

The Different Light ™

LED CATALOGUE



Mediaset, "La sai l'ultima" programme Set designed by Gaetano Castelli Installed by Nova Impianti 99





S. Felice, district Milan – entrance drive - Nauto/IVELA recessed lights



A new light in everyday life

Seeing clearly entails a series of advantages that do not impose changes in life style. But they improve it in terms of comfort, economy and efficiency. The "LED system" is an asset with a very long life-span: a 50,000-hour lifetime against the 1,000 hours provided by ordinary incandescent light bulbs. A double victory also in terms of the emitted heat: LEDs do not "heat" the objects they light! But how much do they consume? Not very much, at all. A Minispot fitted with a one 1W LED featuring a 45° lens positioned 50 cm from a surface, provides around 200 Lux. This is four times the output of a halogen bulb that is ten times as powerful. Additionally, the power unit can be located over 40 meters away... Another record statistic!









LIGHTING WITH LEDS



VLM has been designing, and manufacturing LED systems and their power supply units ever since this technology made its debut (1998).

The giant strides constantly being made in LED technology are truly amazing: the way it is developing can be compared to what is happening in the IT and electronic fields.

VLM reserves the right to make changes to the LED Systems shown here in the interests of guaranteeing its customers the very latest, most efficient products.

This catalogue is not a contractual document.

Caution: only the use of VLM power units guarantees the VLM LED System will work properly.



The Different Light ™

LEDs in brief

LEDs are light-emitting diodes made of semiconductor materials through which current passes through.

They work for up to 100,000 hours, enabling vast reduction of maintenance costs.

They are much more efficient, more so than all incandescent light bulbs and most halogen bulbs.

They do not produce forward heat or fade the objects they illuminate and, as they do not emit IR or UV rays, you see colours exactly as they are at daylight.

They are instant on with no delay.

The lights can be dimmed without altering colours.

They also work at very low temperatures (-40°C).

They give great freedom to lighting system and apparatus designers.

They can be powered with a very low direct current safety voltage with a power unit positioned over 40 meters away. They are extremely sturdy and can withstand vibrations.

LEDs come in a variety of colours as well as white. White LEDs are available in various colour temperatures (from 3300K to 7000K).





The most frequently asked questions about LEDs

Are LEDs really effective lighting sources?

Yes, of course: you only need to see the comparison of the various lighting sources on the previous page. The intrinsic efficiency of LEDs is in fact around 45 lumen/Watt (for white), which is much higher, than that of incandescent and halogen lights. In fact, compared to LEDs, the other types of lighting mentioned above "waste electricity" (... and lots of it! sometimes more than 80%) by emitting heat in the luminous band. Furthermore, additional lenses or diffusers can be used to greatly increase the already fantastic lighting and technical performance of LEDs. VLM invests considerable resources in designing and developing lenses for its LED systems.

Is it true that there are LEDs of different qualities?

It is a question of efficiency not quality. There are low-efficiency LEDs that cannot be used for lighting but that are acceptable as warning lights, for example. And then there are high-efficiency LEDs that are much more expensive (especially power LEDs), whose main application is in the lighting field. VLM only uses high-efficiency LEDs.

What is the difference between a signal LED and a power LED?

They are both in the LED-for-lighting category but they do different jobs. Signal LEDs do not work using high power (somewhere in the region of 0.1W): this is because their job is, precisely, to "signal". Depending on how they are mounted they are divided into: Radial, that is with radial insertion and narrow band (10-30°) or SMD, with surface mounting featuring wide luminous angles (110-120°)

And the power LEDs?

Power LEDs represent the excellence of LEDs and it is on this that the greatest efforts are being concentrated in the field of technological research. From 10 to 45 times brighter than a signalling LED, they offer unprecedented, leading-edge lighting solutions. Currently available in 1 and 3W versions, they are almost always used combined with high-quality lenses that make it possible to get very narrow lighting angles (6-10°), and thus very suggestive lighting effects (so-called "emotive light") can be created.

Why don't LEDs heat?

LEDs do not "heat" the objects they light because they do not emit infrared rays! They do not emit UV rays either; so, as well as not heating, they do not change the colours perceived of the lit objects. That is a fundamental strong point. An example? If lit with a traditional light source, lipstick ... melts, while a leather handbag or item risks fading/damage...

Why must power LEDs be connected in series?

Power LEDs are powered using direct current through special power supply units. Their main job is to control the current in the circuit, very precisely. To ensure constant current, all the LEDs in a circuit must be connected in series? Any parallel connection (such as commonly used for halogen lights) could deteriorate the LEDs very quickly. That said, some products (e.g. Dicroled) do have an integrated power circuit that enable them to be connected in parallel.



Why should I buy a VLM LED System rather than another? For five great reasons.

LED Systems are complex and "expensive". Economic justification for their use is based on their performance and durability. But both performance and durability depend on design technology first and then production technology.

Here are some of the "great reasons" for choosing a VLM LED System rather than another.

1) The lenses: in most cases, lenses and diffusers are essential components in a LED system. They must therefore be: (a) studied in view of the lighting performance required and (b) optimised for the type of apparatus they are to be used in. For this reason VLM designs a wide range of "dedicated lenses", i.e. lenses designed specially for its own LED Systems.

2) The cooling elements: a few LED Systems must be fitted with cooling elements that facilitate the emission of heat and, thus, lengthen the life of the product. Designing a cooling element is technically very complex and it is just as expensive to manufacture it; it is therefore necessary only to use highly-sophisticated materials. VLM makes its own cooling elements to fit to its LED Systems and is committed to a research and testing program involving the most innovative materials offering the best performance.

3) The color selections: the LED manufacturing process can cause small divergences in colour efficiency and tone. The problem of colour constancy is most obvious with "white". For this reason VLM gives a choice between different colour temperatures (warm white at about 3,300K, cold white at approx. 5,500K and very cold white at about 7,000K). What is more, in particular cases it is possible to give its customers batches of LEDs that are selected in colour terms.

4) The size of the range: the field LEDs can be applied in is getting bigger all the time; it is necessary to cater for this with a similarly extensive, and above all constantly renewed, range of systems. Technological leader in the industry, VLM is also the leader in the range it offers with more than three hundred models/variants of standard LED Systems available in its catalogue.

5) The "solution providing" approach: the LED universe is evolving very rapidly, and, each day that passes, it is buffeted by the stimuli of "new developments" from different quarters : including industry, designers, and design engineers ... and sometimes from the end users themselves. Keeping up to date is a must, but sometimes that is not enough. LED system manufacturers must interact with all interested parties, take stock of all their requirements and engage in a mutual exchange of know how, to come to tailor-made solutions together. VLM is a "solutions provider" because it has the technical and creative facilities (and even before those, the mentality) to do it.





VLM Program POWER LED





Dicroled with 1 power LED

ODL series (GU4 base)

- 15° or 30° built in lens - GU4 base (EN 60061-1)

Important: the Dicroled 1 has the same base (GU4) as the dichroic MR11

ODL/15/GU4

with 15° lens

ODL/30/GU4

with 30° lens

12V power supply - in direct current with functionality independent of the connection polarities. - in alternating current with 60Hz lamellar or toroidal magnetic or electronic transformer, using enough Dicroleds to reach the minimum load indicated on the transformer's rating plate.

Recommended ambient temperature: -30° to 35°C

Can be powered in parallel without a limited max number.

ODL/15/GU4 ODL/30/GU4		Red	Yellow	Blue	Green	White	Warm- White
Nominal current	mA	140	140	160	160	160	160
Maximum power	W	1.7	1,7	1.9	1.9	1.9	1.9
Input voltage	V	9÷14	9÷14	9÷14	9÷14	9÷14	9÷14
Average luminous flux	lumen	27	25	16	53	45	20
Lighting angle	0	15/30	15/30	15/30	15/30	15/30	15/30
Approximative wave lenght. or colour temperature	nm/K	625	590	455	530	B~5500K BB~7000K	BC3300K

ODL/15/GU4





ODL/30/GU4





Dicroled with 3 power LEDs

ODL series (GU5.3 push in base)

- 15° or 30° built in lens - GU5.3 push in base (EN 60061-1)

Important: the Dicroled 3 has the same base (GU5.3) as the dichroic MR16

ODL/15/GU5.3

with 15° lens

ODL/30/GU5.3

with 30° lens

12V power supply - in direct current with functionality independent of the connection polarities. - in alternating current with 60Hz lamellar or toroidal magnetic or electronic transformer, using enough Dicroleds to reach the minimum load indicated on the transformer's rating plate.

Recommended ambient temperature: -30° to 35°C

Can be powered in parallel without a limited max number.

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2	

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PRODUCT UNDER DEVELOPMENT, DESIGN NOT FINAL

ODL/15/GU5,3 ODL/30/GU5,3		Red	Yellow	Blue	Green	White	Warm- White
Nominal current	mA	325	325	375	375	375	375
Maximum power	W	3.9	3.9	4.5	4.5	4.5	4.5
Input voltage	V	9÷14	9÷14	9÷14	9÷14	9÷14	9÷14
Average luminous flux	lumen	81	75	48	159	135	60
Lighting angle	0	15/30	15/30	15/30	15/30	15/30	15/30
Approximative wave lenght. or colour temperature	nm/K	625	590	455	530	B~5500K BB~7000K	BC3300K

ODL/15/GU5,3

ODL/30/GU5,3

Minispot for installation with 1 power LED OSP/25 series (25 mm hole)

- 60° or 45° built in lens - white, transparent or chromium-plated plastic body - equipped with connection cables (approx. 20cm)

OSP/25L60/L1

with 60° lens

OSP/25L45/L1

with 45° lens

Also available in a version without lens (.../25/L1)

To be used with VLM electronic 350mA constant current power supply units (see table on page 24) Max. temp. on metal body (TC): 85°C

SERIAL CONNECTIONS ONLY

OSP/25/L1 OSP/25L60/L1 OSP/25L45/L1		Red	Yellow	Blue	Green	White	Warm- White
Nominal current	mA	350	350	350	350	350	350
Maximum power	W	1.2	1.2	1.4	1.4	1.4	1.4
Vaximum voltage	V	3.3	3.3	4	4	4	4
Average luminous Flux	lumen	27	25	16	53	45	20
_ighting angle	0	110/60/45	110/60/45	110/60/45	110/60/45	110/60/45	110/60/45
Approximative wave length. or colour temperature	nm/K	625	590	455	530	B~5500K BB~7000K	BC3300K

OSP/25L60/L1

+

OSP/25/L1 OSP/25L60/L1

24,2

9

Spot for installation with 3 power LEDs OSP/L45 series (50 mm hole)

 three built in 45° lenses
 white plastic, transparent or chromium-plated body
 equipped with connection cables (approx. 20cm)

To be used with VLM electronic 350mA constant current power supply units (see table on page 24) Max. temp. on metal body (TC): 85°C

SERIAL CONNECTIONS ONLY

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OSP/L45/L3		Red	Yellow	Blue	Green	White	Warm- White
Nominal current	mA	350	350	350	350	350	350
Maximum power	W	3.9	3.9	4.5	4.5	4.5	4.5
Maximum voltage	V	9.9	9.9	12	12	12	12
Average luminous flux	lumen	81	75	48	159	135	60
Lighting angle	0	45	45	45	45	45	45
Approximative wave lenght. or colour temperature	nm/K	625	590	455	530	B~5500K BB~7000K	3300K

OSP/L45/L3

Modules/components with 1 power LED **OSP/LLF** series

- 6°, 30° or 45° built in lens - equipped with connection cables (approx. 20cm)

Important: the series has the same diameter (35.3 mm) as dichroic MR11 (GU4)

> Also available in a version with a smaller diameter (28 mm): .../LF

> > OSP/LLF6/L1 with 6° lens

> > OSP/LLF30/L1 with 30° lens

OSP/LLF45/L1

with 45° lens

To be used with VLM electronic 350mA constant current power supply units (see table on page 24) Max. temp. on metal body (TC): 85°C

SERIAL CONNECTIONS ONLY

OSP/LLF6/L1 OSP/LLF30/L1 OSP/LLF45/L1		Red	Yellow	Blue	Green	White	Warm White
Nominal current	mA	350	350	350	350	350	350
Maximum power	W	1.2	1.2	1.4	1.4	1.4	1.4
Maximum voltage	V	3.3	3.3	4	4	4	4
Average lumionous flux	lumen	27	25	16	53	45	20
Lighting angle	0	6/30/45	6/30/45	6/30/45	6/30/45	6/30/45	6/30/45
Approximative wave lenght. or colour temperature	nm/K	625	590	455	530	B~5500K BB~7000K	BC3300K

OSP/LLF6/L1

18 +

OSP/LLF30/L1

OSP/LLF45/L1

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Modules/components with 3 power LEDs OSP/LF series

- 6°, 30° or 45° built in lens - equipped with connection cables (approx. 20cm)

Important: the series has the same diameter (51 mm) as dichroic MR16 (GU5.3)

OSP/LF6/L3

with 6° lens

OSP/LF30/L3 with 30° lens

OSP/LF45/L3

with 45° lens

To be used with VLM electronic 350mA constant current power supply units (see table on page 24) Max. temp. on metal body (TC): 85°C

Also available in a version "H" with extra cooling element

OSP/LF6/L3 OSP/LF30/L3 OSP/LF45/L3		Red	Yellow	Blue	Green	White	Warm- White
Nominal current	mA	350	350	350	350	350	350
Maximum power	W	3.9	3.9	4.5	4.5	4.5	4.5
Average luminous flux	lumen	81	75	48	159	135	60
Lighting angle	0	6/30/45	6/30/45	6/30/45	6/30/45	6/30/45	6/30/45
Approximative wave lenght. or colour temperature	nm/K	625	590	455	530	B~5500K BB~7000K	BC3300K

OSP/LF6/L3

OSP/LF30/L3

OSP/LF45/L3

Metal light injector with 1 power LED OLJ/F6/L1

special light source for optical fiber diam. 6mm.
 Threaded body M16 x 1.5

 supplied with fixing nut
 equipped with connection cables (approx. 20cm)

To be used with VLM electronic 350mA constant current power supply units (see table on page 24) Max. temp. on metal body (TC): 80°C

SERIAL CONNECTIONS ONLY

OLJ/F6/L1		Red	Yellow	Blue	Green	White	Warm- White
Nominal current	mA	350	350	350	350	350	350
Maximum power	W	1.2	1.2	1.4	1.4	1.4	1.4
Maximum voltage	V	3.3	3.3	4	4	4	4
Average luminous flux	lumen	27	25	16	53	45	20
Lighting angle	0	45	45	45	45	45	45
Approximative wave lenght or colour temperature	nm/K	625	590	455	530	B~5500K BB~7000K	BC3300K

POWER LED 1x1W 350 mA

Metal minispot with 1 power LED OLJ/F16L60 and OLJ/FG9 series

built in 60° lens (OLJ/F16L60)
 built in 15° or 30° lens (OLJ/FG9 series)
 equipped with connection cables (approx. 20cm)

OLJ/F16L60/L1: with 60° lens - threaded body M16 x 1.5 - supplied with 16 mm fixing nut

OLJ/FG9/L15: with 15° lens - threaded body M20.6x2 - supplied with fixing wing nut

OLJ/FG9/L30: with 30° lens - threaded body M20.6x2 - supplied with fixing wing nut

To be used with VLM electronic 350mA constant current power supply units (see table on page 24) Max. temp. on metal body (TC): 80°C

SERIAL CONNECTIONS ONLY

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+	+ M16x1,5 +
	+ 12,85 +

OLJ/F16L60/L1 OLJ/FG9/L15 OLJ/FG9/L30		Red	Yellow	Blue	Green	White	Warm- White
Nominal current	mA	350	350	350	350	350	350
Maximum power	W	1.2	1.2	1.4	1.4	1.4	1.4
Maximum voltage	V	3.3	3.3	4	4	4	4
Average luminous flux	lumen	27	25	16	53	45	20
Lighting angle	0	60/15/30	60/15/30	60/15/30	60/15/30	60/15/30	60/15/30
Approximative wave length or colour temperature	nm/K	625	590	455	530	B~5500K BB~7000K	BC3300K

OLJ/FG9/L15

OLJ/FG9/L30

Metal minispot with 1 power LED 3W 0LJ/F14 series

- 6°, 30° or 45° built in lens
- threaded body diam. 27.5 mm (E14)
- supplied with fixing ring nut
- equipped with connection cables (approx. 20cm)

OLJ/F14/LF6/LT

with 6° lens

OLJ/F14/LF30/LT with 30° lens

OLJ/F14/LF45/LT

with 45° lens

To be used with VLM electronic 350mA constant current power supply units (see table on page 24) Max. temp. on metal body (TC): 80°C

LED colours available: white, blue, green

SERIAL CONNECTIONS ONLY

OLJ/F14/LF6/LT OLJ/F14/LF30/LT OLJ/F14/LF45/LT		Red	Yellow	Blue	Green	White
Nominal current	mA	700	700	700	700	700
Maximum power	W	2.6	2.6	3.2	3.2	3.2
Maximum voltage	V	3.75	3.75	4.47	4.47	4.47
Average luminous flux 700 ma	lumen	55	50	23	64	65
Lighting angle	0	6/30/45	6/30/45	6/30/45	6/30/45	6/30/45
Approximative wave lenght or colour temperature	nm/K	627	590	455	530	6000K

OLJ/F14/LF6/LT

OLJ/F14/LF30/LT

OLJ/F14/LF45/LT

Submersion proof mini spot with 1/3 power LED(s)

OSP/IP series IP68 for submersion

 minispot with 1 or 3 LEDs moulded in shock proof material
 equipped with connection cables (approx. 50cm)

OSP/IPF/D1: flat minispot for submersion with 1 power LED – diam. 31mm

OSP/IP/D1: minispot for installation with 1 power LED – threaded body M24x3 supplied with fixing wing nut

OSP/IP/D3: minispot for installation with 3 power LEDs – threaded body M24x3 supplied with fixing wing nut

To be used with VLM electronic 350mA constant current power supply units (see table on page 24) Max. temp. on metal body (TC): 80°C

SERIAL CONNECTIONS ONLY

OSP/IPF/D1-OSP/IP/D1		Red	Yellow	Blue	Green	White
Nominal current	mA	350	350	350	350	350
Maximum power	W	1.2	1.2	1.4	1.4	1.4
Maximum voltage	V	2.6	2.6	4	4	4.5
Average luminous flux	lumen	25	17	10	40	40
Approximative wave lenght	nm	617	590	470	530	B~6000K

OSP/IP/D3		Red	Yellow	Blue	Green	White
Nominal current	mA	350	350	350	350	350
Maximum power	W	3.6	3.6	4.2	4.2	4.2
Maximum voltage	V	7.8	7.8	12.6	12.6	13.5
Average luminous flux	lumen	75	51	30	120	120
Approximative wave lenght	nm	617	590	470	530	B~6000K

Strip modules with 3/6 power LED(s) L-LM series

 can be connected one to another and powered at 12V constant voltage due to a power circuit on the circuit board that enables the control of the current supplied to the LEDs

 ideal for creating "lighting paths" for great optical effect.

 especially suitable for equipment to light objects that could be harmed by the heat given off by traditional lighting sources (e.g. pictures)

> - length: 300 mm - width: 20 mm - lighting angle: 140° C (white).

Available in: - version with bayonet connectors of one module with another (OSM/) - version with connection cables with cross section 0.75 sq. mm (approx. 20 cm)

OSM20/300/L-LM3: 3 LEDs, with connectors OSM20/300/L-LM6: 6 LEDs, with connectors OS20/300/L-LM3: 3 LEDs, with connection cables OS20/300/L-LM6: 6 LEDs, with connection cables

To be used with VLM electronic 12V DC power supply units: mod. PTDC/10/12V/B or PTDC/40/12V/N according to the number of Ledstrips to connect Max. temp. on metal body (TC): 85°C

Max. no. of modules that can be connected in series: (.../L-LM3): 16 - (.../L-LM6): 8

PARALLEL CONNECTION

OSM(OS)20/300/L-LM3 OSM(OS)20/300/L-LM6		Red	Yellow	Blue	Green	White	Warm- White
Nominal voltage (DC)	V	12	12	12	12	12	12
Maximum power	W	4.2-8.4	4.2-8.4	4.2-8.4	4.2-8.4	4.2-8.4	4.2-8.4
Nominal current	mA	350-700	350-700	350-700	350-700	350-700	350-700
Average luminous flux	lumen	81-162	75-150	48-96	159-318	135-270	60-120
Lighting angle	0	110	110	140	140	140	110
Approximative wave lenght or colour temperature	nm/K	625	590	455	530	B~5500K BB~7000K	BC3300K

VLM Kit - LED the "all-in-one" solution

Kit

Flettra

All you need for LED lighting immediately, in a single package. Spot, power supply and cables complete with Faston connectors.

An effective sales proposal for immediate und and genuine "problem shooting". Ideal for less complex installations and do-it-yourself enthusiasts.

NB: See the previous pages for the technical characteristics of the products in the "LED Kit" $\,$

Single OptoSpot Kit

Optospots are the best alternative to traditional built in spotlights, in terms of technology and aesthetic. They have practically unlimited lifetime, require no maintenance and (very importantly) do not "heat" the lighted objects.

Available in 1 spot kits.

Ph

MiniSpot Kit x 3

MiniSpot Kit x 6

Minispots have been designed to provide particularly suggestive lighting effects, to create "paths of light" in showrooms, modern exhibition rooms and/or for optimal presentation of collectors items, be it in the home, shops, boutiques etc.

Available in 3 or 6 spot kits.

VLM Program SIGNAL AND RADIAL LEDs

SIGNAL LED

Module/component with 9 Signal LEDs 0LG4/030/S9 series (GU4 base)

 particularly suitable to use in traditional spotlights with G4 base.
 9 SMD LEDs with 120° lighting angle
 GU4 connection PIN (EN 60061-1)

12V AC power supply - with magnetic or electronic transformer using enough modules to reach the minimum load required for the transformer itself.

12V DC power supply - with functionality independent of the connection polarities (see table on page 26)

Max. temperature on the LED soldering tag (TC): 85°C

PARALLEL CONNECTION

OLG4/030/S9		Red	Yellow	Blue	Green	White
Nominal current	mA	60	60	60	60	60
Power	W	1	1	1	1	1
Luminous flux	lumen	21.5	11.5	4.5	9	11
Approximative wave length or colour co-ordinates	nm	615	587	470	528	x=0.32 <i>y=0.31</i>

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Strip modules with 5/15/29 SIGNAL LED(s) 0S/0SM series

 particularly suitable for outlining routes on the ground and/or walls
 length: 300 mm - width: 8 mm
 lighting angle: 120°

Available in: - version with connection cables with cross section 0.75 sq. mm (0S8/...) - version with bayonet connectors of one module with another (0SM8/...)

058/300/S5: 5 LEDs, with connection cables **058/300/S15:** 15 LEDs, with connection cables **058/300/S29:** 29 LEDs, with connection cables

OSM8/300/S5: 5 LEDs, with connectors OSM8/300/S15: 15 LEDs, with connectors OSM8/300/S29: 29 LEDs, connectors

To be used with VLM electronic 350mA constant current power supply units (see table on page 26) Max. temperature on the LED soldering tag (TC): 85°C

Max. no. of modules that can be connected in series: (.../S5): 100 - (.../S15): 33 - (.../S29): 20

OS8/300/S5 OSM8/300/S5		Red	Yellow	Blue	Green	White
Nominal current	mA	20	20	20	20	20
Power	W	0.5	0.5	0.5	0.5	0.5
Luminous flux	lumen	12	6.5	2.5	5	6
Approximative wave length or colour co-ordinates	nm	625	587	470	528	x=0.32 y=0.31

OS8/300/S15 OSM8/300/S15		Red	Yellow	Blue	Green	White
Nominal current	mA	60	60	60	60	60
Power	W	1.5	1.5	1.5	1.5	1.5
Luminous flux	lumen	36	19	7	15	18
Approximative wave length or colour co-ordinates	nm	625	587	470	528	x=0.32 y=0.31

OS8/300/S29 OSM8/300/S29		Red	Yellow	Blue	Green	White
Nominal current	mA	120	120	120	120	120
Power	W	3	3	3	3	3
Luminous flux	lumen	70	36.5	13.5	29	35
Approximative wave length or colour co-ordinates	nm	625	587	470	528	x=0.32 y=0.31

Strip with 18/36 5 mm radial LEDs 0S20 series

particularly suitable for backlit panels
 length: 300 mm - width: 20 mm
 lighting angle: 20°

0S20/300/R18

- version with 18 LEDs

OS20/300/R36

- version with 36 LEDs

To be used with VLM electronic 24V constant voltage power supply units (see table on page 26) Max. temperature on the LED soldering tag (TC): 85°C

Max. no. of modules that can be connected in series: (.../R18): 38 - (.../R36): 19

+

300

OS20/300/R18		White
Nominal current	mA	90
Power	W	1.5
Lighting intensity (sing. led)	candles	6.5
Colour co-ordinates		x=0.32
		y=0.31

OS20/300/R36		White
Nominal current	mA	180
Power	W	3.0
Lighting intensity (sing. led)	candles	6.5
Colour co-ordinates		x=0.32
		y=0.31

Constant current power supply units for spots/modules with power LEDs

How many modules do you want to connect?

Туре	Code	Page ref.	up to 2	up to 3	up to 5	i up to 8	up to 3	up to 6	up to 11
Systems with	1x1 LED			LED C white / bl	OLOUR: ue / gree	n	L	LED COLOUR: yellow / red	
Minispot 1W	0SP/25/L1	9	_	Γ -	Γ	T	_	 [T
Minispot 1W	0SP/25L60/L1	9							
Minispot 1W	0SP/25L45/L1	9							
Module 1W	OSP/LLF6/L1	11		5					
Module 1W	OSP/LLF30/L1	11	2	but 1	>		V burt 1	Ņ	
Module 1W	OSP/LLF45/L1	11	ıt 12	i Oi	ıt 24		50 in it 12	ıt 24	
Light injector 1W	OLJ/F6/L1	13	inpu	B/35	inpt		B/3 5 inpu	inpt	
Minispot 1W	OLJ/F16L60/L1	14	4V/N	BT	4V/N		PTB 4V/N	4V/N	
Minispot 1W	OLJ/FG9/L15	14	12-2	- N/Q	12-2	50/B	0/N - 12-2	12-2	50/B
Minispot 1W	OLJ/FG9/L30	14	350/:	\$/35(350/:	[0/3]	350/	20/:	0/3
Submersion proof	OSP/IPF/D1	16	CC/3	S S		CC/1	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	CC/3	OCC/1
Submersion proof	OSP/IP/D1	16	PTD	a Ta	E E	PTD	PTD	L	
								, 	· · · · · ·
Туре	Code	Page ref.	1	up	to 2	1	up t	0 2	up to 3
Systems with 3 x 1W LEDs		EDs	LE white	D COLOUR / blue / gr	: 'een		LED CO yellow	LOUR: / red	
Module 3x1W	OSP/LF6/L3	12	24V			12V	24V		
Module 3x1W	OSP/LF30/L3	12	N input		** M	N input	V input tV **		
Module 3x1W	OSP/LF45/L3	12	/N 2-24V/I	out 12V	input 24	/N 2-24V/N but 12V	2-241/1	input 2/	8/0
Spot 3x1W	0SP/L45/L3	10	/3/350	350 inp //10/35	350/N i	/3/350 /350/1 350 inp	/350/1	350/N i	/10/35
Submersion proof minispot 3x1W	OSP/IP/D3	16	PTDC0 PTDC0	PTBB/	PTBB/	PTDCC PTDCC PTBB/	PTDCC	PTBB/	PTDCC
Туре	Code	Page ref.		up to 3					* 3 modules
Systems with	1 x 3W LI	ED	LED COLOUR: white / blue / green				*	* 2 modules	
Minispot 1x3W	OLJ/F14/LF6/LT	15	ę						
Minispot 1x3W	0LJ/F14/LF30/LT	15		2/10/70		only the	use of VI	M power	Caution:
Minispot 1x3W	OLJ/F14/LF45/LT	15	PTDCC/		only the use of VLM power supply units and dimmers guarantee the VLM RGB LED modules will work properly.				

Constant current power supply units for spots/modules with power LEDs

PTDCC/10/700/B Independent direct current power supply unit. High efficiency, reduced weight and volume. Constant output current (700 mA) Universal input voltage 95 – 240 Volt Equipped with terminals.

PTDCC/10/350/B Independent direct current power supply unit. High efficiency, reduced weight and volume. Constant output current (350 mA) Universal input voltage 95 – 240 Volt Equipped with terminals.

PTDCC/3/350/N Direct current power supply unit for installation. High efficiency, reduced weight and volume. Constant output current (350 mA) Universal input voltage 95 – 240 Volt Equipped with terminals.

PTDCC/350/12-24V/N Direct current power supply unit for installation. High efficiency, reduced weight and volume. Constant output current (350 mA) with low input voltage Equipped with terminals.

PTBB/350 Direct current power supply unit for installation. High efficiency, reduced weight and volume. Constant output current (350 mA) with low input voltage Equipped with terminals.

Power Unit		PTDCC/3/ 350/N	PTDCC/10/ 350/B	PTDCC/10/ 700/B	PTBB/350	PTDCC/350/ 12-24V
Nominal input voltage	V	95 - 240	95 - 240	95 - 240	6 - 24	9 - 24
Frequency	Hz	50 - 60	50 - 60	50 - 60		0 - 60
Output voltage	mA	350	350	700	350	350
Power output at 110V	W	3	10	10	4.2	4.2
Thermal protection		yes	yes	yes		
Overload protection		yes	yes	yes		
Overcurrents protection		yes	yes	yes		
Short circuit protection		yes	yes	yes		
Input cables	mm ²	0.5 - 2.5	2x0.75	2x0.75	0.5 - 2.5	0.5 - 2.5
Output cables (max)	mm ²	0.5 - 2.5	0.5 - 2.5	0.5 - 2.5	0.5 - 2.5	0.5 - 2.5
Dimensions	mm	40x42x21	34x115x19	34x115x19	40x42x21	40x42x21
Weight	g	45	60	60	45	45

Constant current power supply units for LED strips/modules with SMD and radial LEDs

			Ηον	v man	y mod	lules do	you w	ant to	conn	e ct?
Туре	Code	Page ref.	1	up to 2	up to 3	up to 6	up to 13	up to 1 8	up to 26	up to 78
Modular LE) strips									
Led strip 5	0\$8/300/\$5	22				PROCEEDING		Prociocanile Procession		PROCESSIE
Led strip 15	0S8/300/S15	22		PROCESSION N		Prociorane Prociorane			& TOC AD LAND	
Led strip 29	0\$8/300/\$29	22	PTOCALANIA		ALC: DOLDAN	ġ	PROCHOTAN			
Led strip 5	OSM8/300/S5	22				Pro-32ant		* Mainonally		PTOLODAY
Led strip 15	OSM8/300/S15	22		* COSTANIA		and to the stand			PTOCHOTAN	
Led strip 29	OSM8/300/S29	22	FIDESTANIA		a contraction of the second	ġ	PTOCHOTAN			
Туре	Code	Page ref.	1	up	to 2	up to 3	up to 4	upt	to 9	up to 18
Radial Led s	strips				<u>.</u>				I	
Led strip 18	0S20/300/R18	23	* TOC SPAN				Procional Procession	>		Proclassiant And
Led strip 36	0S20/300/R36	23		AND	orano			SUSIS	and the second s	
Туре	Code	Page ref.	up to 3	up t	o 10					
Module/con	nponent									
Module SMD	OLG4	21	SING CALL	. Star	altan B	and	only the us I dimmers	se of VLN guarante module	1 power s e the VL es will wo	Caution: supply units M RGB LED ork properly.

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Constant voltage power supply units for LED strips/modules with SMD and radial LEDs

PTDC/10/12V/B Independent direct current power supply unit. High efficiency, reduced weight and volume. Stabilised output voltage Universal input voltage 95 – 240 Volt Equipped with screw clamps.

PTDC/3/24V/N Direct current power supply unit for installation. High efficiency, reduced weight and volume. Stabilised output voltage Universal input voltage 95 – 240 Volt

PTDC/3/12V/N Direct current power supply unit for installation. High efficiency, reduced weight and volume. Stabilised output voltage Universal input voltage 95 – 240 Volt

Independent direct current

Stabilised output voltage

power supply unit. High efficiency.

Supplied already wired with Europa

Universal input voltage 115 - 230 Volt

power plug and connector for the load.

o stranged

PTDC/10/24V/B Independent direct current power supply unit. High efficiency, reduced weight and volume. Stabilised output voltage Universal input voltage 95 – 240 Volt Equipped with screw clamps.

VLM Program RGB LED

Spot for installation with 3 MULTI-CHIP RGB LEDs OSP/L45/SH3/RGB series (50 mm hole)

 made with Multi-Chip LEDs, each LED with three colours
 three built in 45° lenses - white plastic body
 equipped with connection cables (approx. 20cm)

To be used with VLM colour control dimmer mod. DL/RGB/24V or DLDC/RGB plus power supply unit suitable for the number of modules to connect (see table on page. 33) Max. temp. on metal body (TC) 85°C

PARALLEL CONNECTION

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+ 	Ø 50	+	
		Ø5	6

OSP/L45/SH3/RGB		Red	Blue	Green
Nominal current	mA	35	35	35
Power	W	0.12	0.18	0.18
Luminous flux	lumen	1.5	0.65	2.16
Total max power	W		2.5	

Modular strips with 15 MULTI-CHIP RGB LEDs 0S8/0SM8/RGB series

 made with Multi-Chip LEDs, each LED with three colours
 particularly suitable for outlining routes on the ground and/or walls
 length: 300 mm - width: 8 mm
 lighting angle: 120°

Available in: - version with connection cables with cross section 0.75 sq. mm (0S8/...) - version with connectors for connection in series (0SM8/...)

0S8/300/S15/RGB: with connection cables

OSM8/300/S15/RGB: with connectors

To be used with VLM colour control dimmer mod. DL/RGB/24V or DLDC/RGB plus power supply unit suitable for the number of strips to connect (see table on page. 33) Max. temperature on the LED soldering tag (TC): 85°C

Max. no. of modules that can be connected: 14

OS8/300/S15/RGB		Red	Blue	Green
Nominal current	mA		150	
Total power	W		3.6	
Nominal input voltage	V		24	
Luminous flux	lumen	14.5	3.3	14
Approximate wave length	W	617	455	528

Modules/components with 3 RGB power LEDs OSP/LF/RGB series

made with three power LEDs (1 red, 1 green, 1 blue)
6°, 30° or 45° built in lens
equipped with connection cables (approx. 20cm)

Important: the series has the same diameter (51 mm) as dichroic MR16 (GU5.3)

OSP/LF6/RGB: with 6° lens

OSP/LF30/RGB: with 30° lens

OSP/LF30/RGB: with 45° lens

Also available in version "S" for serial connection to more than one module

To be used with VLM colour control dimmer mod. VLM DL/RGB/24V or DLDCC/RGB (only for version "S") plus power supply unit suitable for the number of modules to connect (see table on page. 33) Max. temp. on metal body (TC): 85°C

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OSP/LF6/RGB OSP/LF30/RGB OSP/LF45/RGB		Red	Blue	Green
Nominal current	mA	350	350	350
Maximum power	W	1.2	1.4	1.4
Average luminous flux	lumen	27	16	53
Lighting angle	o	6/30/45	6/30/45	6/30/45
Approximate wave length	nm	625	455	530

Submersion proof minispot with 3 RGB power LEDs

OSP/IP/D3/RGB series IP68 for submersion

 made with three power LEDs (1 red, 1 green, 1 blue)
 moulded in shock proof material
 threaded body M33x3
 supplied with fixing ring nut
 equipped with connection cables (approx. 50cm)

Also available in version "S" for serial connection to more than one module

To be used with VLM colour control dimmer mod. DL/RGB/24V or DLDCC/RGB (only for version "S") plus power supply unit suitable for the number of modules to connect (see table on page. 33) Max. temp. on metal body (TC): 85°C

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OSP/IP/D3/RGB		Red	Blue	Green
Nominal current	mA	350	350	350
Power	W	1.2	1.5	1.4
Average luminous flux	lumen	27	10	40
Approximative wave length	nm/K	617	470	530

Power supply units and dimmers for LED RGB modules

Тур	Code	Page ref.	up to 2	up to 3	up to 8	up to 12
RGB systems	with MULTI	-CHIP	LEDs			
Strip 15 RGB LED	0S8/300/S15/RGB	30	PTDL/RGB/24V		PTDL/RGB/40/24V	
Strip 15 RGB LED	0S8M/300/S15/RGB	30	PTDL/RGB/24V		PTDL/RGB/4024V	
Minispot 3 RGB LED	OSP/L45/SH3/RGB	29		PTDL/RGB/24V		PTDL/RGB/40/24V
Тур	Code	Page ref.	1			
RGB systems (white, green,	s with 3 poy blue)	wer L	EDs			
Spot 3x1W	OSP/LF6/RGB	31				
Spot 3x1W	OSP/LF30/RGB	31	3B/L1			
Spot 3x1W	OSP/LF45/RGB	31	DL/R(only	, the use of VLM p	Caution: ower supply units
Submersion proof Minispot 3x1W	OSP/IP/D3/RGB	32	PTI	and dir	, mmers guarantee modules	the VLM RGB LED will work properly.
Тур	Code	Page ref.	up to 5	up to 10	up to 50	
RGB systems with 3 power LEDs version "S"						
Minispot 1x3W	OSP/LF6S/RGB	31	ster)	(er)	ر با	
Minispot 1x3W	OSP/LF30S/RGB	31	B (Mas 1/24V	8 (Mast GB/SL 24V	t (Mast /RGB/S 10/24V	
Minispot 1x3W	OSP/LF45S/RGB	31	DC/40	CC/RGE DCC/R we) DC/40,	CC/RGB DLDCC we)	
Submersion proof Minispot 3x1W	OSP/IP/D3S/RGB	32	рцро рцро	DLDC + PL + PL	DLDC + 9xd + 5xd + 5xd	
≅D© 230V0	SLAVE (max 9)					
PIDC/40/					Max 5	
≅© 230V 0 PTDC/40,	SLAVE				Max 5	
	MAS	STER			Max 5	
Notes: (1) dimmer DI /RGF	B/L1 can be replaced by	profession	al dimmer DLDCC/R	GB		

(2) dimmer DL/RGB/24V can be replaced by professional dimmer DLDC/RGB

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PTDL/RGB/L1

(DL/RGB/L1 + PTDC/10/6V/B) Three-channel colour control module wired with appropriate VLM electronic power supply unit of the PTDC series Dimming functionality separated for each channel with a special key. Special variable colour program at each power supply reset.

PTDL/RGB/40/24V

(DL/RGB/24V + PTDC/40/24V) Three-channel colour control module wired with appropriate VLM electronic power supply unit of the PTDC series Dimming functionality separated for each channel with a special key. Special variable colour program at each power supply reset.

PTDL/RGB/24V

(DL/RGB/24V + PTDC/10/24V/B) Three-channel colour control module wired with appropriate VLM electronic power supply unit of the PTDC series Dimming functionality separated for each channel with a special key. Special variable colour program at each power supply reset.

DLDCC/RGB

Professional three-channel colour control module for RGB power LEDs Dimming functionality separated for each channel with a special potentiometer (or key) and possible IR remote control 3 colour changing programs that can be selected with the appropriate key. To be used with 24V power unit supplying the power required according to the load. Storage of the colour/program on power down, even at main power failure. ON/OFF key

Possibility of synchronised functionality of master (DLDCC/RGB) and slave (DLDCC/RGB/SL).

DLDC/RGB

Professional three-channel colour control module for RGB Multichip LEDs Dimming functionality separated for each channel with a special potentiometer (or key) and possible IR remote control 3 colour changing programs that can be selected with the appropriate key. To be used with 24V power unit supplying the power required according to the load. Storage of the colour/program on power down, even at main power failure. ON/OFF key Possibility of synchronised functionality of master (DLDC/RGB) and slave (DLDC/RGB/SL).

Power unit		PTDL/RGB/ 24V	PTDL/RGB/ 40/24V	PTDL/RGB/L1	DLDC/RGB	DLDCC/RGB
Nominal input voltage	V	95 - 240	95 - 240	95 - 240	24	24
Frequency	Hz	50 - 60	50 - 60	50 - 60		
Output current	mA	350	350	350	max 625	350
Output power at 110V	W	10	40	10		
Output voltage	V	24	24	24		
Input cables	mm2	2x0.75	2x0.75	2x0.75	1.5	1.5
Output cables (max)	mm2	4x0.50	jack diam. 5.5-2.1	4x0.5	1.5	1.5

"powered by" VLM LED systems

Examples of products and application

ARKISPOT

For ceilings and walls. Material: polyamide 66-RV. Pendant version (cable or lamp pedestal) or with adjustable lamp holder. LED modules: 1x1W PowerLED and 3x1W PowerLED. LED colours: white, red, green, yellow, blue.

For information regarding to this products we kindly ask you to contact us.

SIGN/STEPLIGHT

For installation, adjustable Material: aluminium or white painted metal LED module : 1x1.4W LED. LED colours: white, red, green, yellow, blue.

LED POT

For installation, adjustable Material: stainless steel. or white painted metal LED module : 1x1W PowerLED. LED colours: white, red, green, yellow, blue.

LED EYE

DESIGN

For installation Materials: polycarbonate (diffuser) - aluminium (body). Round and square version. LED module : 1x1W PowerLED. LED colours: white, red, green, yellow, blue.

MAGNUM

Material: stainless steel. Version with or without built in power unit. LED modules: 2x3.2W LED. LED colours: white, red, green, yellow, blue,

CANNON

Material: stainless steel. LED modules: 1x3.2W LED. LED colours: white, red, green, yellow, blue,

For information regarding to this products we kindly ask you to contact us.

LEDSì

System consisting of LED units clamped on a flexible electric bar Materials: polycarbonate (led unit) - PVC (flexible bar) LED module : 1x1W PowerLED (for each unit) LED colours: white, red, green, yellow, blue. Design: Francesco lannone (Italy).

LEDSignum

LED system for on the spot lighting of signs Made of glass or methacrylate. Consisting of a bar/carrier containing modular Ledstrips connected in series and a plate, with engraved or imprinted writing/images. Available in a version with SMD LEDs (white, red, green, yellow, blue); or with RGB Multi-chip LEDs (programmable colour variations) Design: Staffan Svensson/Frinab (Sweden).

Rai, 'Fiorello Revolution' programme Set designed by Gaetano Castelli Installed by Nova Impianti 99

"The Emporer's Clothes" Exhibition Rotonda della Besana, Milan

Mauri plant, Pasturo (LC) - Entrance Design Consuline/F. lannone

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