



**INTERNATIONAL  
YEAR OF LIGHT  
2015**

## Sviluppo di prodotti efficienti per l'illuminazione

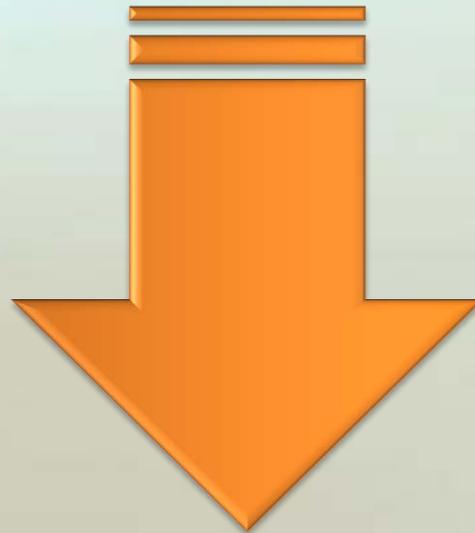
- OLED
- LED + controlli, interazione luce-uomo
- Lumière



INTERNATIONAL  
YEAR OF LIGHT  
2015

## Sviluppo di prodotti efficienti per l'illuminazione

- LED + controlli, interazione luce-uomo



## I collaboratori universitari

Poli. Milano. Dip. Design

Univ. Milano. Dip. Informatica e  
Comunicazione

Univ. Sapienza Roma. Dip. DIAEE

Univ. Napoli Federico II

## I principali partner

ASSIL

Assoluce

Crosspoint

Harvard Engineering

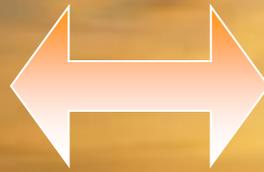
NERI

Oxytech...

# Sistema in evoluzione

## Esigenze (anche potenziali):

- sicurezza
- comfort visivo
- estetica
- aspetti non visivi...

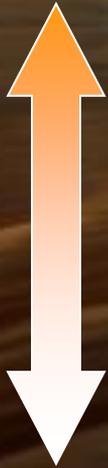


## Specifiche:

- potenza
- resa cromatica
- flusso luminoso
- temperatura di colore...

## Prescrizioni

- Sicurezza
- Prestazioni minime..



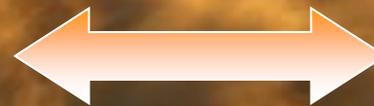
Efficienza  
energetica



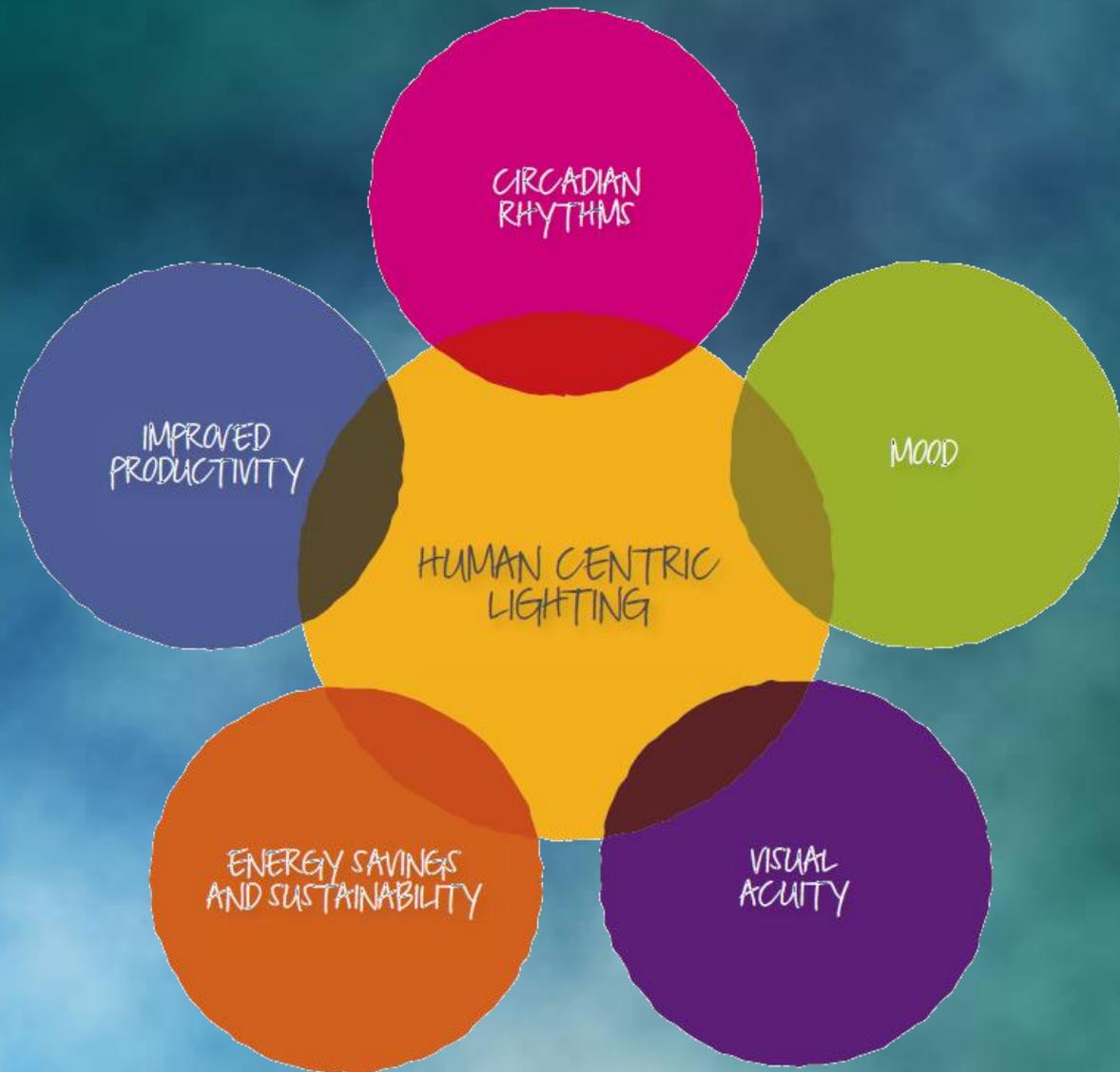
## Norme tecniche.

### Indicazioni su:

- illuminazione pubblica
- posti di lavoro
- ...



Componenti del  
sistema di  
illuminazione e  
controlli

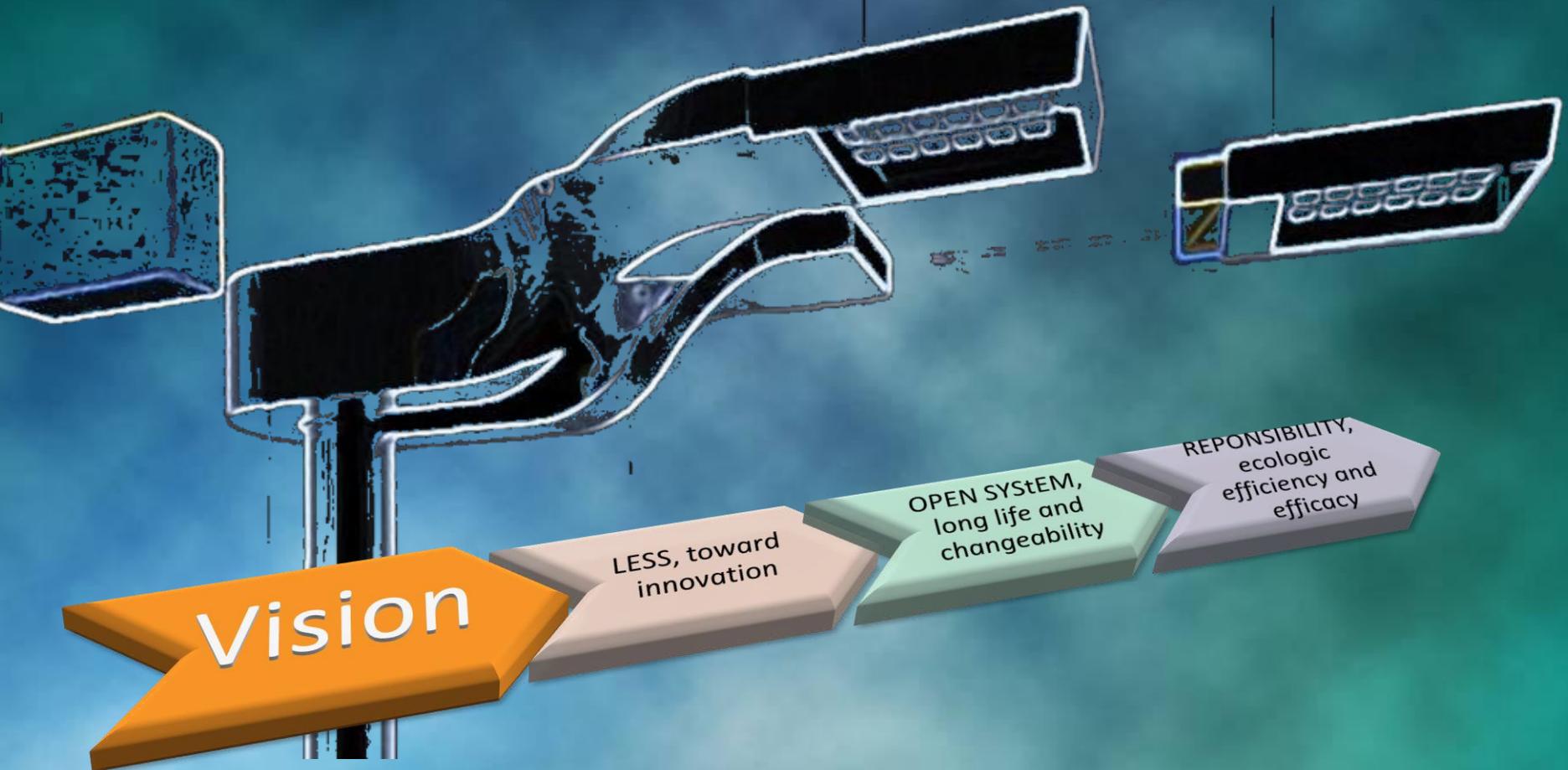


- The start: historic and urban centre in a small municipality, typical Italian situation:
  - lighting performance requirements
  - possibile photometric distributions
- Public spaces have to be pleasant places for people both during day and night time: therefore not only safety and functionality, but also quality, comfort, aesthetics, taking into account environment and energy savings

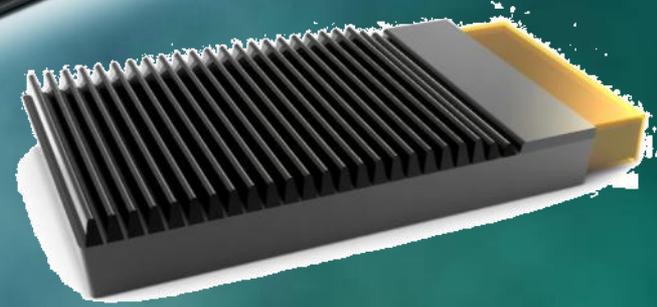
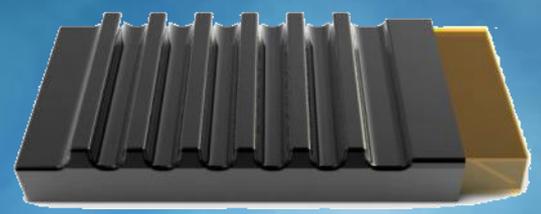


# Un po' di storia... Design by components...

- The classic luminaire is fragmented into modules, which may be recombined and composed
- different photometric curves according to specific application requirements
- different aesthetic-formal solutions for the final luminaire



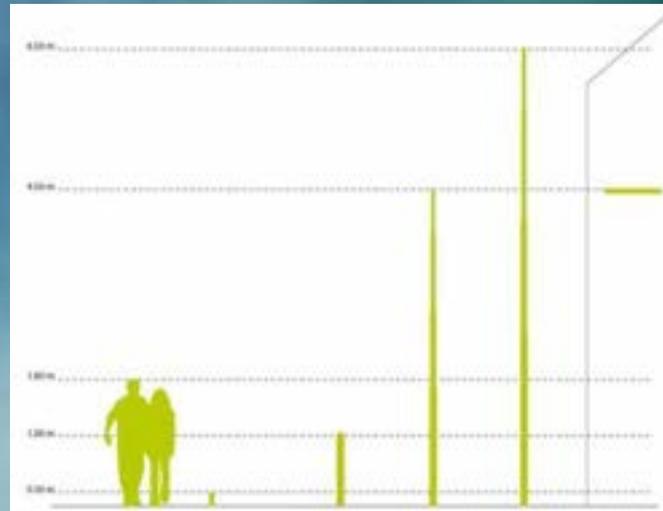
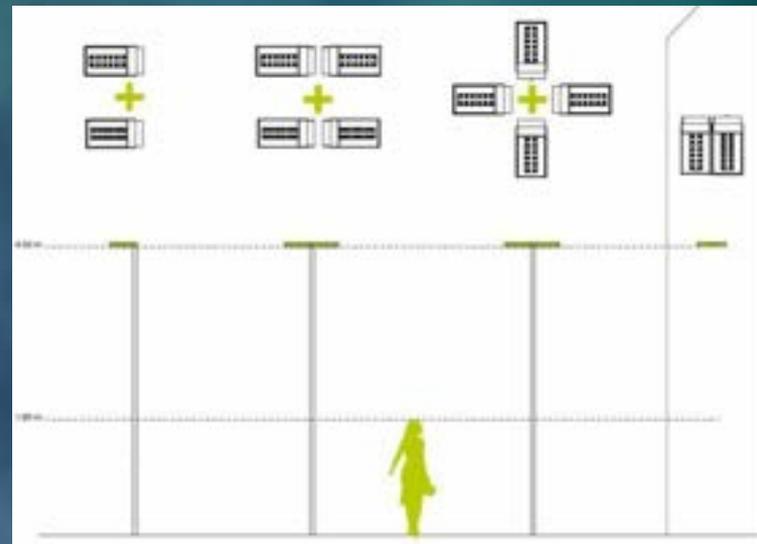
Un po' di storia... i primi prototipi



Un po' di storia... Modularità applicata

# PLUS

Public Lighting Unit System



*street  
lighting*

*lighting of  
squares, frames*

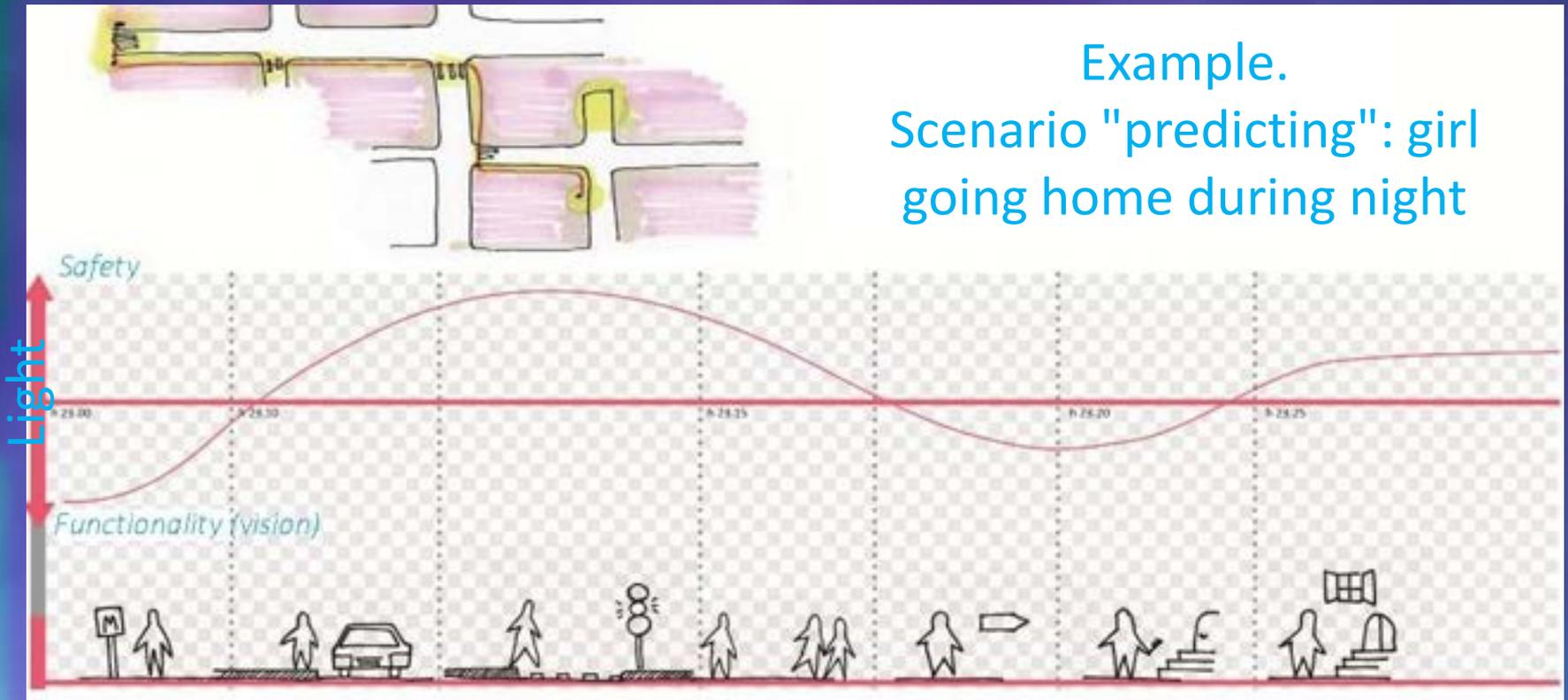
*bollards  
paths and light  
guide*





PLUS SENSE

Example.  
Scenario "predicting": girl  
going home during night



Un po' di storia... Il secondo prototipo



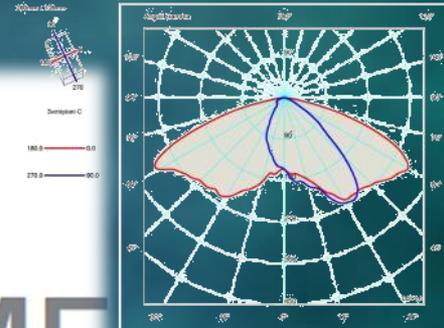
PLUS SENSE





# PLUS ME

Public Lighting Unit System  
for ME street lighting categories

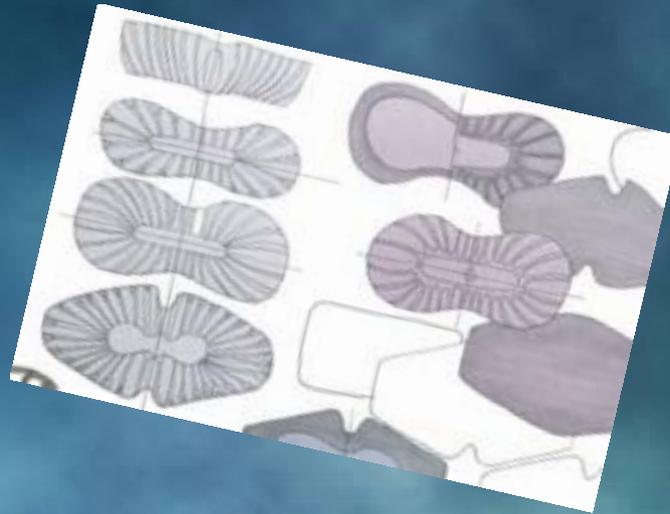
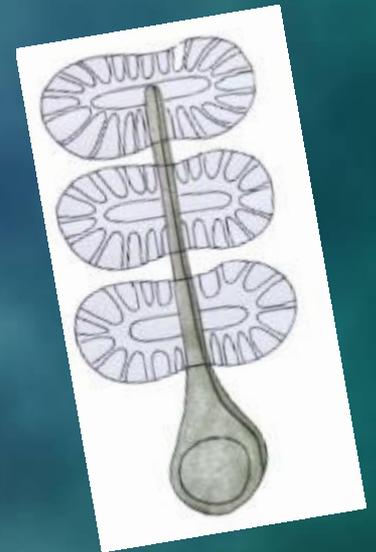


- +** **ELSE & LESS**, trasformazione formale con riduzione di materiale
- +** **OPEN SYSTEM**, longevità di sistema tramite modularità
- +** **RESPONSIBILITY**, efficienza ed efficacia

Un po' di storia... Ispirazioni per le strade di traffico

# PLUS ME

Public Lighting Unit System  
for MOU street lighting categories



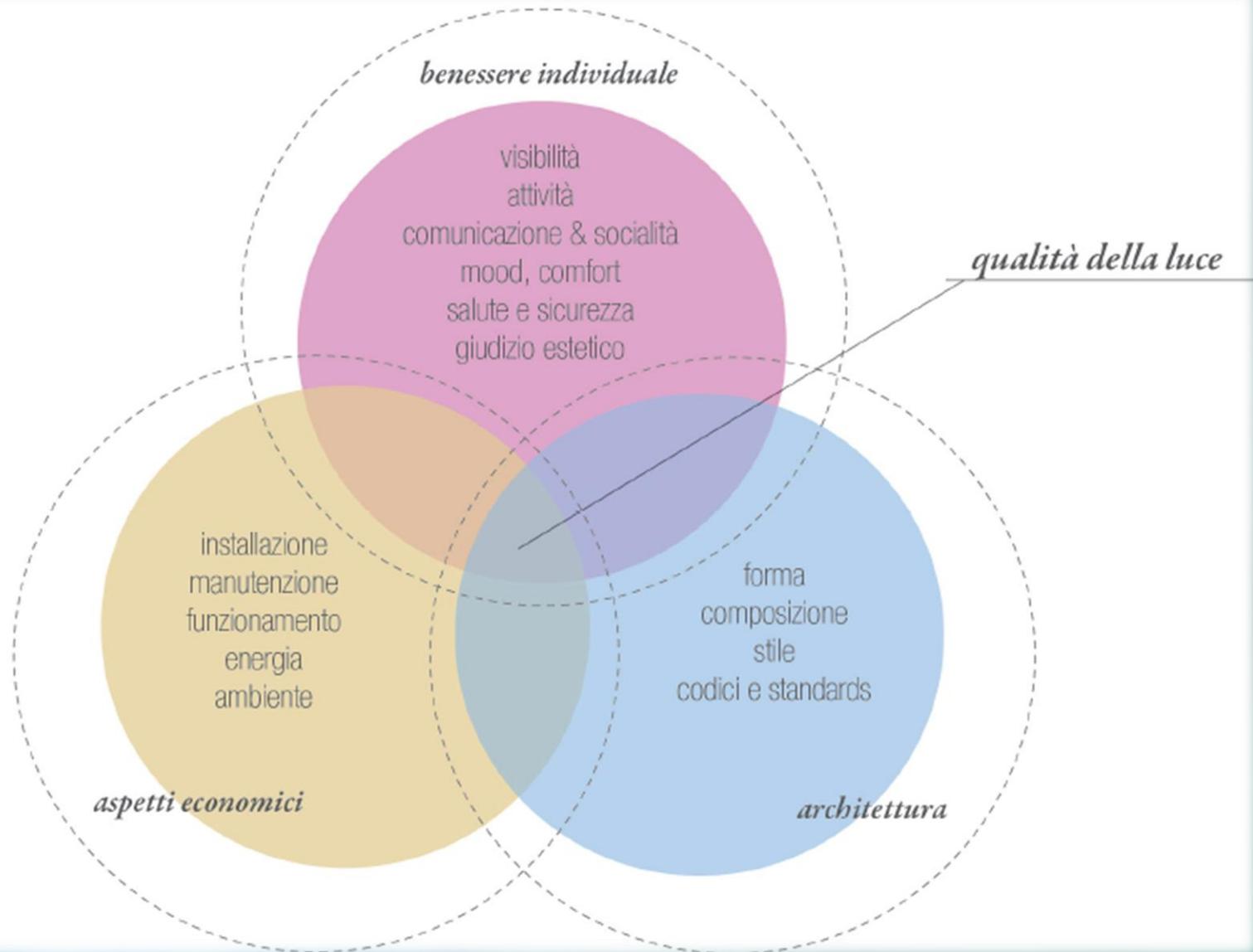


# Prototipo di PLUS ME singolo modulo

+++  
PLUS ME

Public Lighting Unit System  
for MUI street lighting categories





Dall'ufficio STEREOTIPATO all'ufficio ANTROPIZZATO

Dall'ufficio STEREOTIPATO all'ufficio ANTROPIZZATO

### **BENESSERE E COMFORT**

limitazione dell'abbagliamento, resa cromatica, bianco uniforme

### **RESPONSABILITA' E SOSTENIBILITA'**

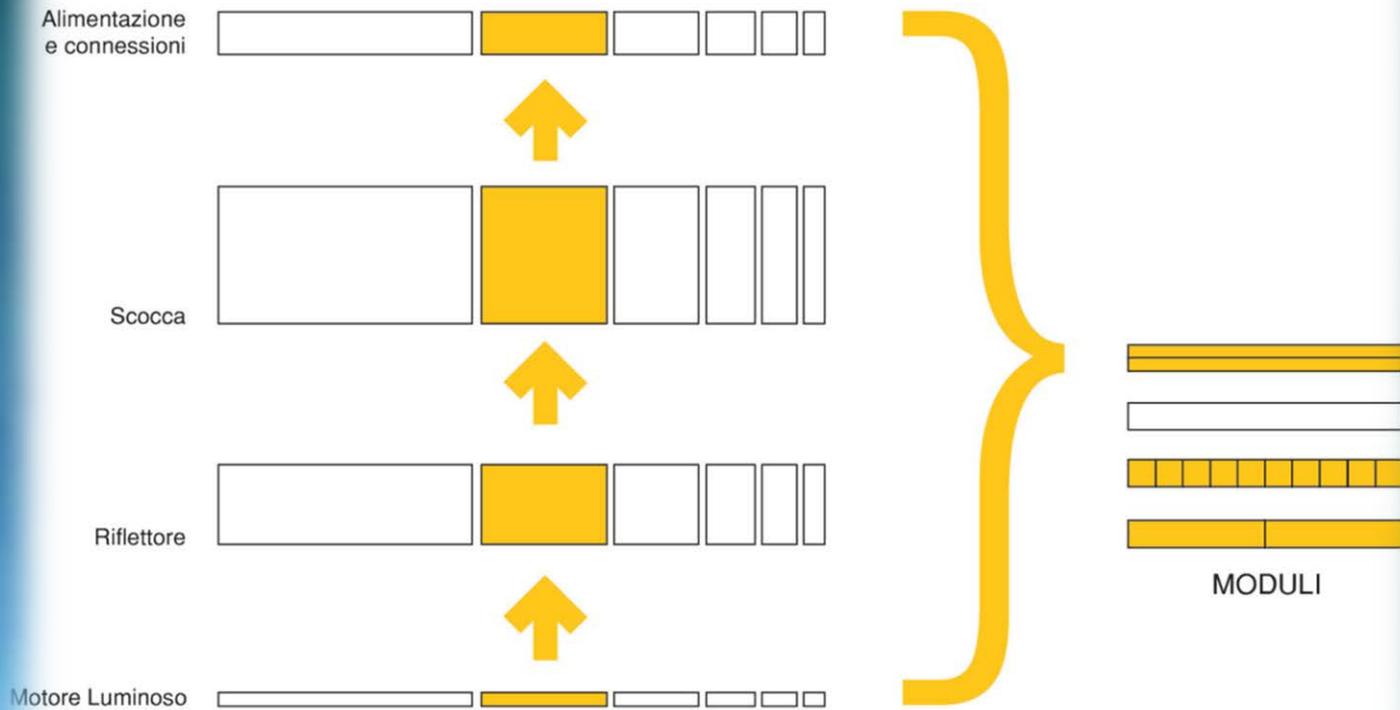
rendimento dell'apparecchio (LOR), efficienza energetica, LCA Design for Disassembling

### **ADATTABILITA' ED ESPERIENZA**

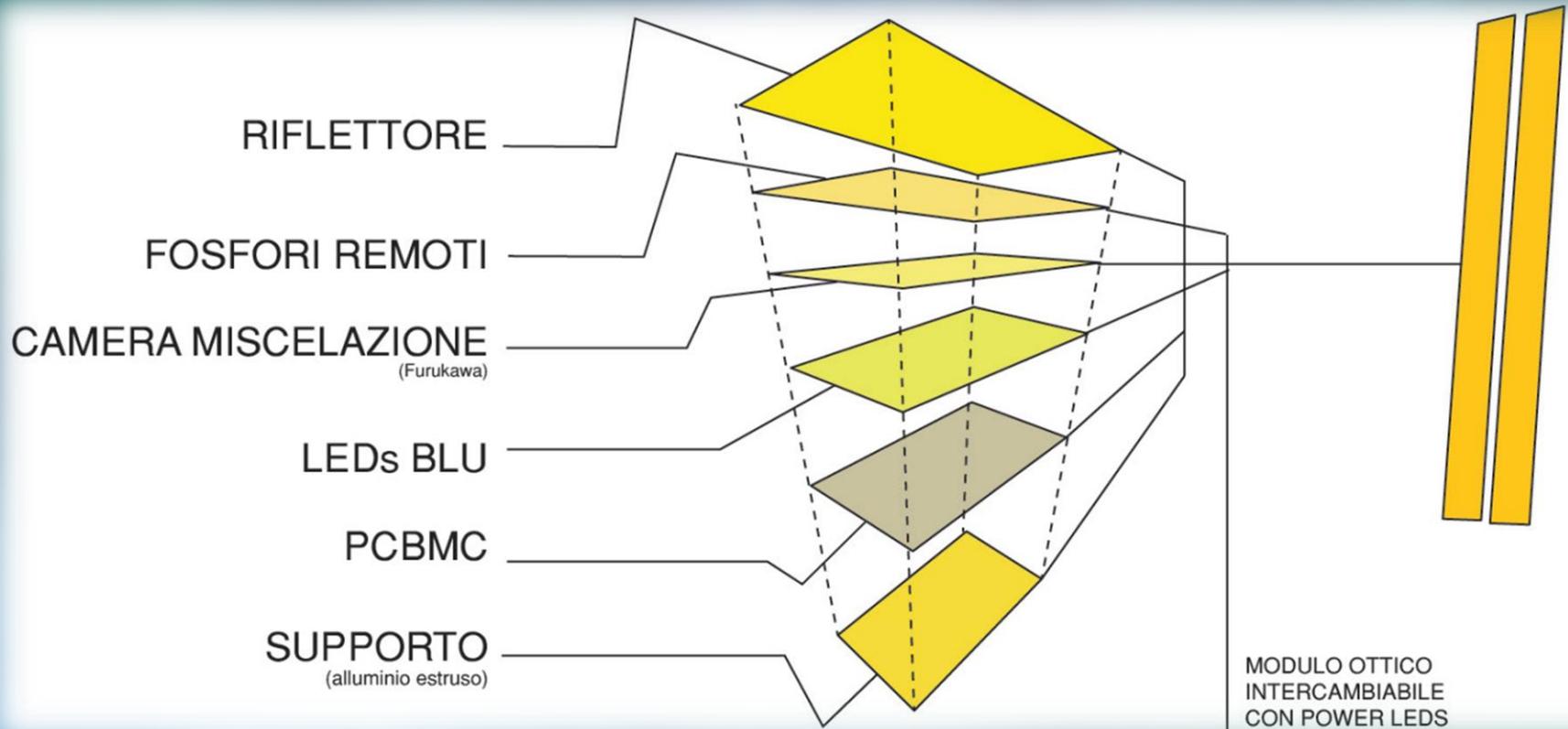
bianco dinamico, illuminazione regolabile, apparecchio modulare

Human Centric Lighting

# Dall'ufficio STEREOTIPATO all'ufficio ANTROPIZZATO

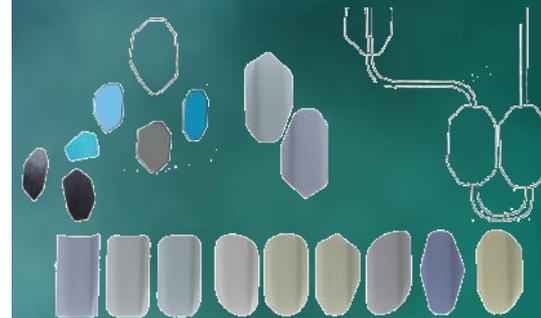
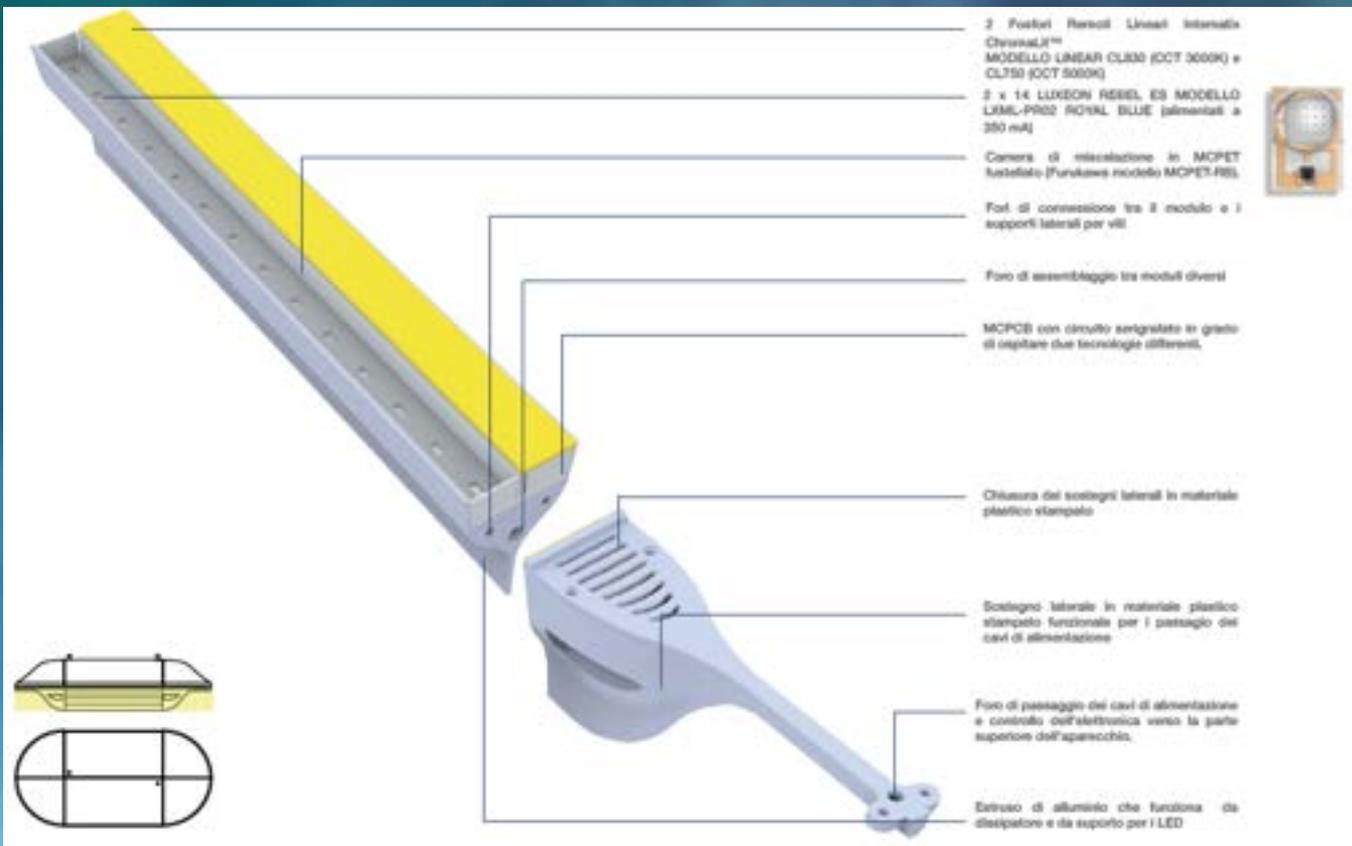
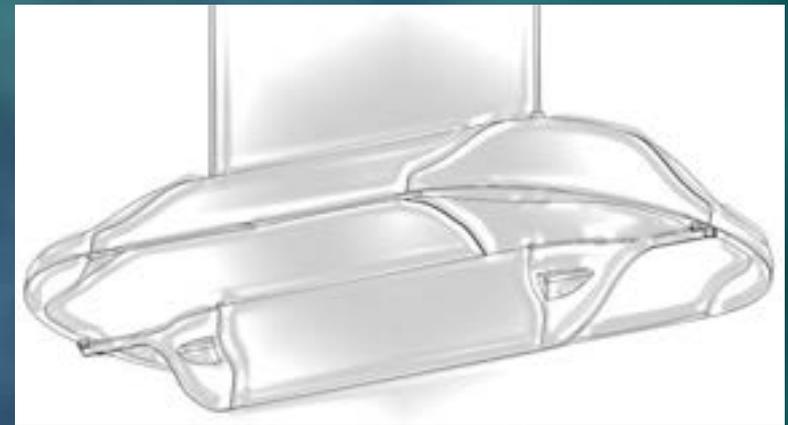


# Dall'ufficio STEREOTIPATO all'ufficio ANTROPIZZATO



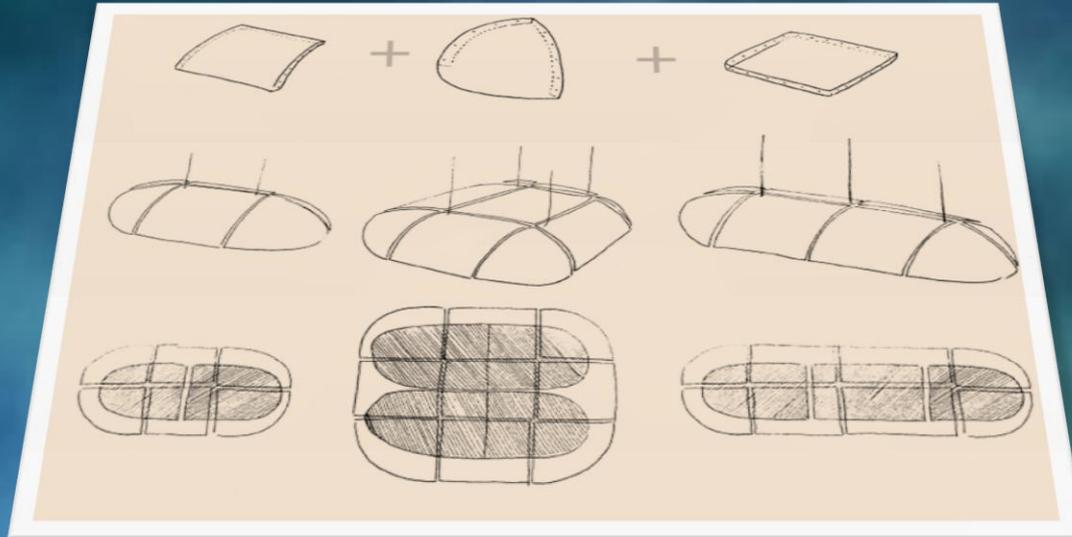
{ *coeelo* }

COMfortable EFFicient EXPERiential Lighting for Offices



{ coeelo }

COMfortable EFFicient EXPERiential Lighting for Offices



BISLUNGO



QUADRIO



60X60  
(semi incasso)

# Illuminazione in ambiente industriale

> DESIGN L@W

> ASSEMBLAGGIO

elementi standard e  
prototipi in un  
illuminatore funzionante

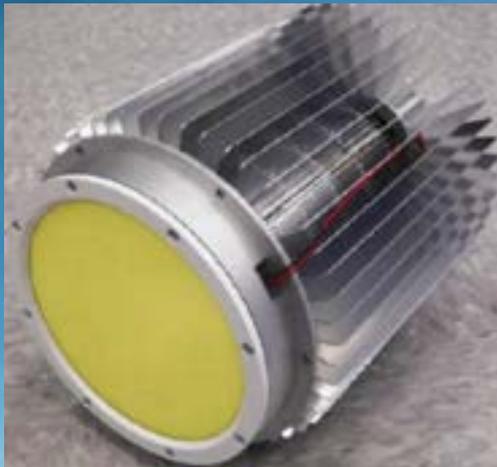
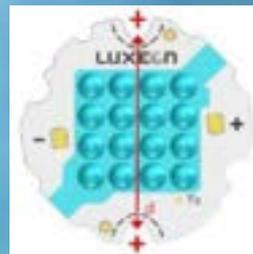
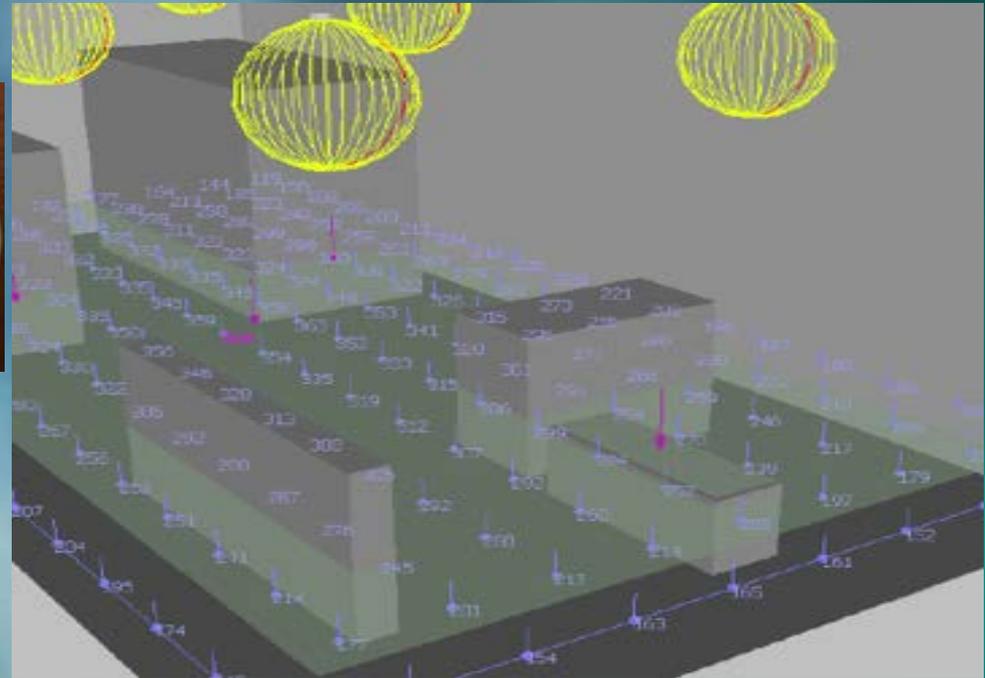
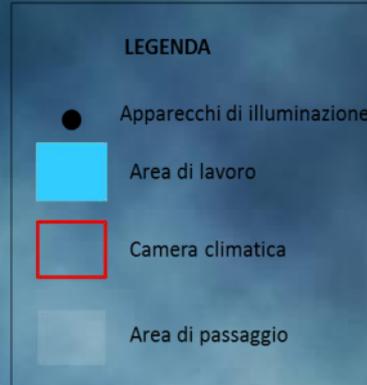
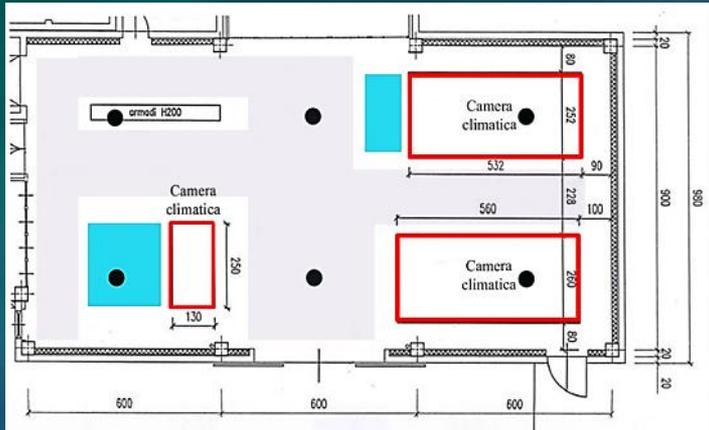


LIGHTING DESIGN NELL'INDUSTRIA L@W - LIGHT@WORK [Politecnico di Milano - Dipartimento di Design - Laboratorio Luce]

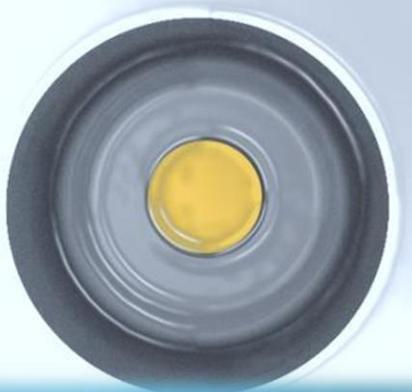


# HumbleBee

illuminazione di tipo industriale: realizzazione sperimentale edificio ENEA Ispra









HumbleBee



Il sistema di movimentazione apparecchi - gennaio 2015

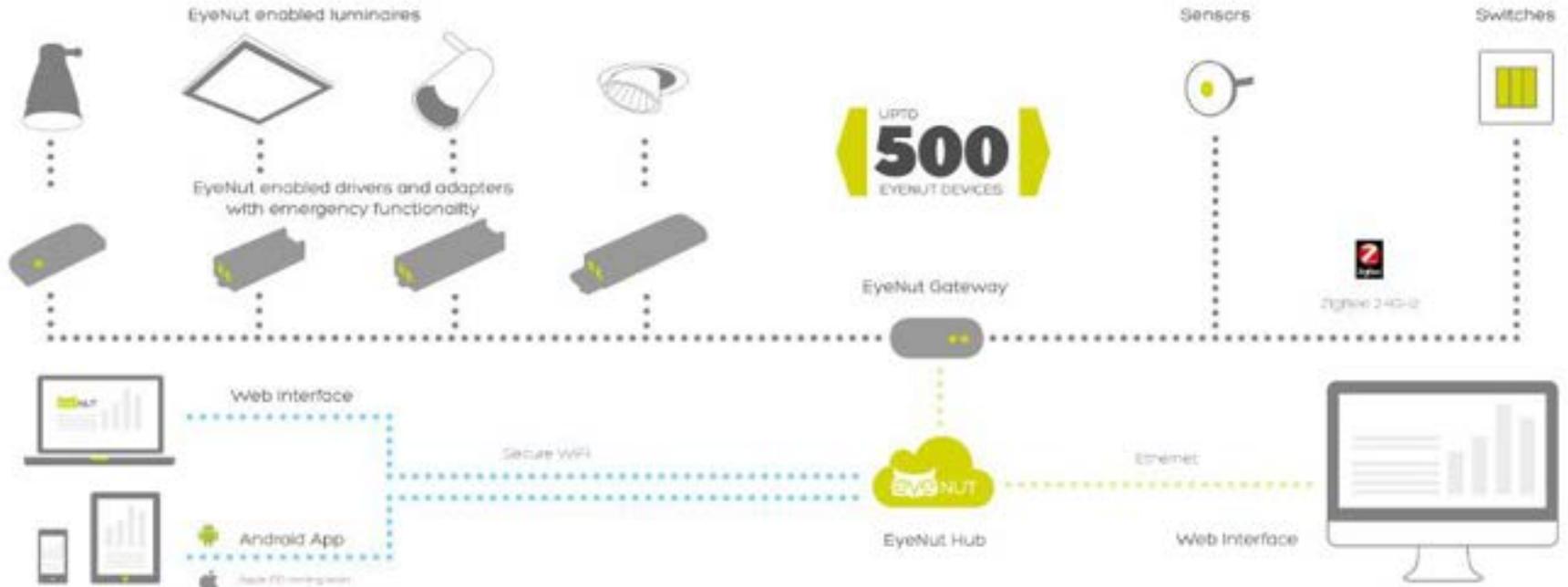
BROUGHT TO YOU BY

# Harvard

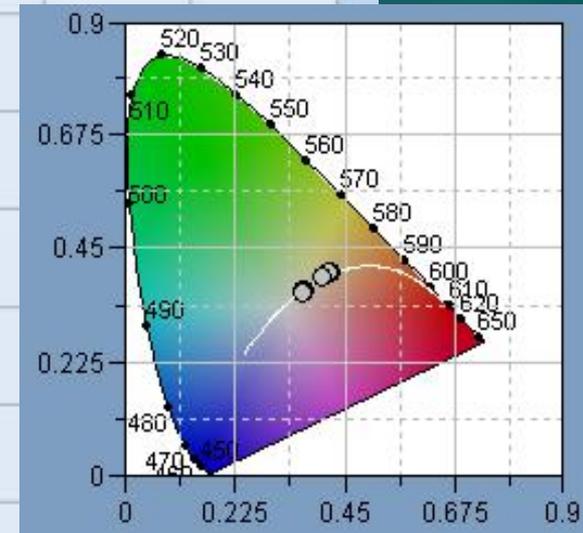
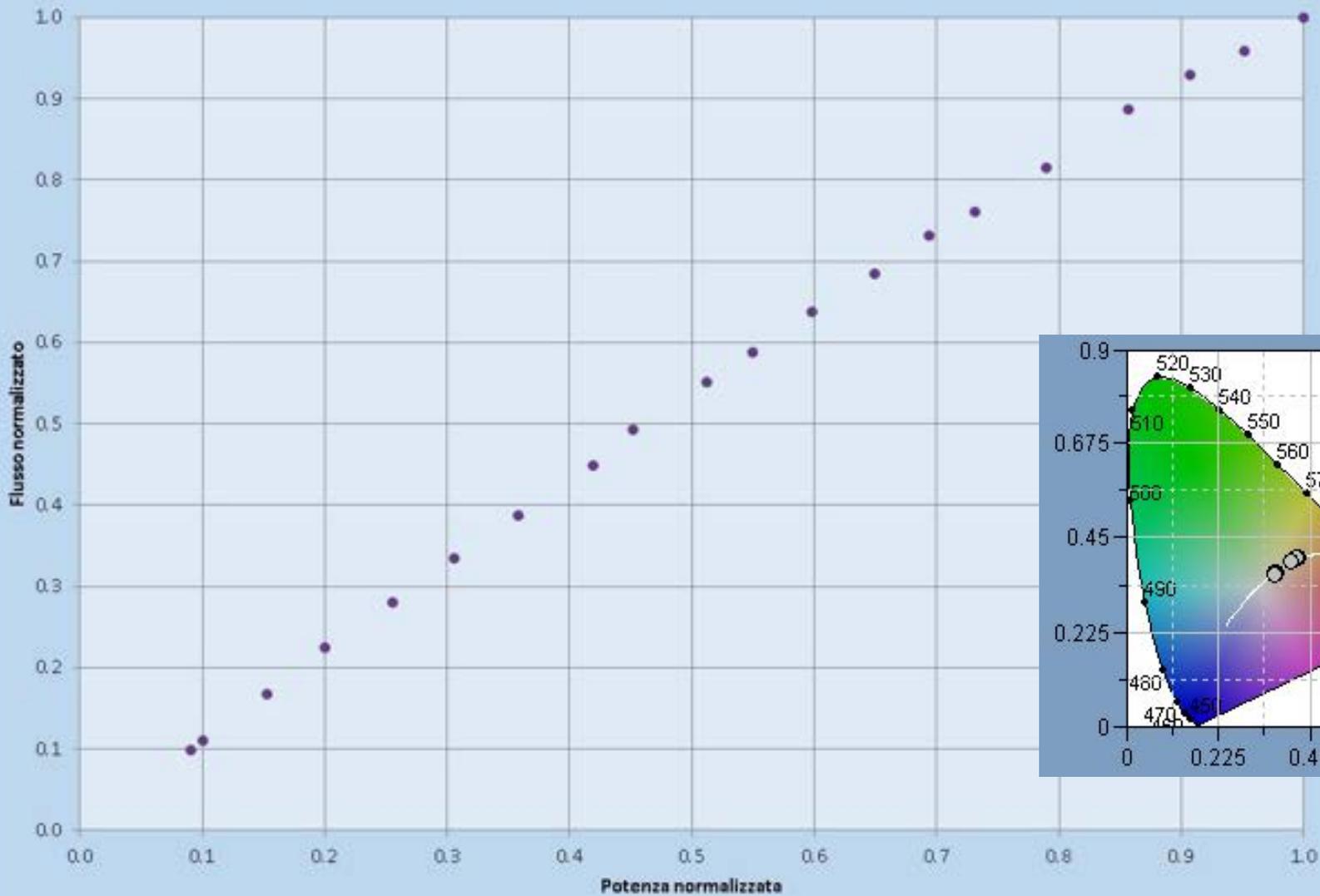
Smarter thinking for the lighting industry...



INGENIOUS CONTROL

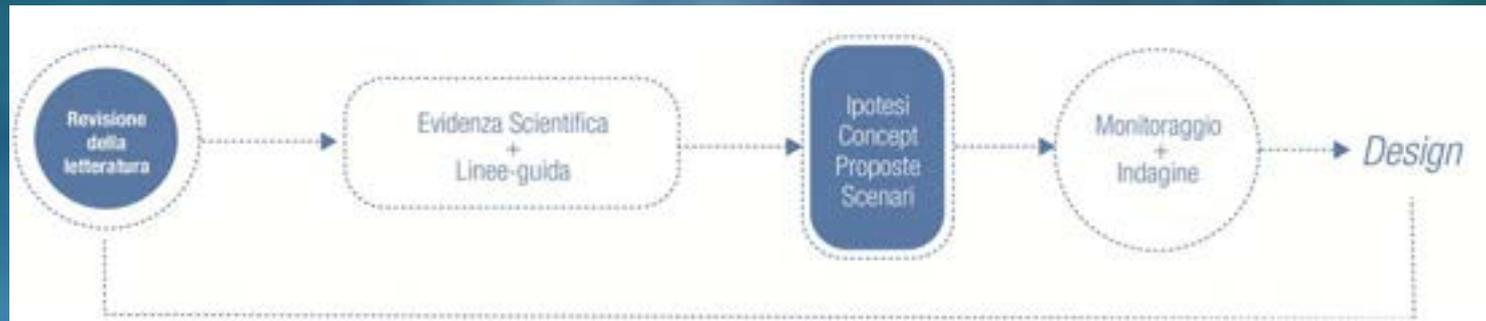






# LIGHTING DESIGN FOR WELLBEING

## Illuminazione domestica per la popolazione che invecchia



## LIGHTING : Le regole del gioco



Direttive Etichettatura energetica ed Ecodesign

- regolamenti nuovi
- studi preparatori nuovi (smart appliances, sistemi illuminazione, nuovo prodotti illuminazione)
- sorveglianza mercato

Standardizzazione: LENI (edifici), stradale, gallerie, colore, posti di lavoro..



## Valutare la qualità della luce

- test di percezione visiva
  - resa dei colori legata al contesto
- contrasto
- test per valutare influenza sulle capacità cognitive
- aspetti psicofisiologici
- integrazione luce naturale
- ...

- Università Milano Dip. Informatica
- Università Roma1 Sapienza Dip. DIAEE
- Università Napoli Federico II

## Valutare la qualità della luce



Che succede a livello dell'occhio ? - luglio 2015. Test paralleli Napoli –(Università) Ispra (ENEA)