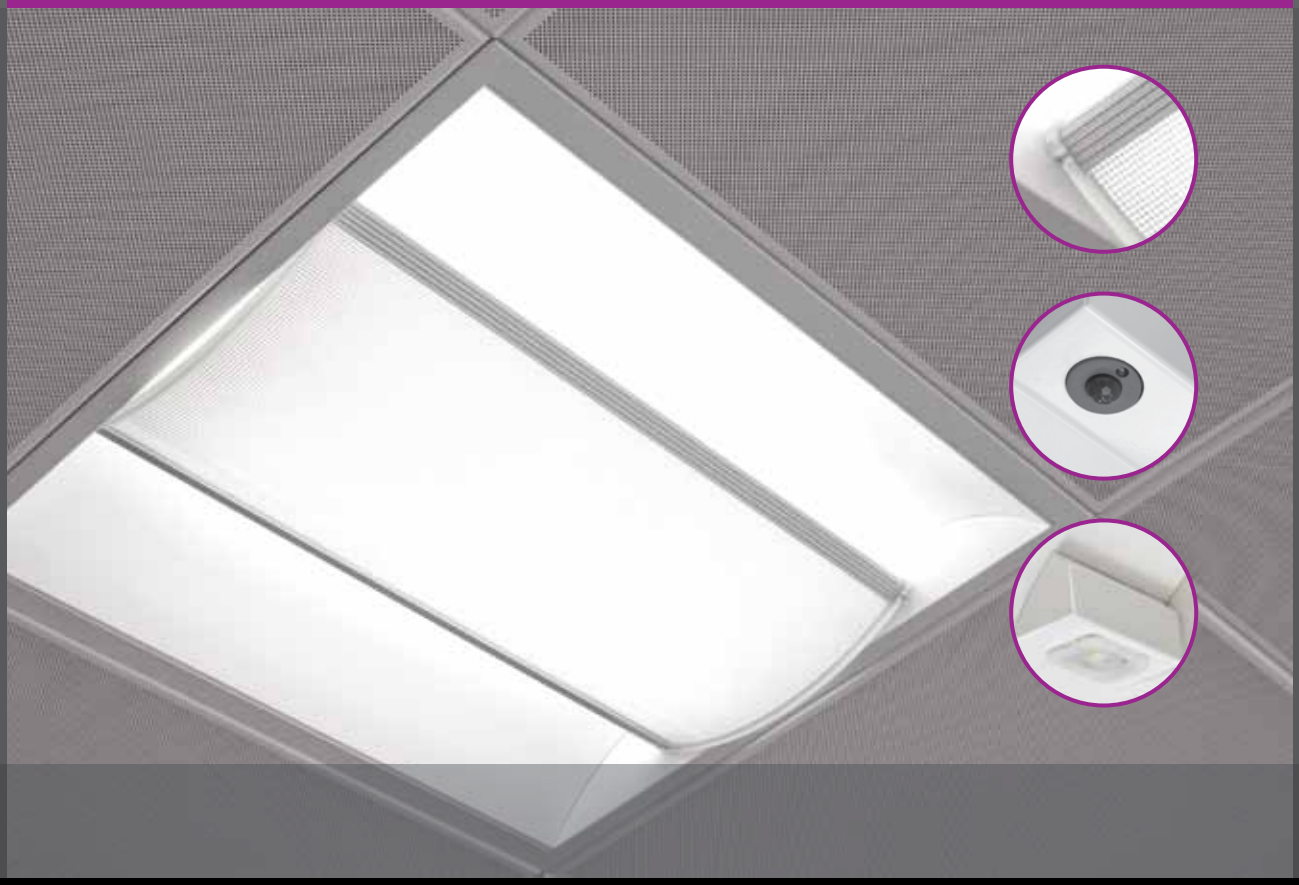
Kallista

Flexible, efficient and cost-effective



Clearvision

Clearvision overview

Clearvision Lighting has a 15-year pedigree in ergonomic and environmental lighting. We have been at the leading edge of the industry in adopting new technology and design techniques to improve workplaces and reduce energy consumption.

Our appreciation of daylight has been apparent from the beginning. One of our first innovations in ergonomics was Virtual Daylight® in 1997, which has since been copied by many other companies.

We focus on lens technologies (some patented) that are central to our most successful products. We find that they're an effective means of optimising design between efficiency, glare control and useful light distribution.

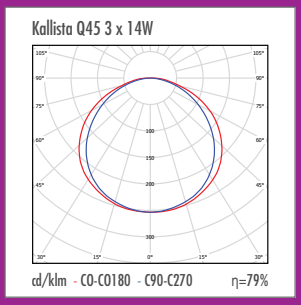
Clearvision is a project lighting company with a focus on customer applications for our products. We therefore provide a full technical support service–including Dialux (plug-in available), AutoCAD, emergency test and control systems.

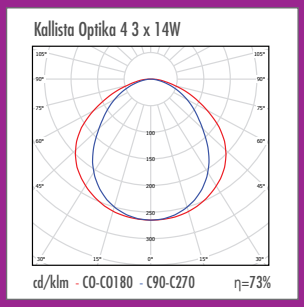
Please contact our technical department for design and product related questions and sales for project quotations. All queries can be addressed to enquiries@clearvisionlighting.com or on 01252 344011.

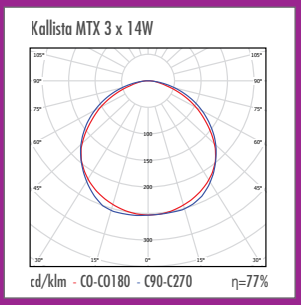
Order codes	Code	
Kallista	KAL6-	
Body		
596mm x 596mm (T-grid) standard	-TG6	
599mm x 599mm (Metal tile)	-MTL	
585mm x 585mm (SAS 130)	-TEG	
Light source		Lumens
1 x 40W (TC-L)	-140	3500
1 x 55W (TC-L)	-155	4800
2 x 24W (T5)	-224	3500
2 x 40W (T5)	-240	7000
3 x 14W (T5)	-314	3600
3 x 24W (T5)	-324	5250
4 x 14W (T5)	-414	4800
2 x 28W (T5)	-228	5200
2 x 54W (T5)	-254	8900
Lens options		
MTX	-MTX	
Grid	-GRD	
Q45	-Q45	
Optika 4	-OPT4	
Dimming		
DSI	-DSI	
1-10V analogue	-110	
DALI	-DALI	
Switch dimming	-SD	
Options		
3 hour emergency facility	-EMI	
3 hour emergency self-test	-EST	
3 hour emergency central test	-DEM	
3 hour LED emergency facility	-LEM	
3 hour LED emergency self-test	-LEST	
3 hour LED emergency central test	-LDEM	
Air handling (20 l/s)	-AH	
Low void	-LV	
Fixing arms (offer up installation)	-FB2	

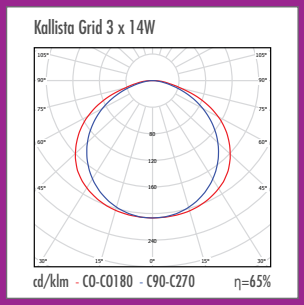
Key benefits of the Kallista range

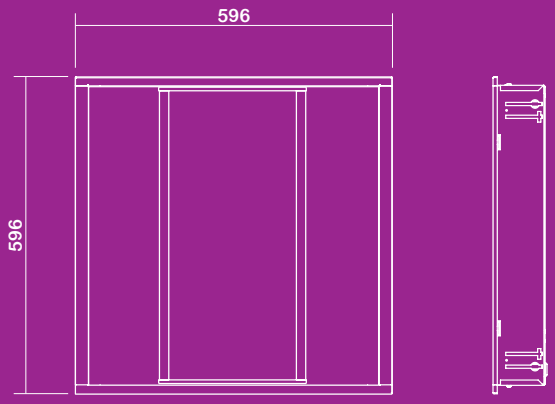
- High efficiency
- High wall illuminance (LG7)
- Wide light distribution
- Integral controls (optional at extra cost)
- Led emergency (optional at extra cost)











The Kallista

The Kallista is a very flexible light fitting, which is ideal for highly efficient workspace (below 10W/m^2 in energy consumption). The wide range of lenses, lamp formats and luminaire bodies means that there is always a suitable available version. This is true not only for nearly all offices, but many other spaces as well, such as classrooms. The Kallista is class leading in its output (LOR up to 79%) and the curved optics can provide the high wall illuminance suited to LG7 requirements.

Kallista products can be supplied with integral control for daylight & presence detection (*Pages 12 & 13*) as well as LED emergency versions (*Pages 10 & 11*) to meet with the most stringent environmental targets.

Fast calculation table - Luminaire quantities

Reflectances: 70/50/20 Maintenance factor: 0.80 Ceiling height: 2.70m

The below figures are approximate, suitable as a rough guide for budget costing.
For specific project designs and calculations please contact our design department
enquiries@clearvisionlighting.com

3 x 14W MTX

Lux	40m^2	60m^2	80m^2	100m^2	200m^2	300m^2
300	8	11	14	17	29	42
400	11	15	18	22	39	56
500	14	18	23	27	49	69

4 x 14W MTX

Lux	40m^2	60m^2	80m^2	100m^2	200m^2	300m^2
300	6	8	10	13	22	31
400	8	11	14	17	29	42
500	10	14	17	21	37	52

The Kallista 600

Here you see the Kallista installed in an office on 3.0 x 2.4m centres with good uniformity, which very few modular fittings can achieve. The walls and ceilings are light in keeping with LG7 office design guidance. This 4x14W version can deliver comfortable ergonomic lighting at well under 10W/m^2.

The Kallista 600 modular is standard with 596mm body for either laying-in or offering up in T-Grid ceilings. There is also a 585mm body where integration with tegular tiles is required. Air handling and 599mm bodies (for metal tile ceilings) are also available.

The Kallista Low Void (KLV) used at Blink Point (opposite) requires less than 70mm of ceiling void and the (599 version) body integrates well the steel ceiling tiles.

The Kallista 1200

Although 1200m modules are less common than in the past, they can be an efficient and cost-effective approach. The availability of Eco T5 lamps means that additional energy savings can be achieved over standard T5HE. This means that 1200 fittings can, for the right space, offer a solution that is both ergonomic and at the lowest watts/square metre.

Kallista lenses

MTX (Standard)
The MTX lens is constructed from three layers of high clarity microprismatic polyester co-polymer material retained within a frame of anodised aluminium extrusion with polycarbonate end caps. The lens is designed for retention within luminaire bodies via sprung loaded polypropylene shoot bolts.

The MTX optical performance is derived from the transaxial relationship between air gaps and linear microprisms. Single pass transmission of each layer is in excess of 90%, which means an 80% transmission level is possible from the lens when installed with a luminaire. The high diffusion properties reduce lamp visibility and creates an attractive appearance. The lenses are designed for interior use but the optical materials are rated as having good resistance to UV discolouration at interior levels. The material is less brittle and stronger than acrylic, but less strong than polycarbonate.

The room face polyester co-polymer material of the MTX lens has been rated to Class 1Y (BS476.Part 7) at a 3mm test specimen thickness and passes UL94 HB for a flammability rating. The material has also been rated to 950°C for the Glow Wire Test at this test thickness. The material has been classified as non-toxic in the US for the production of fumes in the event of combustion and has achieved an F1 rating for the toxicity and opacity of fumes in France (at 3mm thickness).

OPTIKA
The Optika II lens is constructed from several layers of different materials comprising PETG and LDPE retained within a frame of anodised aluminium extrusion with polycarbonate end caps. The lens is designed for retention with luminaire bodies via sprung loaded polypropylene shoot bolts.

The Optika optical performance is derived from the relationship between the prismatic PMMA, air gaps, microcellular LDPE and PETG underlayer. Multiple refractions through the layers reduces glare through polarisation. The light losses in this form of glare reduction compare favourably with most diffusion methods. Because transmission losses are greater for polarising lenses, Clearvision recommends reflux optical design with Optika lenses.

The lenses are designed for interior use but the optical materials are rated as having good resistance to UV discolouration at interior levels. The PMMA material is potentially brittle but protected by a more robust lower layer.

Optika has both PETG and prismatic layers, which have a Class 1Y, 950°C glow wire, non toxic rating. However the PMMA layer may in some cases require the protection of a 3mm polycarbonate layer, which can be specified as an Optika IV lens.

GRID

The Grid lens is constructed from three layers of PETG and PMMA. The central layer has an aluminium grid on the surface to create the visible pattern. All three layers are retained within a frame of anodised aluminium extrusion with polycarbonate end caps. The lens is designed for retention with luminaire bodies via sprung loaded polypropylene shoot bolts.

The Grid optical performance is derived from the relationship between the metallised PMMA and the PETG layers. Multiple reflection and refractions through the layers reduces glare. The light losses are less than for perforated metal systems of similar appearance.

The lenses are designed for interior use but the optical materials are rated as having good resistance to UV discolouration at interior levels. The grid is designed to compare favourably with the maintenance challenges posed by perforated metal with backing layers.

Grid has a standard PETG underlayer, with a Class 1Y, 950°C glow wire, non toxic rating. However the PMMA layer may in some cases require the protection of a 3mm layer polycarbonate, which can be specified as the GRID F lens.

Q45

The Q45 lens is constructed from two layers, PETG and Polycarbonate. The lower layer has a number of circular Fresnel radial prism, which create the visible ‘fisheye’ pattern.
All three layers are retained within a frame of anodised aluminium extrusion with polycarbonate end caps. The lens is designed for retention with luminaire bodies via sprung loaded polypropylene shoot bolts.

The Q45 optics are the result of the relationship between the radial Fresnel prism and the translucent upper, which creates a 3D effect within the module. The light is spread out by the fisheye optics of the radial prisms. Incident light is segmented into the appearance of multiple sources. This combination of optics has a strong visual effect.

The lenses are designed for interior use but the optical materials are rated as having good resistance to UV discolouration at interior levels. The materials – PETG and PC – are both resistant to abrasion and impact which has a Class 1Y, 950°C glow wire, non toxic rating. The lower layer of polycarbonate and PETG also has low flammability characteristics and would not usually require additional fire protection on the underside.

Emergency lighting

The Kallista range, as with the majority of Clearvision products, is available with a 3 hour maintained emergency facility, where one of the fluorescent lamps also functions as the light source under emergency conditions.

The Kallista also offers an emergency LED option at a similar cost to a conventional emergency pack. A small 1.2W LED emitter installed neatly within the corner of the luminaire, directs the light exactly where it's needed under emergency conditions.

Due to the lower energy requirement of the LED a smaller battery pack can be supplied and is installed, together with the emergency driver, within the luminaire. The green LED charge indicator is incorporated within the emitter and is also used for self-test reporting. The long life of LEDs, coupled with the limited hours of use demanded by this application, make the Kallista LED emergency option a robust solution.

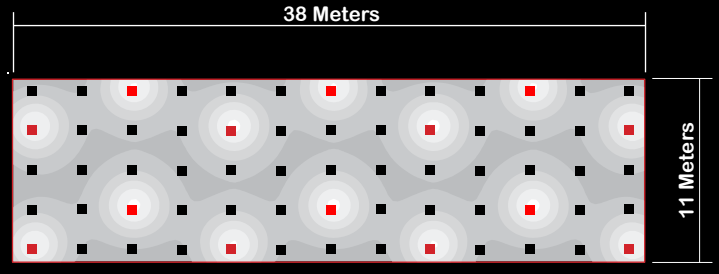
Replacement costs are reduced due to the LED emergency system using a smaller, lower cost emergency battery pack. To facilitate this, the design of the Kallista LED emergency reflector wing allows for it to be quickly and easily removed saving labour costs.

As with our conventional emergency range, LED emergency is available in self test (to BS EN 62034 : 2006) and DALI reporting versions.

Integrated LED emergency

Results

E_{av} [lx]	1.15
E_{min} [lx]	0.50
E_{max} [lx]	2.44
u0	0.436
E_{min}/E_{max}	0.205



Example: Emergency greyscale output from Dialux

Control options

System	K-Space	K-Sense	E-Sense
Features			
Dimming	•	•	•
Presence detection	•	•	•
Absence detection	•	•	•
Daylight regulation	•	•	•
Scene setting	•		•
Warm/cool colour control	•		•
Emergency monitoring			•
Interface options			
Push-button	•	•	•
Radio freqency control	•	•	•
Infrared control	•		•
Touch screen control	•		•
Audio visual interface	•		•
Applications			
Cellular offices		•	•
Class rooms		•	•
Open-plan offices	•	•	•
Meeting/conference rooms	•		•
Wards		•	•
Lecture rooms	•	•	•

Integrated PIR/IR/Light sensor

Controls systems

K-SENSE (fig.1)

K-Sense builds on the simple control offered by Clearvision's basic dimming system - the K-Dim with the addition of a multi-sensor housed neatly within the Kallista luminaire itself. As well as simplifying wiring and avoiding additional ceiling cutouts, the in-built sensor introduces presence/absence detection and daylight regulation features to the Kallista range.

The movement and daylight sensor head is housed neatly within a specially designed reflector wing, minimising any impact on the visual appearance or photometric performance of the product (*see page 11*).

Kallista master luminaires incorporating sensors can be configured to simply control the slave luminaires around them, or be interconnected to act as one system. This modular approach provides a high level of flexibility, making the K-Sense system ideal for many types of space.

For movement detection, K-Sense can be configured to respond in either presence or absence mode or be disabled totally. In presence mode wherever movement is detected the lighting is energised and remains so until no movement has been detected for 15 minutes, at which point the lighting will gradually dim down to off. Likewise anyone entering an area previously vacated for longer than 15 minutes will trigger the lighting on. Absence mode has identical behaviour to presence, with the difference that the lighting, once off, must be reactivated by a switch. This avoids the lights activating accidentally and is of particular use in cellular offices where people can enter momentarily.

Daylight regulation maintains the light level within a space around the current dimming level set via wall switch or remote. Daylight regulation may also be independently disabled if necessary.

K-SPACE (fig.2)

K-Space offers almost limitless possibilities for control of the Kallista luminaire range and other lighting products within a single space or entire building. Using the DALI (Digital Addressable Lighting Interface) protocol, each Kallista is simply connected to a pair of dimming wires leading back to a control/power supply unit. Likewise input devices such as control panels, sensors and actuators may also be hung off the control lines at any point.

Fig 2. More advanced features are achieved by the addition of interface units. This allows the system to interact with a range of external devices including AV (audio visual) systems, motorised blinds, mains dimmable lighting and other switchable loads.

A single K-Space network has a cap to the number of devices connected to it, which is usually around 64-128, dependant on the controller used and each devices power requirements. Multiple K-Space networks can easily co-exist in isolation to each other, but where a building wide solution is required i.e for central monitoring purposes, the use of a router is required.

Located at the end of each DALI bus, individual routers are linked together using ethernet cables and communicate with one another using TCP/IP which is the same protocol used for computer networks. As well as a being able to link a virtually limitless number of networks, this TCP/IP 'Backbone' is ready for computer control and from there can be integrated into an existing BMS (Building Management System). All the system information is stored within the K-space network meaning that once programmed by computer, it can be disconnected as it's no longer required for day-to-day operation.

For more information on controls please email ***enquires@clearvisionlighting.com***

Fig 1

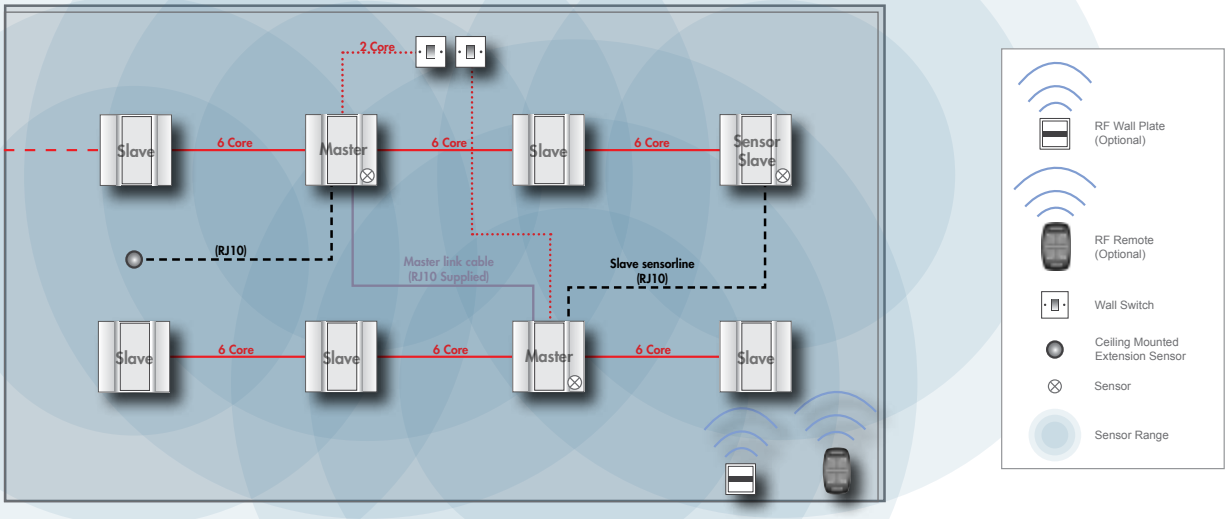
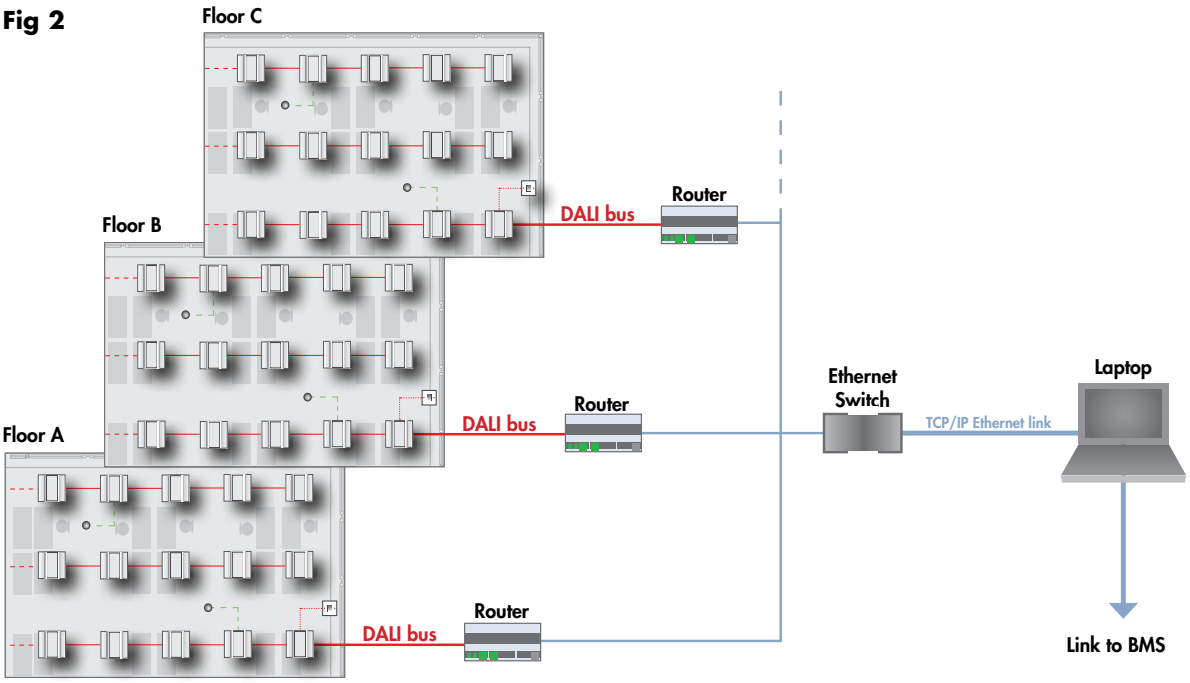

2 Core
Slave
6 Core
Master
6 Core
Slave
6 Core
Sensor Slave
(RJ10)
Master link cable (RJ10 Supplied)
Slave sensorline (RJ10)
Slave
6 Core
Slave
6 Core
Master
6 Core
Slave
RF Wall Plate (Optional)
RF Remote (Optional)
Wall Switch
Ceiling Mounted Extension Sensor
Sensor
Sensor Range

Fig 2


Floor C
Floor B
Floor A
DALI bus
Router
DALI bus
Router
DALI bus
Router
Ethernet Switch
TCP/IP Ethernet link
Laptop
Link to BMS

Related Products

Calyx

Chiara

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DIALux

A Clearvision Dialux Plug-in is available for download from www.clearvisionlighting.com

Clearvision is an ergonomic lighting company that designs and manufactures energy efficient lighting. Our products are developed with the environment in mind whilst also leading in performance and appearance. Our design and technical teams are on hand to support our customers throughout the lifetime of our products.

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