

# Long lifetime LIGHTING SOLUTIONS for professional use

Helping you to see things in better light!



PRODUCT CATALOGUE

# Valtavalo

Valtavalo, founded in 2008, is a lighting company with own development and production in Finland. We create energy-efficient lighting solutions with a focus on replaceability, flexibility and long lifetime, for the best possible total cost of ownership.

Our concept is based on a standardised (EN62776) replaceable light source, a LED tube, that can be easily installed to an existing fluorescent luminaire or to a completely new luminaire designed for LED tubes. A luminaire with a replaceable light source is an ecological and high-quality solution that saves money and nature. Changing light sources in the future is easy, which can bring considerable savings to maintenance and upkeep costs particularly if the luminaires are installed in a location that is hard to access.

# The standard guarantees future availability

Thanks to own product development, we have been at the forefront of development in one of the most competitive industries since the establishment of the company in 2008.

Our products comply with the international standard (EN 62776), which guarantees their availability and maintainability in the future. The standard, which came into force in 2014, allows the replacement of T8 and T5 fluorescent tubes with LED tubes, and their subsequent replacement with LED tubes that still comply with the standard, regardless of the manufacturer.

# Easy maintainability and performance even in challenging conditions

Manufacturing industry realised early on the benefits of solution, and is today one of our most important customer segments thanks to the reliability and ability of our products in demanding environments. Our concept has proven to be successful also in warehouses, logistics and retail premises as well as in sports facilities, parking garages, hospitals and schools.

In addition to our sales organisation, we serve our customers through wholesalers and distributors throughout Finland and Europe.





# Manufacturing in Finland

- \* The leading manufacturer of LED tubes in the Nordic countries since 2008
- \* Production and logistics facilities in Kajaani, Finland; head quarters in Oulu, Finland
- \* Branch office in Sweden, representation around Europe
- \* ISO 9001 and 14001 certified



# 66 DID YOU KNOW... our solutions are an environmentally friendly choice, saving energy and reducing the carbon footprint?

# We do sustainable choices for our environment and provide energy-saving and environmentally friendly alternatives. 4 www.valtavalo.com

# VALTAVALO IS A SUSTAINABLE CHOICE

The replaceable light source solution ensures carefree lighting for years to come. The standard light sources used in the luminaires are easy to install and replace on the luminaire body, regardless of the manufacturer. In turn, the luminaire bodies have no separate ballasts to break and are maintenance-free. This keeps also maintenance costs low, as the lighting can be upgraded simply by replacing the light source in the luminaire.



A reliable partner with more than 10 years of experience



Long-life, energy-efficient products



Easily replaceable light sources



Easy upgrade to the latest technology



Easy maintenance, low service and maintenance costs



Availability and brand independency



**Environmentally friendly** choice, low carbon footprint



Flicker-free light promotes well-being at work



Local manufacturing in Finland

# HIGH-QUALITY LIGHTING SOLUTIONS

# FOR DIFFERENT ENVIRONMENTS

A durable option also for challenging production facilities

The starting point for our product philosophy has always been to find the best solution for the customer — be it office space, hospital or even challenging industrial premise — and our wide product range covers the lighting needs of the public and private sectors well. Replaceable light sources enable implementing lighting with a long lifecycle in a variety of facilities, no matter the industry. High-quality LED lighting has been proven to increase the safety and efficiency of work. As a result, it benefits both the employer and the employees, and investments made in lighting quickly repay themselves.





















# LUMINAIRES WITH REPLACEABLE LIGHT SOURCE

To make it easy to choose the right solution among all the different options we have, we have put them together into ready-made packages with luminaire and replaceable light sources. When the light source has come to the end of its lifetime, it can easily be replaced with a new one without replacing the entire luminaire. For more detailed information on light sources, see pages 12-19.



# Prima plus - Industrial luminaire (IP66, IK10) with replaceable light source for demanding installations

Typical applications for Valtavalo Prima plus include car parks, industrial halls and cold rooms. The luminaire uses a standard LED tube as a replaceable light source, which contains everything needed for creating high-quality lighting. Depending on your lighting needs, you can choose Prima plus with a variety of light sources.

DESCRIPTION	LENGTH	LIGHT SOURCE	POWER	COLOUR TEMPERATURE	RATED LUMINOUS FLUX
Prima 18W, with replaceable G5 light source	1280 mm	G5 regular	1 x 18 W	4000 K	2,850 lm
Prima 36W, with replaceable G5 light source	1280 mm	G5 regular	2 x 18 W	4000 K	5,700 lm
Prima 22W, with replaceable G5 light source	1580 mm	G5 regular	1 x 22 W	4000 K	3,500 lm
Prima 44W, with replaceable G5 light source	1580 mm	G5 regular	2 x 22 W	4000 K	7,000 lm
Prima 35W, with replaceable High Power light source	1580 mm	High Power	1 x 35 W	4000 K	5,050 lm
Prima 70W, with replaceable High Power light source	1580 mm	High Power	2 x 35 W	4000 K	10,050 lm
Prima 19W, with replaceable E4 light source	1280 mm	E4	1 x 19 W	4000 K	2,550 lm
Prima 38W, with replaceable E4 light source	1280 mm	E4	2 x 19 W	4000 K	5,000 lm
Prima 24W, with replaceable E4 light source	1580 mm	E4	1 x 24 W	4000 K	3,250 lm
Prima 48W, with replaceable E4 light source	1580 mm	E4	2 x 24 W	4000 K	6,300 lm



# Valtavalo Prima trio – Industrial luminaire (IP66, IK10) for demanding installations

Valtavalo Prima trio is an industrial luminaire (IP66, IK07) with replaceable light sources for demanding installations. With polycarbonate housing and IP66 protection, Prima trio is particularly suitable for lighting spaces where dust and moisture are present. Depending on the lighting needs, the luminaire is available with two or three long-life G-series light sources.

DESCRIPTION	LENGTH	LIGHT SOURCE	POWER	COLOUR TEMPERATURE	RATED LUMINOUS FLUX
Prima trio 44W, with replaceable G5 light source	1576 mm	G5 regular	2 x 22 W	4000 K	6,700 lm
Prima trio 66W, with replaceable G5 light source	1576 mm	G5 regular	3 x 22 W	4000 K	10,000 lm



# Teva slim — open-housing luminaire with replaceable light sources

Typical applications for Valtavalo Teva slim are large and high spaces such as shops, warehouses and industrial premises. The luminaire uses a standard LED tube as a replaceable light source, which contains everything needed for creating high-quality lighting. Depending on the lighting needs, you can choose Teva with a variety of light sources and configurations.

DESCRIPTION	LENGTH	LIGHT SOURCE	POWER	COLOUR TEMPERATURE	RATED LUMINOUS FLUX	LIGHT DISTRIBUTION
Teva 36W, with replaceable G5 light source	1225 mm	G5 regular	2 x 18 W	4000 K	6,000 lm	120°
Teva 44W, with replaceable G5 light source	1525 mm	G5 regular	2 x 22 W	4000 K	7,400 lm	120°
Teva 66W, with replaceable G5 light source	1525 mm	G5 regular	3 x 22 W	4000 K	11,100 lm	120°
Teva 105W, with replaceable High Power light source	1525 mm	High Power	3 x 35 W	4000 K	15,400 lm	120°
Teva 70W, with replaceable Narrow Beam light source	1525 mm	Narrow Beam	2 x 35 W	4000 K	11,000 lm	45°
Teva 38W, with replaceable E4 light source	1225 mm	E4	2 x 19 W	4000 K	5,550 lm	200°
Teva 48W, with replaceable E4 light source	1525 mm	E4	2 x 24 W	4000 K	7,000 lm	200°
Teva 72W, with replaceable E4 light source	1525 mm	E4	3 x 24 W	4000 K	10,350 lm	200°



# Uniqa — stylish luminaire with replaceable light sources for offices and public spaces

Typical applications for Valtavalo Unique include offices, conference and meeting rooms, commercial premises and other public spaces. It can be pendant mounted or mounted on a lighting rail or directly on the ceiling surface. The luminaire uses a standard LED tube as a replaceable light source, which contains everything needed for creating high-quality lighting. Depending on your lighting needs, you can choose Unique with a variety of light sources.

DESCRIPTION	LENGTH	LIGHT SOURCE	POWER	COLOUR TEMPERATURE	RATED LUMINOUS FLUX
Uniqa 36W, with replaceable G5 light source	1270 mm	G5 regular	2 x 18 W	4000 K	5,350 lm
Uniqa 44W, with replaceable G5 light source	1570 mm	G5 regular	2 x 22 W	4000 K	6,600 lm
Uniqa 38W, with replaceable E4 light source	1270 mm	E4	2 x 19 W	4000 K	4,650 lm
Uniqa 48W, with replaceable E4 light source	1570 mm	E4	2 x 24 W	4000 K	5,900 lm



# Mirko — a modern linear luminaire with a replaceable light source

Mirko is a modern linear luminaire with a replaceable light source, which makes it suitable for a variety of uses. Thanks to its elegant design, it is well suitable for retail or office lighting solutions as well as for public spaces. By default, the luminaire is delivered with a glare reduction grid that preserves the light source's luminous efficacy. Also available with a dome with an opal finish. The luminaire uses a standard LED tube as a replaceable light source, which contains everything needed for creating high-quality lighting.

DESCRIPTION	LENGTH	LIGHT SOURCE	POWER	COLOUR TEMPERATURE	RATED LUMINOUS FLUX
Mirko 18W, with replaceable G5 light source	1240 mm	G5 regular	1 x 18 W	4000 K	2,550 lm
Mirko 22W, with replaceable G5 light source	1540 mm	G5 regular	1 x 22 W	4000 K	3,100 lm



# Beat - Versatile luminaire with replaceable light source for offices and public premises

Valtavalo Beat is particularly suitable for use in offices, shops and other public spaces as a high-quality general luminaire. The luminaire uses a standard LED tube as a replaceable light source, which contains everything needed for creating high-quality lighting. Depending on your lighting needs, you can choose Beat with a variety of light sources.

DESCRIPTION	LENGTH	LIGHT SOURCE	POWER	COLOUR TEMPERATURE	RATED LUMINOUS FLUX
Beat 18W, IP44, with replaceable G5 light source	1245 mm	G5 regular	1 x 18 W	4000 K	2,600 lm
Beat 36W, IP44, with replaceable G5 light source	1245 mm	G5 regular	2 x 18 W	4000 K	5,200 lm
Beat 22W, IP44, with replaceable G5 light source	1548 mm	G5 regular	1 x 22 W	4000 K	3,200 lm
Beat 44W, IP44, with replaceable G5 light source	1548 mm	G5 regular	2 x 22 W	4000 K	6,300 lm
Beat 10W, IP44, with replaceable E4 light source	690 mm	E4	2 x 10 W	4000 K	2,550 lm
Beat 19W, IP44, with replaceable E4 light source	1245 mm	E4	1 x 19 W	4000 K	2,650 lm
Beat 38W, IP44, with replaceable E4 light source	1245 mm	E4	2 x 19 W	4000 K	4,650 lm
Beat 24W, IP44, with replaceable E4 light source	1548 mm	E4	1 x 24 W	4000 K	3,400 lm
Beat 48W, IP44, with replaceable E4 light source	1548 mm	E4	2 x 24 W	4000 K	5,900 lm



# Mandy - linear luminaire with replaceable light source for worktops

Valtavalo Mandy is a versatile linear luminaire with replaceable light source. Usual sites for the Mandy model include office and kitchen workstations where a slim luminaire is required. The socket and the switch available as accessories make the Mandy luminaire a versatile option. The luminaire uses a standard LED tube as a replaceable light source, which contains everything needed for creating high-quality lighting.

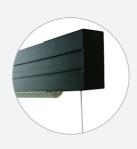
DESCRIPTION	LENGTH	LIGHT SOURCE	POWER	COLOUR TEMPERATURE	RATED LUMINOUS FLUX
Mandy 18W, with replaceable G5 light source	1398 mm	G5 regular	1 x 18 W	4000 K	2,550 lm
Mandy 22W, with replaceable G5 light source	1698 mm	G5 regular	1 x 22 W	4000 K	3,200 lm
Mandy 19W, with replaceable E4 light source	1398 mm	E4	1 x 19 W	4000 K	2,300 lm
Mandy 24W, with replaceable E4 light source	1698 mm	E4	1 x 24 W	4000 K	2,900 lm

# MORE OPTIONS

Our product range offers great breadth and variety. With a wide range of different luminaires and light sources, with different performance and specifications, there is usually a solution or combination available for almost any need. Visit www.valtavalo. com or contact us if you need something you can't find here.



**Valtavalo Uniqa direct/indirect light** is an elegant suspended luminaire with replaceable light source for offices and business areas. Indirect lighting creates comfortable and glarefree light. UGR<19. The luminaire uses a standard LED tube as a replaceable light source, which contains everything needed for creating high-quality lighting. Uniqa is also available as a recessed version.



**Valtavalo Mirko direct/indirect light** is a modern linear luminaire for office lighting solutions and for public spaces. The luminaire's dome provides stable light upward. The lamella grid reduces glare for the light directed downward.



**Valtavalo Ancora** is an industrial luminaire designed for challenging operating conditions. Due to the housing made of fibre-reinforced polyester and the cover made of PMMA, it is particularly suitable for agricultural buildings.



**Valtavalo Anticor** is an industrial luminaire designed for challenging operating conditions. Typical applications include industrial interior and exterior spaces, agricultural buildings, warehouses and work shops.



**Valtavalo Game** is suitable for use in school gymnasiums, sports halls and indoor tennis courts as well as other facilities where the luminaire need to be shockproof and not break when hit by a ball.

# LIGHT SOURCES

A luminaire with a replaceable light source is an ecological and high-quality solution that saves money and nature. Maintenance and upkeep costs are considerably reduced since lighting can easily be updated by replacing the light source in the luminaire.

# **G-SERIES LED TUBE**

# Made of anodised aluminium

end caps of PC-plastic

# Ideal for operating hours up to 24 hrs a day

A long service life ensure significant savings in maintenance costs, especially in hard-to-access areas.

# For demanding conditions and high temperatures

Wide operating temperature range -40°C - +50°C (High Temp up to  $+70^{\circ}$ C) and high vibration tolerance.

# High ceilings

The most luminous replaceable LED light source: 180 lm/W and 5600 lm

# Flicker-free light

Non-flickering, excellent quality light with a flicker percentage of less than 1%.

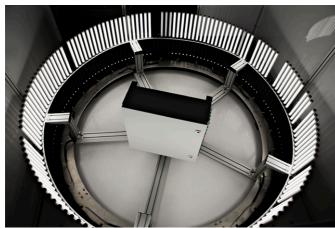
High CRI Up to CRI 92—98,5.

# Several dimming options to choose from

Valtavalo Dimmable is compatible with trailing edge dimmer, SwitchDim or Dali.

# **Closed fixtures**

\*In a closed fixture, the temperature is usually about 10 degrees higher than the surroundings. Therefore, we recommend to use the G-series LED tubes in this type of installation to ensure the longest possible lifetime.



At the end of a fully automated production process each LED tube is carefully tested ensuring high quality of the products.

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# Traditional T8 fluorescent tube Valtavalo G-series LED tube 125 000 hrs Valtavalo E-series LED tube 64 000 hrs Competing professional quality LED tube 50 000 hrs Consumer quality LED tube 30 000 hrs

# **E-SERIES LED TUBE**

# Made of glass, end caps of polycarbonate

Traditional glass frame with shatterproof plastic coating

# Ideal for operating hours up to 8-10 hrs a day Short payback period

# Cost-effective solution for general lighting in all kinds of premises

for example, offices, business premises and other public buildings. Thanks to the low energy consumption and the minimum maintenance costs, operating costs are also low.

# Open fixtures

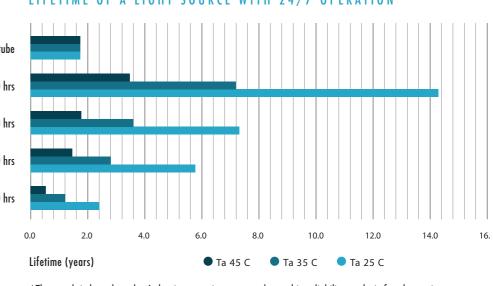
# Flicker-free light

Non-flickering, excellent quality light with a flicker percentage of less than 3%.

# Quick and simple upgrade

of the existing lighting system to a new without having to replace the entire luminaires.

# LIFETIME OF A LIGHT SOURCE WITH 24/7 OPERATION



<sup>\*</sup>The graph is based on the Arrhenius equation commonly used in reliability analysis for electronics.

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# G-series light sources

With their long lifetime and high quality, the aluminium-framed G-series light sources are suitable for a wide range of installations, also in challenging conditions. They offer significant savings in maintenance and upkeep costs, especially in difficult-to-access areas. The light sources are manufactured in Valtavalo's own factory in Kajaani according to standard EN62776.

# Valtavalo G5 and G4 regular

The standard models of G-series G5 and G4 LED tubes are suitable for use in spaces where the lights are on for long periods of time - up to 24/7. They provide flicker-free, high quality light with a flicker percentage of around 1%. It has been found that flicker-free light plays a significant role in improving wellbeing at work as well as in preventing occupational accidents particularly in industrial fields.

MODEL G5   4000K	Optics	Length	Power	Weight	Rated luminous flux	Energy efficiency
VV22E150G5-840	Semiopal	150 cm	22 W	445 g	3,700 lm	С
VV18E120G5-840	Semiopal	120 cm	18 W	385 g	3,000 lm	С

MODEL G5   5000K	Optics	Length	Power	Weight	Rated luminous flux	Energy efficiency
VV22E150G5-850	Semiopal	150 cm	22 W	445 g	3,800 lm	C
VV18E120G5-850	Semiopal	120 cm	18 W	385 g	3,100 lm	C

MODEL G4   4000K	Optics	Length	Power	Weight	Rated luminous flux	Energy efficiency
VV24E150G4-840	Semiopal	150 cm	24 W	445 g	3,200 lm	E
VV19E120G4-840	Semiopal	120 cm	19 W	385 g	2,550 lm	E
VV15E090G4-840	Semiopal	90 cm	15 W	300 g	2,000 lm	Е
VV10E060G4-840	Semiopal	60 cm	10 W	225 g	1,350 lm	D
VV07E045G4-840	Semiopal	45 cm	7 W	190 g	950 lm	D

MODEL G5 AND G4								
Input voltage	230 V AC, 50/60 Hz	Socket type	T8 / G13					
THD	<20%	Power factor	0.95					
Colour rendering index (CRI)	Ra > 80	Colour consistency	MacAdam 3 SDCM					
Beam angle	120°	Flickering percentage	1 %					
Flicker (Pst LM)	0,1	Stroboscopic effect (SVM)	0,1					
Average lifespan	125 000 hours (L <sub>70</sub> B <sub>50</sub> / T <sub>0</sub> 25°C)	Warranty	7 years					
Operating temperature	-40°C - +50°C	Operating humidity	< 90 %					
Protection class	IP20	Markings	CE					
Material	Anodis	Anodised aluminium, PC-plastic, free of glue and silicone						
Additional information	Standard colour temperatures: 4000K (G4) and 4000K & 5000K (G5).  For more information on colour temperatures, please contact Valtavalo sales.							

# Valtavalo Dimmable

When conventional lighting control is not enough or when there is a need for several different lighting levels in the same space, the Dimmable LED tube is an ideal option. It can be used with trailing edge dimmer or integrated into a larger system using separate luminaire-specific SwitchDim or DALI controllers. It also meets the requirements of the Ecodesign Directive (2021) in terms of flicker. Please note that requirements of the Directive for flicker values are given when the light source is operating at full power and when dimmed, the amount of flicker is affected by the dimmer used.

MODEL	coloor folliporatoro	Opiics	Longin	Torror Horgin Raioa		Raioa ioiiiiioos iiox	Energy officioney	
VV23E150G6D-840	4000 K	Opal	150 cm	150 cm 23 W 445 g		3,700 lm	С	
VV19E120G6D-840	4000 K	Opal	120 cm	19 W	385 g	3,000 lm	D	
Input voltage		230 V AC, 50/6	0 Hz	Socket type			T8 / G13	
THD		< 25 %		Power factor			0.90	
Colour rendering index (C	CRI)	Ra > 80		Colour consis	tency	Ма	cAdam 3 SDCM	
Beam angle		120°		Flickering pe	rcentage	2 %	2 % (at full power)	
Flicker (Pst LM)		0,1 (at full pow	ver)	Stroboscopic effect (SVM)		0,1	0,1 (at full power)	
Average lifespan	125 (	000 hours (L <sub>70</sub> B <sub>50</sub>	/T <sub>a</sub> 25°C)	Warranty			5 years	
Operating temperature		-40°C − +50	°C	Operating humidity			< 90 %	
Protection class		IP20					CE	
Material		Anodised aluminium, PC-plastic, free of glue and silicone						
Additional information	S	Standard colour temperature 4000K. For more information on colour temperatures, please contact Valtavalo sales.					act Valtavalo sales.	

# New energy efficiency classes

The new energy labelling regulations for light sources has come into effect on 1 September 2021. New energy efficiency classes are based on more easily readable lm/W -efficiency instead of the old Energy Efficiency Index. Energy classes have been rescaled totally: for example, earlier best A++ has been categorized to E class and A+ to worst G class.

class	lm/W
А	> 210
В	185 - 210
C	160 - 184
D	135 - 159
E	110 - 134
F	85 - 109
G	< 85
'	

# Valtavalo High CRI

The high colour rendering index becomes important when illuminating spaces where the experience of true and natural colours is essential. Such spaces include clothing stores, fruit and vegetable departments, car dealerships, museums and art galleries and hospitals, to mention a few. Usually higher CRI means big compromises between luminous efficacy and high colour rendering. The new Valtavalo High CRI product family does not compromise but combines high efficacy with high color rendering.

MODEL	Colour temperature	Optics	Length	Power	Weight	Rated luminous flux	Energy efficiency
VV22E150G6-940	4000 K	Semiopal	150 cm	22 W	445 g	3,200 lm	D
VV18E120G6-940	4000 K	Semiopal	120 cm	18 W	385 g	2,600 lm	D

Input voltage	230 V AC, 50/60 Hz	Socket type	T8 / G13				
THD	< 20 %	Power factor	0.95				
Colour rendering index (CRI)	CRI 92, R9 > 50	Colour consistency	MacAdam 3 SDCM				
Beam angle	120°	Flickering percentage	1 %				
Flicker (Pst LM)	0,1	Stroboscopic effect (SVM)	0,1				
Average lifespan	50 000 hours (L <sub>70</sub> B <sub>50</sub> / T <sub>a</sub> 25°C)	Warranty	5 years				
Operating temperature	-40°C − +50°C	Operating humidity	< 90 %				
Protection class	IP20	IP20 Markings					
Material	Anodised aluminium, PC-plastic, free of glue and silicone						
Additional information	Standard colour temperature 4000K. For more information on colour temperatures, please contact Valtavalo sales.						



# Valtavalo High Temp

Ability to operate under wide temperature range (up to +70 °C), high tolerance to vibration as well as long service life make G5 High Temp an excellent choice for demanding industrial applications. Typical installation sites include bakeries and challenging industrial environments.

MODEL	Colour temperature	Optics	Length	Power	Weight	Rated luminous flux	Energy efficiency
VV22E150HT-840	4000 K	Semiopal	150 cm	22 W	445 g	3,700 lm	C
VV18E120HT-840	4000 K	Semiopal	120 cm	18 W	385 g	3,000 lm	C
VV22E150HT-850	5000 K	Semiopal	150 cm	22 W	445 g	3,800 lm	C
VV18E120HT-850	5000 K	Semiopal	120 cm	18 W	385 g	3,100 lm	C

Input voltage	230 V AC, 50/60 Hz	Socket type	T8 / G13			
THD	< 20 %	Power factor	0.95			
Colour rendering index (CRI)	Ra > 80	Colour consistency	MacAdam 3 SDCM			
Beam angle	120°	Flickering percentage	1 %			
Flicker (Pst LM)	0,1	Stroboscopic effect (SVM)	0,1			
Average lifespan	125 000 hours ( $L_{70}B_{50}$ / $T_a25$ °C) 60 000 hours ( $L_{70}B_{50}$ / $T_a60$ °C)	Warranty	5 years			
Operating temperature	-40°C − +70°C	Operating humidity	< 90 %			
Protection class	IP20	Markings	CE			
Material	Anodised aluminium, PC-plastic, free of glue and silicone					

# Valtavalo High Power

With a luminous flux of up to 5,600 lm, Valtavalo G5 High Power is the best choice for all spaces where there is a requirement for a large amount of high-quality light. Example applications include industrial premises with high ceilings (10-15 m) or for finely detailed work.

MODEL	Colour temperature	Optics	Length	Power	Weight	Rated luminous flux	Energy efficiency
VV35E150HP-840	4000 K	Semiopal	150 cm	35 W	445 g	5,300 lm	D
VV35E150HP-850	5000 K	Semiopal	150 cm	35 W	445 g	5,400 lm	D

Input voltage	230 V AC, 50/60 Hz	Socket type	T8 / G13			
THD	< 20 %	Power factor	0.95			
Colour rendering index (CRI)	Ra > 8 0	Colour consistency	MacAdam 3 SDCM			
Beam angle	120°	Flickering percentage	1 %			
Flicker (Pst LM)	0,1	Stroboscopic effect (SVM)	0,1			
Average lifespan	83 000 hours (L <sub>70</sub> B <sub>50</sub> / T <sub>0</sub> 25°C)	Warranty	5 years			
Operating temperature	-40°C − +50°C	Operating humidity	< 90 %			
Protection class	IP20	Markings	CE			
Material	Anodised aluminium, PC-plastic, free of glue and silicone					

# Valtavalo Narrow Beam

Narrow Beam LED tube with 45° light distribution is designed especially for high spaces (8-13 m), and its narrow light distribution makes it possible to use solutions with replaceable light sources in even higher spaces than before.

MODEL	Colour temperature	Optics	Length	Power	Weight	Rated luminous flux	Energy efficiency
VV35NB150G5-840	4000 K	clear	150 cm	35 W	445 g	5,500 lm	В
VV35NB150G5-850	5000 K	clear	150 cm	35 W	445 g	5,600 lm	В

Input voltage	230 V AC, 50/60 Hz	Socket type	T8 / G13			
THD	< 20 %	Power factor	0.95			
Colour rendering index (CRI)	Ra > 80	Colour consistency	MacAdam 3 SDCM			
Beam angle	45°	Flickering percentage	1 %			
Flicker (Pst LM)	0,1	Stroboscopic effect (SVM)	0,1			
Average lifespan	83 000 hours (L <sub>70</sub> B <sub>50</sub> / T <sub>a</sub> 25°C)	Warranty	5 years			
Operating temperature	-40°C - +50°C	Operating humidity	< 90 %			
Protection class	IP20	Markings	CE			
Material	Anodised aluminium, PC-plastic, free of glue and silicone					

# Valtavalo Full Spectrum

Valtavalo full spectrum light sources are designed to mimic natural outdoor sunlight. They produce light of high colour rendering (CRI 97-98,5), which enables accurate color appearance.

MODEL	Colour temperature	Optics	Length	Power	Rated luminous flux	CRI/R9	Fidelity index / Gammut t index
VV35FS150G5-950	5000 K	Opal	150 cm	36 W	3,550 lm	97,7 / 97,4	94 / 99
VV22FS150G5-950	5000 K	Opal	150 cm	22 W	2,200 lm	97,7 / 97,4	94 / 99
VV18FS120G5-950	5000 K	Opal	120 cm	18 W	1,800 lm	97,7 / 97,4	94 / 99

Input voltage	230 V AC, 50/60 Hz	Socket type	T8 / G13			
THD	< 20 %	Power factor	0.95			
Colour consistency	MacAdam 3 SDCM	Flickering percentage	1 %			
Flicker (Pst LM)	0,1	Stroboscopic effect (SVM)	0,2			
Average lifespan	60 000 hours (L <sub>70</sub> B <sub>50</sub> / T <sub>a</sub> 25°C)	Warranty	5 years			
Operating temperature	-40°C - +50°C	Operating humidity	< 90 %			
Protection class	IP20	Markings	CE			
Beam angle	120 °	Energy efficiency	E			
Material	Anodised aluminium, PC-plastic, free of glue and silicone					

# E-series light sources

Valtavalo E4 LED tube is a high-performance and cost-effective alternative for general lighting in a wide range of spaces, such as offices and other commercial premises. The traditional glass body is shatterproofed with a plastic coating, making the E4 ideal for applications where lamp breakage must not disrupt the use of the space. With a lifetime of 64,000 hours and competitive pricing, the solution is cost-effective and guarantees a short payback period. The Valtavalo E4 LED tube provides flicker-free, high quality light with a flicker percentage of less than 3%.

# Valtavalo E4 regular

MODEL	Colour temperature	Optics	Length	Power	Weight	Rated luminous flux	Energy efficiency
VV24F150E4-840	4000 K	Opal	150 cm	24 W	250 g	3,800 lm	D
VV19F120E4-840	4000 K	Opal	120 cm	19 W	210 g	3,000 lm	D
VV10F060E4-840	4000 K	Opal	60 cm	10 W	130 g	1,500 lm	D
VV08F045E4-840	4000 K	Opal	45 cm	8 W	110 g	1,200 lm	D

Input voltage	230 V AC, 50/60 Hz	Socket tyoe	T8 / G13
THD	15 %	Power factor	0.9
Colour rendering index (CRI)	Ra > 80	Colour consistency	MacAdam 3 SDCM
Beam angle	200°	Flickering percentage	< 3 %
Flicker (Pst LM)	0,2	Stroboscopic effect (SVM)	0,1
Average lifespan	64 000 hours (L <sub>70</sub> B <sub>50</sub> / T <sub>a</sub> 25°C)	Warranty	5 years
Operating temperature	-20°C - +40°C	Operating temperature	< 90 %
Protection class	IP20	Markings	CE
Material	Plastic coated glass, end caps of PC-plastic (shatterproof)		





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