

## **Light on board: solutions for an innovative project**

by Francesca Gagnor

Tutor: Chiara Aghemo

Co-tutors: Federica Bertolini and Cesare Griffa

The decision to master a topic so special and fascinating as the naval design comes primarily from a deep passion for the sea and the interior architecture: this interest is the main theme of my dissertation. My research focuses specifically on the motif of lighting on board the **Azimut 62S yacht**. I studied and achieved a proper illumination project for this yacht.

The approach has been driven mainly by the six-month internship that I made at the **Azimut-Benetti company**, in Avigliana. The experience of my internship allowed me to learn the design process for the yacht concept.

The development of my project was primarily justified by the desire to examine how and how much light can be a true architectural element among a yacht's interior. During my internship I studied and compared a multiplicity of boat models with advanced and innovative lighting systems (ex. LEDs). I focused especially on quality and quantity of light on board. It was important to define the requirements and needs of every different environment: the boat is, in fact, a house on water, therefore you need to use a close correlation with the domestic environment of the house. Each room (in this case cab) has its specific characteristics in addition to its needs, in terms of amount of light and light distribution. The project was developed on two aspects: the **light** and the **home automation**.

Two color versions for textiles and wall of the cabin and the saloon owner were achieved, among the original version:

- brown, reproducing the original colors of the boat.
- cream, with far more light and neutral shades.

This is useful to see how and how much materials may affect the distribution and the intensity of light in a room.

As for the light sources, three different versions and distributions of light were tested through the Lightscape, a necessary software to perform the lighting calculation and the final virtual representation of the effect:

- **Indirect: light halogen**
- **Direct: light fluorescent**
- **Direct: light LEDs.**

The new solutions have been first of all compared with the existing design, listing and observing the benefits of the new intervention. Then all values obtained on grid computing have been checked with the relevant EN 12464-1 that defines the levels of illumination in internal work spots.

L'AZIMUT 62S: LA LUCE A BORDO  
IL PROGETTO DELLA LUCE

Lower deck\_CABINA ARMATORE\_Versione brown\_LUCE LED

62S



**MATERIALI**

<p>Legno: wenge Lucezza: 0.53 Rifrazione: 1.11 Riflessione: 0.23</p>	<p>Tessuto: tappezzeria Rifrazione: 1.00 Riflessione: 0.44</p>	
<p>Tessuto: pannellatura perimetrale Rifrazione: 1.00 Riflessione: 0.62</p>	<p>Tessuto: Cuscini e divanetti Rifrazione: 1.00 Riflessione: 0.78</p>	
<p>Tessuto: moquette Rifrazione: 1.00 Riflessione: 0.53</p>	<p>Tessuto: Cuscini porte Rifrazione: 1.00 Riflessione: 0.42</p>	
<p>Vetreria Lucezza: 0.35 Rifrazione: 1.50 Riflessione: 0.75</p>	<p>Acciaio Lucezza: 0.66 Rifrazione: 0.98 Riflessione: 0.83</p>	<p>Tessuto: pannellature porte Rifrazione: 1.00 Riflessione: 0.66</p>



**LUCI**

Lampada: Eros Skin Downlight  
Sorgente: LED  
Flusso luminoso: 1200 lumen  
Impiego: domestico, ufficio  
Materiali: fusione di alluminio, nero verniciato a polvere, riflettore alluminio anodizzato lucido.

Lampada: Eros T-16  
Sorgente: lampada fluorescente  
Flusso luminoso: 4400 lumen  
Impiego: domestico, ufficio  
Materiali: alluminio verniciato a polvere

Lampada: Lampada da tavolo  
Sorgente: lampada alogena  
Flusso luminoso: 8700 lumen  
Materiali: struttura in alluminio e rivestimento in tessuto chiaro

Owner's cabin with LED's direct light\_materials, lighting and rendering

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**NORMATIVA EN 12464-1**

	Em	UGR	Ra
ATRIO, INGRESSO	100	22	80
SCRIVANIA	900	19	80
CONVERSAZIONE, PRANZO	300	22	80
LETTURA	900	22	80
CUCHIA	900	22	80
GUARDAROGA	200	25	80

**VALORI VERIFICATI**  
griglia di calcolo: 81 punti verificati

$E_{m} = 450 \text{ lux}$

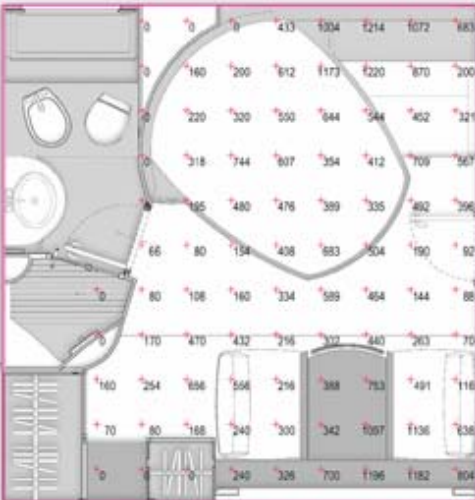
$U = \frac{E_{min}}{E_m} = 0.15$



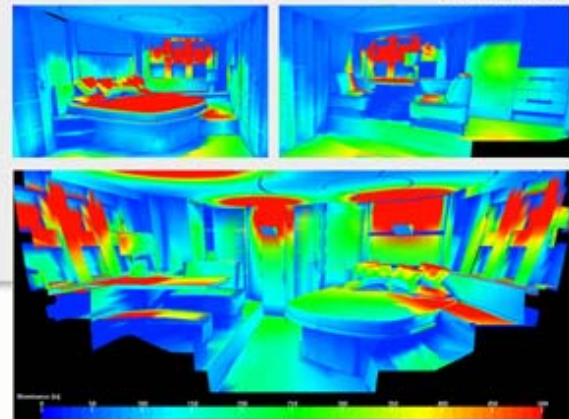
COLLOCAZIONE APPARECCHI ILLUMINANTI

- n° 2 lampade da tavolo  
Sorgente Lampada alogena
- n° 8 lampade Eros Skin Downlight  
Sorgente Lampada LED
- n° 2 lampade Eros T-16  
Sorgente Lampada fluorescente

GRIGLIA DI CALCOLO\_40x40 cm



DISTRIBUZIONE LUX



Owner's cabin with LED's direct light\_lux distribution in colour scale and grid computing

The second part of the project was devoted to the possibility of including a ship-board instrumentation complying with the principles of home automation. Today one of the most debated topics is indeed the automation of electronic components and peripherals on-board safety system and entertainment.

For each environment we identified a set of necessary requirements and needs to ensure comfort and safety to users. And, in particular, it was necessary to divide them into four groups:

- **Lighting**
- **Safety**
- **Entertainment**
- **Comfort.**

After defining the functions, we proceeded to design the visual interface with the user: it was necessary to draw a proper symbology that could be easily understood by any member of the crew. Using touch-sensitive keys of a touch screen it's possible to access multiple functions that control devices, it's also possible to customize the cab and make it warm and safe.



Home Automation\_owner's cabin

For further information, e-mail:

Francesca Gagnor: [francesca.gagnor@gmail.com](mailto:francesca.gagnor@gmail.com)