



"make your white"

light+building 2014

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#### **HD Retina Led**

HD Retina LED comes from the "unexpected" idea of reversing the usual concept of lighting.

HD Retina LED is a high definition LED that saturates either warm and cold colours at the same time, making them pleasant on the human eye and giving them their natural colour. This is why this type of LED is suitable for different applications, when different colour objects need to be illuminated all together, like in general lighting.

The HD Retina project develops the intuition of Giorgio Martini, Deputy Chairman of the company: "it's not so important to see how to light up things in the best way, but to study how the human eye build colors in our mind".

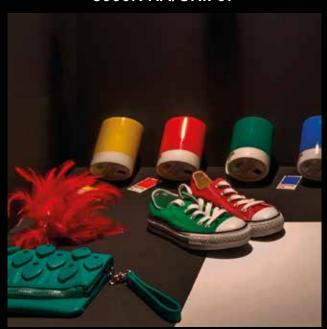
The innovation has been, indeed, a completely different prospective: a colour is not a physical characteristic of objects, but it is the visual perception coming from the light which illuminates them. On the other hand, when we look at something and we think about it in our memory, the same object will always be associated with a single, unique colour, which we identify as familiar and perceive as its "real", or "ideal" colour.

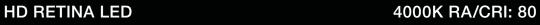
HD Retina LED is a technology getting colours matching the ones memory associates with familiar objects, with an excellent balance of colours saturation and fidelity.

#### 3000K RA/CRI: 97



3000K RA/CRI: 97



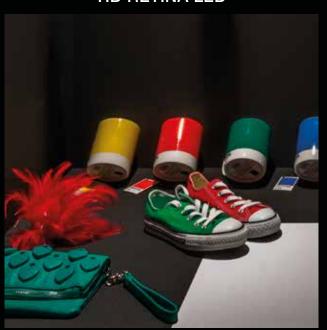






**HD RETINA LED** 

4000K RA/CRI: 80



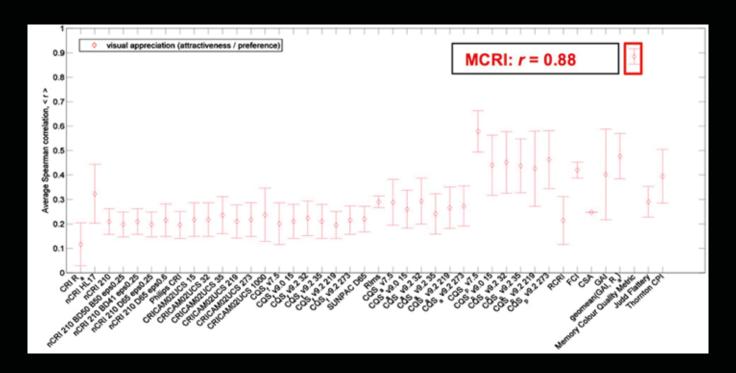


### A MEMORY COLOUR RENDITION METRIC, RM

Kevin Smet

Light and Lighting Laboratory, Catholic University College Ghent, Belgium - KU Leuven, Postdoctoral Fellow of Research Council Flanders

The impact of the light source spectrum on the colour appearance of objects is traditionally quantified by the colour rendering index Ra (CRI) developed by the International Commission on Illumination (CIE). Colour rendition is assessed as fidelity with a CIE reference illuminant: the smaller the colour differences between a set of coloured cards illuminated by the test source and its CIE reference illuminant, the higher the fidelity (resemblance) and thus the higher the Ra value. Although such a colour difference based metric is required for many professional applications - colour reproduction, printing and quality control - several visual studies(1-7) with fluorescent sources and light-emitting diodes have shown that it is generally not well suited to predict the more subjective aspects of colour quality such as visual appreciation or naturalness, because the CIE reference illuminant need not be the most optimal source (4, 8). In light of this failure of the CIE Ra index several alternative metric have been proposed over the past years. Although most of them are based on some sort of comparison with a reference illuminant, an alternative approach would be to directly reference to the ideal chromaticities of familiar objects. Such an approach should also correspond more closely to the way people judge the colour quality of light sources in everyday life as nobody walks around with a reference source to be able to judge the colour quality of the lighting in a room. Colours of object often look "wrong" or "distorted" when they are not what we expect or want them to be (9, 10). Based on the straightforward assumption that the colour quality of a light source increases when object colours are rendered more closely to what is expected, a memory colour quality metric was developed that is able to assess the colour quality of a white light source in terms visual appreciation: the MCRI or memory colour rendition index, Rm (MCRI) (11, 12). The memory colour rendition index has been validated in two recent scientific publications (12, 13) using observer ratings from several published visual experiments (3-5, 7, 14-18). The memory colour rendition index Rm was found to correlate highly (r = 0.88, p < 0.0001) with the visual appreciation of white light sources. In addition, the MCRI was found to be significantly better at it than several other published colour rendition and colour quality metrics. The results are illustrated in Figure 1.



#### WHAT IS COLOUR?

The "unexpected Martini philosophy" for lighting designers

HD RETINA LED® is the first light source COB (chip on board) developed and patented by a light fixtures manufacturer: Martini MAIN FEATURES:

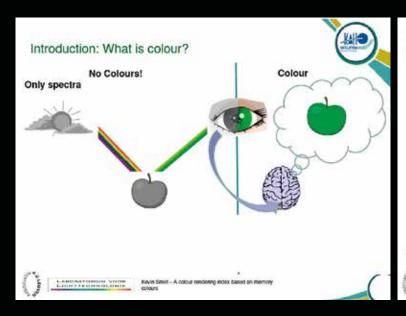
It's a pleasant light rendering the true colors of the objects. Through an innovative technology, the light source gives back the chromatic information which are inside the human memory (Figure 1).

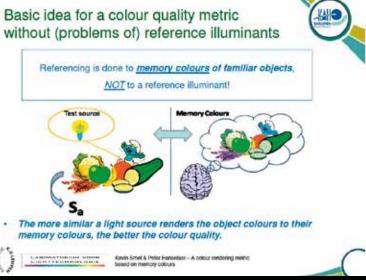
It is a light source which enhances the colors collected by the human mind through different experiences. For this reason it is a light source suitable for several applications, in particular for all those situations where it is needed to light up, all together, several objects having different colors, but getting a perfect and balanced colors saturation.

It comes from a revolutionary patented light spectrum which saturates – at the same time and with a perfect balance – either warm and cold colors. Colors are not made with reference to the "old" metrics related to fluorescent and halogen light source, but they are made in such a way to reproduce – as much accurately as possible – the human eye memory and perception, based on familiar objects (Figure 2).

It gets a score based on the MCRI Index (memory colour rendering index), a particular index considering not only the colors saturation, but also colors memory perceptions made by the human mind.

The perfect saturation either of warm and cold colors is surrounded by a "true white" – keeping its natural and clear identity, which gives and enhances such an "unexpected and pleasant" visual comfort.





Following the success of HD Retina Led after last April's launch, the technology has been tested and finally used in a number of different sectors, like the world of "Art and Museums". Art galleries need to meet different criteria when selecting lighting fixtures, above all colour rendering - in terms of the faithful reproduction of the "real" colours of the artworks rather than in terms of CRI, CQS or other traditional metrics. In such a context HD Retina Led has shown amazing results - which Giorgio Martini (the inventor) himself did not expect. HD Retina Led meets, as well, the need for a user-friendly management system which does not require continuous adjustment and gets an optimal balance between saturation and colour fidelity and the paintings shown at Lighting + Building 2014 are a real proof of that.





## HD Retina led evolution

Usually, it is said the average human eye cannot distinguish colour differences falling in a colour space narrower than a 2 or 3-step MacAdam ellipse, but this is true only when settings and objects are individually watched, one by one. In reality, human eye can even see differences smaller than 1-step Mac-Adam whenever we can compare different settings (scenes) all together and, actually, each situation will give us different sensations and a different interaction with our mind. Furthermore, it is important to draw the attention to another prospective: while the market is now giving more attention to the colours rendering, we have not to forget the visual comfort is deeply affected by the general light generated in the "achromatic ambience" by the "white light".

This means the "human sensations", which become "purchasing preferences" are strongly influenced either by colours and the "white colour": "achromatic" itself as we said before, "white colour" can get a different hue according to different light sources.

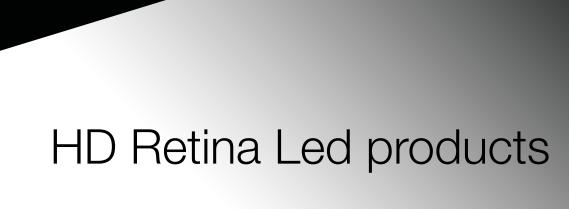
Giorgio Martini and his team made an amazing and long study about the "white colour" and they managed to prove in a very evident way the quality of a light source cannot be only tested in terms of colours saturation and fidelity, but it is directly related how the same (light source) can get the white colour achromatic and comfortable at the same time, generating what we call "sensory white".

Actually, whenever we have different settings with colours all saturated at the same level, our mind can definitely distinguish white light deviations smaller than 1 step MacAdam ellipse. These deviations will match with specific preferences which are the result of cultural differences, but – moreover – of different sensations given by the material the white objects are made of.

HD Retina Led evolution – "make your white" – is the result of this research path and it joins HD Retina Led to a new device that gives the possibility of making a personal "sensory white", getting a very important role in the materials ethic and in all what it means, today, from a business point of view.

"make your white"





# MILO L — D design: Lapo Grassellini



Power	Φ [lm]	Beam	Code
25W	1600	16°	33210HD
25W	1600	23°	33211HD
25W	1600	36°	33212HD
25W	1600	64°	33213HD
25W	1600	74°	33290HD
50W	3300	17°	33237HD
50W	3300	27°	33238HD
50W	3300	39°	33239HD



Power	Φ [lm]	Beam	Code
25W	1600	16°	33218HD
25W	1600	23°	33219HD
25W	1600	36°	33220HD
25W	1600	64°	33221HD
25W	1600	74°	33292HD
50W	3300	17°	33272HD
50W	3300	27°	33273HD
50W	3300	39°	33274HD





Power	Φ [lm]	Beam	Code
25W	1600	16°	53990HD
25W	1600	23°	53991HD
25W	1600	36°	53992HD
25W	1600	64°	53993HD
25W	1600	74°	54025HD
50W	3300	17°	54009HD
50W	3300	27°	54010HD
50W	3300	39°	54011HD











25W         1600         16°         33226HD           25W         1600         23°         33227HD           25W         1600         36°         33228HD           25W         1600         64°         33229HD           25W         1600         74°         33294HD           50W         3300         17°         33249HD           50W         3300         27°         33250HD	Power	Φ [lm]	Beam	Code
25W         1600         36°         33228HD           25W         1600         64°         33229HD           25W         1600         74°         33294HD           50W         3300         17°         33249HD	25W	1600	16°	33226HD
25W 1600 64° <b>33229HD</b> 25W 1600 74° <b>33294HD</b> 50W 3300 17° <b>33249HD</b>	25W	1600	23°	33227HD
25W 1600 74° <b>33294HD</b> 50W 3300 17° <b>33249HD</b>	25W	1600	36°	33228HD
50W 3300 17° <b>33249HD</b>	25W	1600	64°	33229HD
	25W	1600	74°	33294HD
50W 3300 27° <b>33250HD</b>	50W	3300	17°	33249HD
	50W	3300	27°	33250HD
50W 3300 39° <b>33251HD</b>	50W	3300	39°	33251HD





Trim

Power	Φ [lm]	Beam	Code
25W	1600	16°	36386HD
25W	1600	23°	36387HD
25W	1600	36°	36388HD
25W	1600	64°	36389HD
25W	1600	74°	36390HD
50W	3300	17°	36400HD
50W	3300	27°	36401HD
50W	3300	39°	36402HD

**€** □ IP40 **F** 

Power	Φ [lm]	Beam	Code
25W	1600	16°	53998HD
25W	1600	23°	53999HD
25W	1600	36°	54000HD
25W	1600	64°	54001HD
25W	1600	74°	54027HD
50W	3300	17°	54018HD
50W	3300	27°	54019HD
50W	3300	39°	54020. HD



### MARTINO L HD

design: Lapo Grassellini





track pendant

Power	Φ [lm]	Beam	Code
25W	1600	16°	33820HD
25W	1600	23°	33821HD
25W	1600	36°	33822HD
25W	1600	64°	33823HD
25W	1600	74°	33296HD
50W	3300	17°	33830HD
50W	3300	27°	33831HD
50W	3300	39°	33832HD



Power	Φ [lm]	Beam	Code
25W	1600	16°	53850HD
25W	1600	23°	53851HD
25W	1600	36°	53852HD
25W	1600	64°	53853HD
25W	1600	74°	54029HD
50W	3300	17°	53863HD
50W	3300	27°	53864HD
50W	3300	39°	53865HD





pendant with ceiling rose

Power	Φ [lm]	Beam	Code
25W	1600	16°	53820HD
25W	1600	23°	53821HD
25W	1600	36°	53822HD
25W	1600	64°	53823HD
25W	1600	74°	54031HD
50W	3300	17°	53830HD
50W	3300	27°	53831HD
50W	3300	39°	53832HD





Power	Φ [lm]	Beam	Code
25W	1600	16°	33255HD
25W	1600	23°	33256HD
25W	1600	36°	33257HD
25W	1600	64°	33258HD
25W	1600	74°	33298HD
50W	3300	17°	33266HD
50W	3300	27°	33267HD
50W	3300	39°	33268HD



## VIRGOLA HD

design: Lapo Grassellini





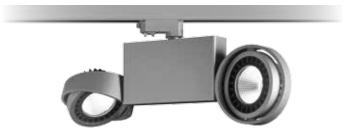
Power	Φ [lm]	Beam	Code
25W	1600	16°	31765HD
25W	1600	23°	31766HD
25W	1600	36°	31767HD
25W	1600	64°	31768HD
25W	1600	74°	31769HD





Power	Φ [lm]	Beam	Code
25W	1600	16°	31775HD
25W	1600	23°	31776HD
25W	1600	36°	31777HD
25W	1600	64°	31778HD
25W	1600	74°	31779HD

**∜ ▼** IP20



double gyroscopic

Power	Φ [lm]	Beam	Code
2x25W	3200	16°	31785HD
2x25W	3200	23°	31786HD
2x25W	3200	36°	31787HD
2x25W	3200	64°	31788HD
2x25W	3200	74°	31789HD

**∜ F** IP20









#### standard

Power	Φ [lm]	Beam	Code
25W	1600	78°	33322.11HD
50W	3300	77°	33334.11HD

**∜** IP20/IP44

### emergency

Code	Beam	Φ [lm]	Power
33328.11HD	78°	1600	25W
33340.11HD	77°	3300	50W

₩ IP20/IP44 (E)

#### dimmable 1-10V

Power	Φ [lm]	Beam	Code
25W	1600	78°	33324.11HD
50W	3300	77°	33336.11HD

₩ V IP20/IP44

#### dimmable DALI

Power	Φ [lm]	Beam	Code
25W	1600	78°	33326.11HD
50W	3300	77°	33338.11HD





| 11



#### fixed 170

Power	Φ [lm]	Beam	Code
25W	1600	16°	33090.11HD
25W	1600	23°	33091.11HD
25W	1600	38°	33092.11HD

#### adjustable 170

Power	Φ [lm]	Beam	Code
25W	1600	16°	33098.11HD
25W	1600	23°	33099.11HD
25W	1600	40°	33100.11HD
25W	1600	40°	33100.11HD

#### wall washer 170

Power	Φ [lm]	Beam	Code
25W	1600	wall washer	33106.11HD

#### **ACCESSORY**



rimmed housing H=9,5/12,5/15,5mm cod. **93528.00** 

#### fixed 210

Power	Φ [lm]	Beam	Code
50W	3300	17°	33114.11HD
50W	3300	28°	33115.11HD
50W	3300	39°	33116.11HD

#### adjustable 210

Φ [lm]	Beam	Code
3300	17°	33126.11HD
3300	28°	33127.11HD
3300	35°	33128.11HD
	3300 3300	3300 17° 3300 28°

#### wall washer 210

Power	Φ [lm]	Beam	Code
50W	3300	wall washer	33135.11HD

#### **ACCESSORY**



rimmed housing H=9,5/12,5/15,5mm code **93529.00** 

### ESSENTIAL HD

design: Lapo Grassellini

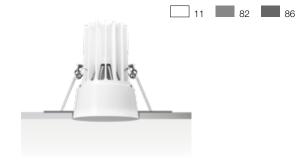


Power	Φ [lm]	Beam	Code
25W	1600	16°	30212HD
25W	1600	23°	30213HD
25W	1600	36°	30214HD
25W	1600	64°	30215HD
25W	1600	74°	33304HD



#### backward recessed

Code	Beam	Φ [lm]	Power
33077HD	15°	1600	25W
33078HD	23°	1600	25W
33079HD	36°	1600	25W



#### trimless recessed

Power	Φ [lm]	Beam	Code
25W	1600	15°	33316HD
25W	1600	23°	33317HD
25W	1600	36°	33318HD

#### **ACCESSORY**



rimmed housing H=9,5/12,5/15,5mm code **93526.00** 



design: Giampiero Peia





Power	Φ [lm]	Beam	Code
25W	1600	16°	36310HD
25W	1600	26°	36311HD
25W	1600	43°	36312HD
Compulsory decor	ative ring		9344



Power	Φ [lm]	Beam	Code
25W	1600	16°	36316HD
25W	1600	26°	36317HD
25W	1600	43°	36318HD



#### **ACCESSORIES**



decorative round ring for Perla 160 (Ø 200) code 93440.11 code 93440.27



decorative square ring for Perla 160 (205x205 mm) code 93441.11 code 93441.27





Power	Φ [lm]	Beam	Code
25W	1600	16°	36322HD
25W	1600	26°	36323HD
25W	1600	43°	36324HD



Power	Φ [lm]	Beam	Code
25W	1600	16°	36328HD
25W	1600	26°	36329HD
25W	1600	43°	36330HD



#### ACCESSORY



3 mm spacers kit for round flush-fitted Perla 160 (for plasterboard 9 mm thick) code **92203.00** 

#### **ACCESSORY**



3 mm spacers kit for square flush-fitted Perla 160 (for plasterboard 9 mm thick) code **92204.00** 









Power	Φ [lm]	Beam	Code
25W	1600	16°	30386HD
25W	1600	23°	30387HD
25W	1600	36°	30388HD
25W	1600	64°	30325HD
25W	1600	74°	33308HD



Power	Φ [lm]	Beam	Code
50W	3300	17°	33030HD
50W	3300	27°	33031HD
50W	3300	39°	33032HD



### ACCESSORIES

for 25W fixtures

for 50W fixtures



electronic ballast (suitable for controlling 1 LED) 31x179xH31,5 mm code **30398.00** 



dimmable electronic ballast 1-10V (suitable for controlling 1 LED) 79x124xH23 mm code 38948.00



dimmable electronic ballast DALI (suitable for controlling 1 LED) 125x90xH22 mm code **30399.00** 



electronic ballast 1-10V (suitable for controlling 1 LED) 100x150xH35 mm code **38959.00** 



dimmable electronic ballast 1-10V (suitable for controlling 1 LED) 156x83xH36 mm code 30587.00



dimmable electronic DALI ballast (suitable for controlling 1 LED) 156x83xH36 mm code 30588.00

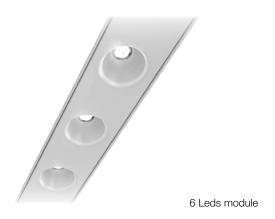




New products 2014

## RUSH design: Matteo Nunziati

The new linear system with a minimalistic design is made by an aluminium profile housing two types of modules - spotlight and projectors - which can be assembled according to the application needs. Available versions: ceiling mounted, recessed and pendant.



Power	Color Temperature	Beam	L [mm]
9W	NW/WW	26°	300
9W	NW/WW	32°	300
9W	NW/WW	47°	300



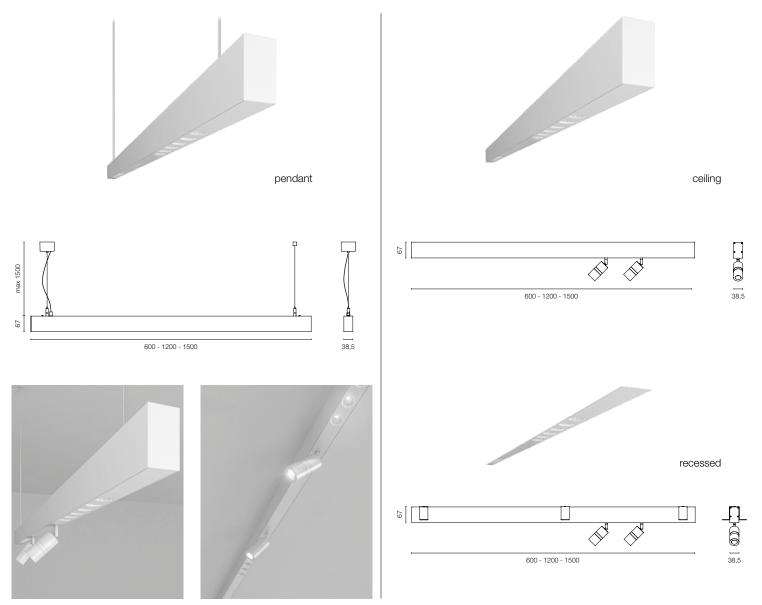




Power	Color Temperature	Beam	L [mm]
W8	NW/WW	26°	150
W8	NW/WW	32°	150
W8	NW/WW	47°	150

**€** □ **▼** IP20







11 27 82

A new elegant suspended light - ideal either for work station or open space. Cloud combines design and visual comfort with the right quantity of light.



#### direct/indirect emission

Power	Color Temperature	CRI	Beam
54W	NW/WW	>80	wide



#### direct emission

Power	Color Temperature	CRI	Beam
27W	NW/WW	>80	wide

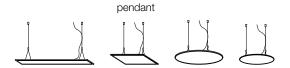




11 27 82

Ultra slim Led panels with a very efficient lumen output and a no glair diffuser. Available versions: ceiling mounted, recessed and pendant.







L [mm]	Power	Color Temperature	CRI	Beam
1200x165	45W	NW/WW	>80	wide
595x595	50W	NW/WW	>80	wide
Ø 850	70W	NW/WW	>80	wide
Ø 580	35W	NW/WW	>80	wide





## TUBE design: Archea

10 12 14 16 25 34

A colourful new range for the Tube Led range: made of anodized aluminium, with a new mechanism and now in two different sizes, the new elements swing on the air as bamboo drawing any kind of irregular pattern on the ceiling.





adjustable Ø 35

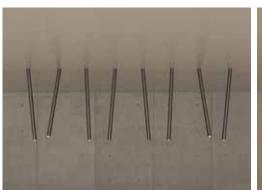
Power	Colour temperature [K]	CRI	Beam	L [mm]
6W	NW/WW	>80	32°	800
6W	NW/WW	>80	32°	1200
6W	NW/WW	>80	32°	1500



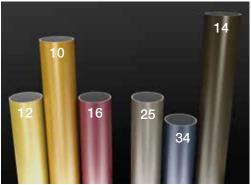
adjustable Ø 52

Power	Colour temperature [K]	CRI	Beam	L [mm]
10W	NW/WW	>80	32°	800
10W	NW/WW	>80	32°	1200
10W	NW/WW	>80	32°	1500

**√** F/IP20







11 27 82

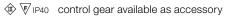
A thin, elegant projector with a ceiling adjustable steam which can be customized for different applications.



Power	Φ [lm]	Color Temperature	CRI	beam	L [mm]
6W	450	NW/WW	>80	32°	200
6W	315	NW/WW	97	32°	200
6W	450	NW/WW	>80	32°	400
6W	315	NW/WW	97	32°	400
6W	450	NW/WW	>80	32°	800
6W	315	NW/WW	97	32°	800

★ IP40 control gear available as accessory

Power	Φ [lm]	Color Temperature	CRI	beam	L [mm]
6W	450	NW/WW	>80	58°	200
6W	315	NW/WW	97	58°	200
6W	450	NW/WW	>80	58°	400
6W	315	NW/WW	97	58°	400
6W	450	NW/WW	>80	58°	800
6W	315	NW/WW	97	58°	800







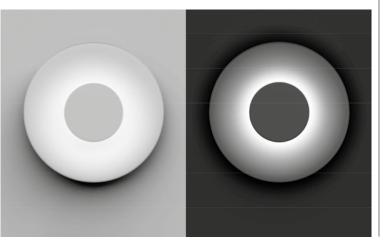
Light and shadow floating on the wall are the main characteristic of Traz. Made of a gypsum body hiding the Led light source, this fixture gives the possibility to create very soft and unique atmosphere.





Power	Colour temperature [K]	CRI	Ø
10W	NW/WW	>80	350







applique Ø 450

Power	Colour temperature [K]	CRI	Ø
10W	NW/WW	>80	450

**▼** IP20

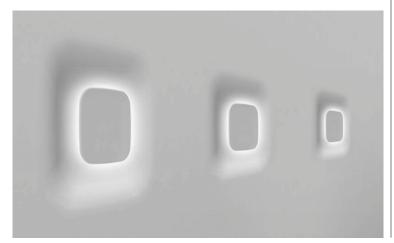






Power	Colour temperature [K]	CRI	Ø
13W	NW/WW	>80	215

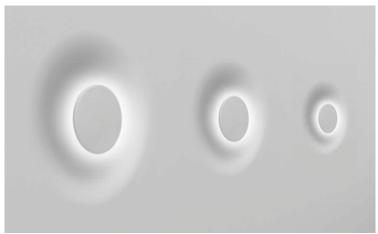
▼ IP20





Power	Colour temperature [K]	CRI	Ø
13W	NW/WW	>80	215

**▼** IP20





11 82

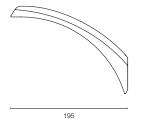
Concave and convex shapes merge into organic forms of Oblò sconce and play with the juxtaposition of LED and diffuse light. Oblò is a sinuous and luminous substance at designers' disposal

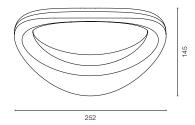


#### indirect emission

Power	Color Temperature	CRI	Beam
26W	NW/WW	>80	wide



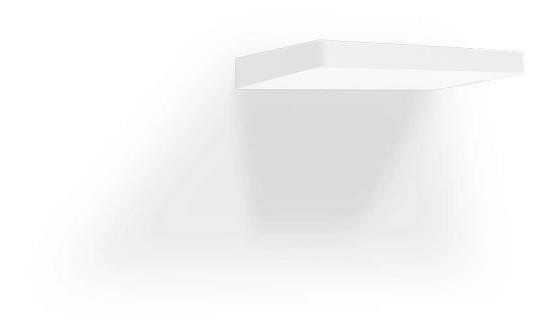




# SIMPLE design: Lapo Grassellini

11 82

A basic geometric design to fade on the wall with a soft Led light source.



#### indirect emission

Power	Color Temperature	CRI	Beam
26W	NW/WW	>80	wide
₹ IP40			





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