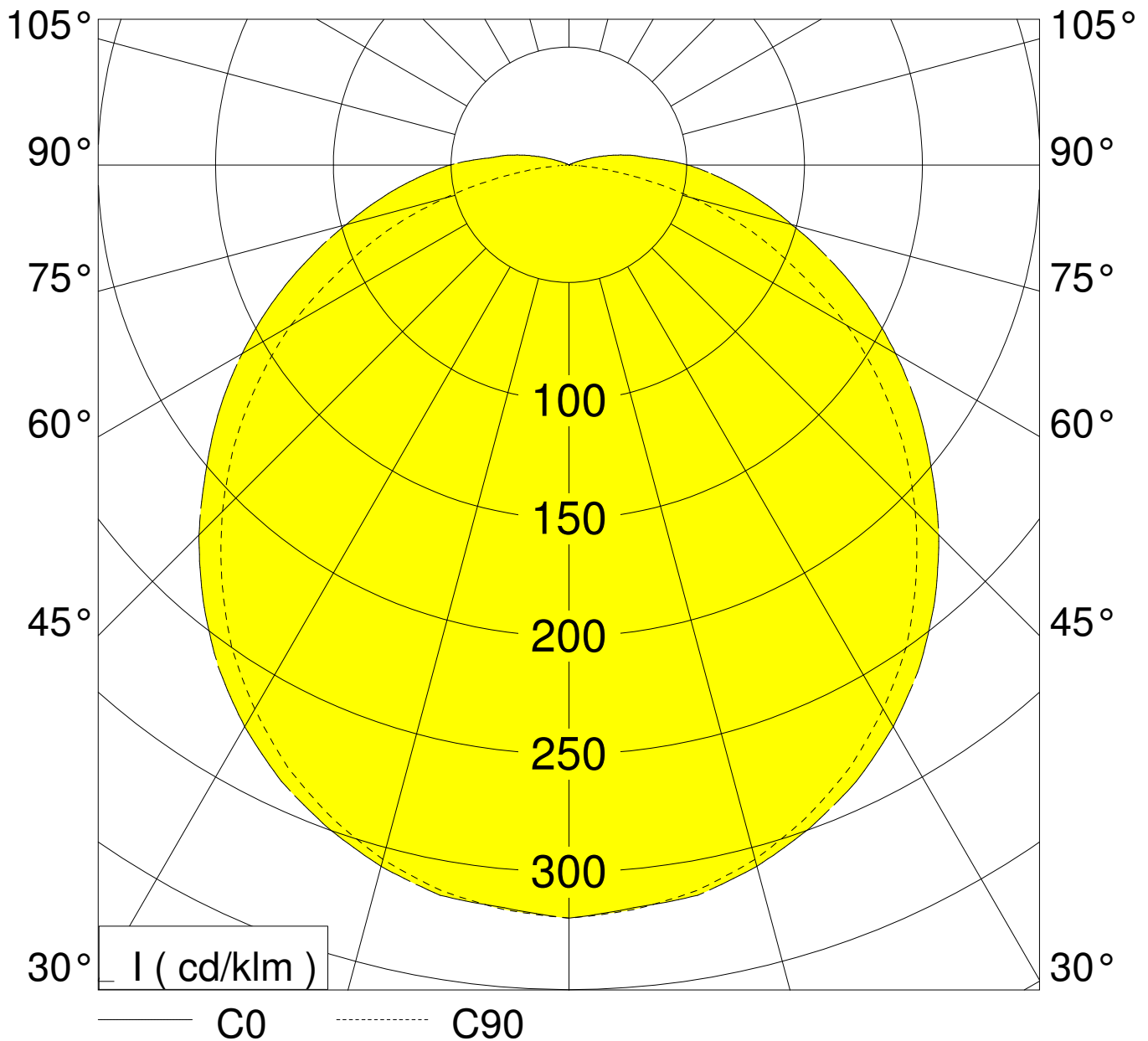
LiTG / DIN : A41
 UTE : 0.98E+0.02T
 CIE : 44 74 92 98 100
 BZ : 5 5 5 5 5 5 5 5
 Ambient Temperature : 25 degC
 Input Voltage : 240 V
 Circuit Watts : 37.5W
 Amps (running) : 0.164A
 V.A. : 39.47VA
 Power Factor : 0.95
 CCT : 3991K (measured): 4000K (declared)
 CRI (Ra) : 83
 Luminaire Lumens : 2915 LLm
 Output Current DC : 560mA
 Output Voltage DC : 59.6V
 Output Power : 33.38W
 Luminaire Lm/circ.Watt : 78 Lm/circ.Watt
 Driver Efficiency : 89%
 Driver Details : OPTOTRONIC OTi 60/220-240/SSO D LT2L



Measurements made are in absolute units. The luminaire is treated as if it was a lamp as it is not possible to measure each LED separately - hence an LOR of 100%

The Light output ratio in real terms would be less than 100%. If it was possible to compare real LED lumens with the total output from the luminaire we could obtain an actual LOR

This also means that the total lumens emitted from the LED's would be greater than the Luminaire Lumens measured. In reality the LED lumens would approximate to this value divided by the actual Light Output.



	C 0.0	C 15.0	C 30.0	C 45.0	C 60.0	C 75.0	C 90.0
0.0°	319.40	319.40	319.40	319.40	319.40	319.40	319.40
5.0°	316.20	316.90	317.60	318.20	318.80	317.90	317.00
10.0°	314.50	314.00	313.50	313.60	313.70	313.10	312.50
15.0°	308.00	307.70	307.40	306.40	305.40	305.10	304.90
20.0°	299.10	298.50	297.90	297.10	296.30	295.40	294.50
25.0°	288.50	288.00	287.50	286.10	284.70	283.30	282.00
30.0°	275.10	273.90	272.80	271.50	270.30	268.40	266.50
35.0°	259.50	258.80	258.10	255.70	253.30	251.40	249.50
40.0°	241.40	239.90	238.30	235.40	232.60	230.80	229.10
45.0°	221.90	220.10	218.30	214.90	211.50	209.60	207.80
50.0°	200.80	198.70	196.60	192.90	189.20	187.30	185.40
55.0°	181.00	178.50	176.00	171.20	166.30	163.70	161.20
60.0°	160.10	157.20	154.30	147.90	141.40	138.90	136.30
65.0°	139.20	135.40	131.60	123.90	116.20	112.00	107.90
70.0°	117.90	113.90	109.90	100.00	90.20	86.40	82.60
75.0°	97.90	94.00	90.10	79.10	68.10	61.30	54.40
80.0°	80.70	76.20	71.70	59.40	47.10	37.60	28.00
85.0°	64.80	60.00	55.20	40.50	25.80	15.60	5.30
90.0°	50.40	45.20	39.90	27.20	14.40	7.20	0.00
95.0°	34.10	30.40	26.60	15.50	4.30	2.20	0.00
100.0°	24.40	20.50	16.60	8.30	0.00	0.00	0.00
105.0°	14.20	11.20	8.20	4.10	0.00	0.00	0.00
110.0°	5.50	3.70	2.00	1.00	0.00	0.00	0.00
115.0°	1.40	0.70	0.00	0.00	0.00	0.00	0.00
120.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	cd / klm						

glare rating according to UGR											
ρ-ceiling		70	70	50	50	30	70	70	50	50	30
ρ-walls		50	30	50	30	30	50	30	50	30	30
ρ-workplane		20	20	20	20	20	20	20	20	20	20
room dimensions X Y		viewed crosswise					viewed endwise				
2H	2H	20.6	22.1	20.9	22.3	22.6	20.7	22.2	21.0	22.5	22.7
	3H	21.7	22.9	22.0	23.1	23.4	21.7	22.8	21.9	23.1	23.3
	4H	22.6	23.7	22.9	24.0	24.2	22.3	23.4	22.6	23.7	23.9
	6H	23.3	24.4	23.6	24.7	25.0	22.6	23.7	23.0	24.0	24.3
	8H	23.7	24.8	24.0	25.1	25.4	22.8	23.8	23.1	24.1	24.4
	12H	24.1	25.1	24.4	25.5	25.8	22.8	23.9	23.2	24.2	24.5
4H	2H	20.7	21.9	21.0	22.1	22.4	20.8	22.0	21.1	22.2	22.5
	3H	22.7	23.8	23.1	24.1	24.4	22.6	23.7	23.0	24.0	24.3
	4H	23.8	24.9	24.2	25.2	25.5	23.4	24.5	23.8	24.8	25.2
	6H	24.5	25.4	24.9	25.7	26.1	23.7	24.6	24.1	24.9	25.3
	8H	25.0	25.8	25.4	26.2	26.6	23.9	24.7	24.3	25.1	25.5
	12H	25.5	26.3	26.0	26.8	27.2	24.1	24.9	24.5	25.3	25.8
8H	4H	23.9	24.8	24.4	25.2	25.6	23.6	24.4	24.0	24.8	25.2
	6H	25.3	26.1	25.8	26.5	27.0	24.5	25.3	25.0	25.7	26.2
	8H	26.0	26.7	26.5	27.2	27.8	24.8	25.6	25.3	26.1	26.6
	12H	26.4	27.1	27.0	27.6	28.1	24.8	25.4	25.4	26.0	26.5
12H	4H	24.1	24.9	24.6	25.4	25.8	23.8	24.6	24.3	25.1	25.5
	6H	25.5	26.2	26.0	26.7	27.3	24.7	25.5	25.3	26.0	26.5
	8H	26.0	26.6	26.5	27.2	27.7	24.9	25.5	25.4	26.0	26.6
variation of observer position											
S =	1.0H	+0.1/ -0.1				+0.1/ -0.1					
	1.5H	+0.2/ -0.2				+0.2/ -0.3					
	2.0H	+0.3/ -0.4				+0.4/ -0.5					
standard-table		BK07					BK05				
correction for luminaire		8.8					7.1				
correct glare indices for a total flux of 2915lm											

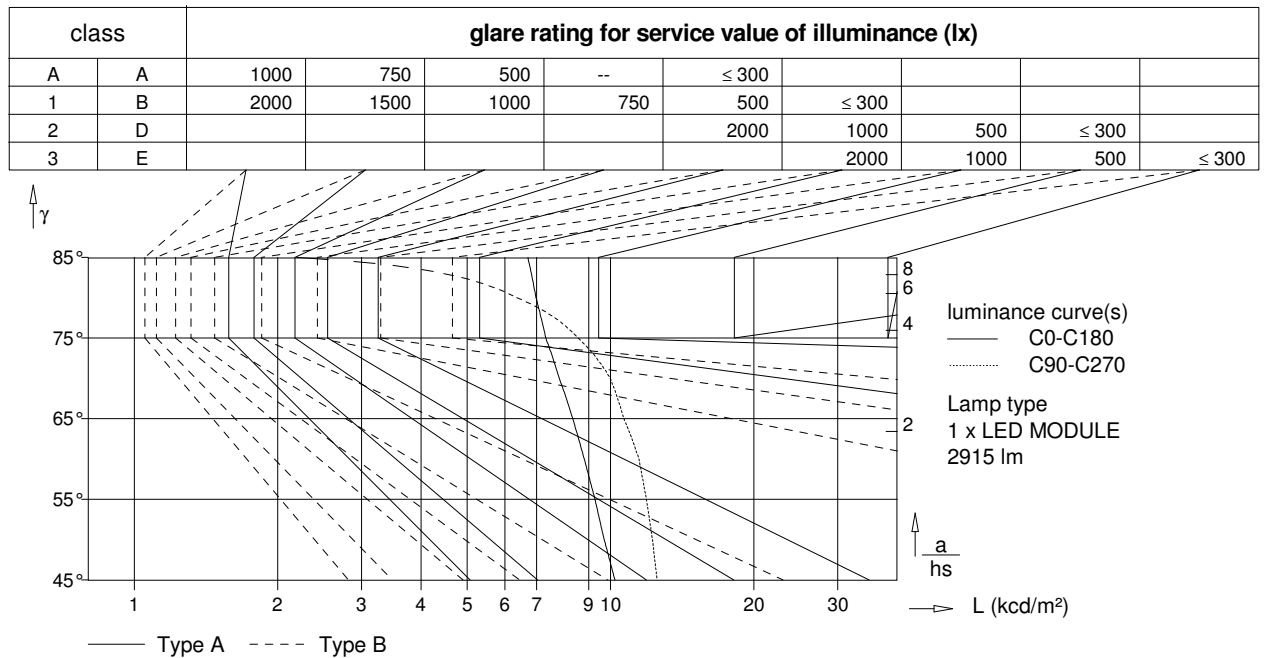


Tabelle der berechneten Leuchtdichten

gamma	C 0	C 90	C 180	C 270
45°	10209.5	12524.0	10209.5	12524.0
50°	9698.2	12250.8	9698.2	12250.8
55°	9273.8	11887.9	9273.8	11887.9
60°	8805.7	11470.1	8805.7	11470.1
65°	8331.8	10666.5	8331.8	10666.5
70°	7805.0	9986.1	7805.0	9986.1
75°	7311.9	8547.8	7311.9	8547.8
80°	6974.5	6351.3	6974.5	6351.3
85°	6705.0	2190.7	6705.0	2190.7

alle Werte in cd/m²

utilization factors / TM5											
reflection			room index								
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	57	65	73	78	85	90	93	98	101
70	30	20	49	57	65	70	78	84	88	93	97
70	10	20	44	51	59	65	73	79	83	89	93
50	50	20	55	63	70	75	81	86	89	93	96
50	30	20	48	56	63	68	76	81	84	89	93
50	10	20	43	51	58	63	71	76	81	86	90
30	50	20	54	61	67	72	78	82	85	89	92
30	30	20	47	55	62	66	73	78	81	86	89
30	10	20	43	50	57	62	69	74	78	83	87
0	0	0	40	47	54	59	65	70	74	78	81
BZ-class			5	5	5	5	5	5	5	5	5
SHRnom : 1.50						SHRmax : 1.633					

