

#### OVER 20 YEARS OF GENUINE LASER DISPLAY ENGINEERING



PRODUCT CATALOGUE 2017

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#### **Product overview**

## Laser Display Systems

Cosy private venue or large sparkling dance party? New Clubmax will top it all off!



For outdoor jobs where the budget is very tight, the new technology comes handy.



Our all time classic has been upgraded with some pretty cool features. Check it out!



When our know-how and Coherent OPSL technology get together, there's no limit to perfection.



Clubmax full colour I diode laser

Atom full colour I diode laser

Spectrum diode | OPSL

**Spectrum** OPSL

CLUBMAX 1000 | 2000 | 3000 | 3400 | 6000 | 6800

Power Output: 1W | 2W | 3W | 3.4W | 6W | 6.8W Scan speed: 40K - 90 kpps Weight: 6kg - 11.6kg

ATOM 9 HPS | 12 | 15 | 20

Power Output: 8.5W | 12W | 15 | 20W Scan speed: 30K - 90 kpps Weight: 26kg - 34kg SPECTRUM 20 | 25 | 30 | 40

Power Output: 20W | 25W | 29W | 40W Scan speed: 30K - 50 kpps Weight: 36kg - 48kg SPECTRUM OPSL 10 | 14

Power Output: 9.5W | 14W Scan speed: 90 kpps Weight: 37kg

#### **Product overview**

## Laser Display Systems

LD means even tighter and brighter beams. In fact, very tight and super bright!



How about turning virtually any surface into a shining billboard in a few seconds?



One powerful straight line of coherent light. As simple as that.



Green diode power at its best. It still remains to be the most visible laser colour up to date.



LD series diode I OPSL

Logolas full colour I diode laser

L-beam single colour I diode laser

Maxim single colour | diode laser | OPSL

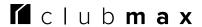
LD SERIES 20 | 25 | 30 | 40

Power Output: 20W | 25W | 29W | 40W Scan speed: 30 kpps Weight: 40kg LOGOLAS 1800 | 3000

Power Output: 1.8W | 3W Scan speed: 40K - 90 kpps Weight: 3.1kg L-BEAM G3800 | B6000

Power Output: 3.8W green | 6W blue Scan speed: -Weight: 3.1kg MAXIM G900 - G20

Power Output: 0.9W | 1.8W | 3.6W | 8W | 10W | 15W | 20W Scan speed: 30 - 90 kpps Weight: 6kg - 29kg



## **New Clubmax**

#### 3000 | 3400 | 6000 | 6800

Our all NEW Clubmax is simply spectacular. The device on its own has been crafted to near-perfection following Kvant's core philosophy of continuous improvement. The performance and new smart features are what will impress your audience the most.

Based on the current desires and needs of laser display professionals around the world and of course, our most successful laser system ever, the new Clubmax is set again to be the benchmark for others.

#### 2017 improvements:

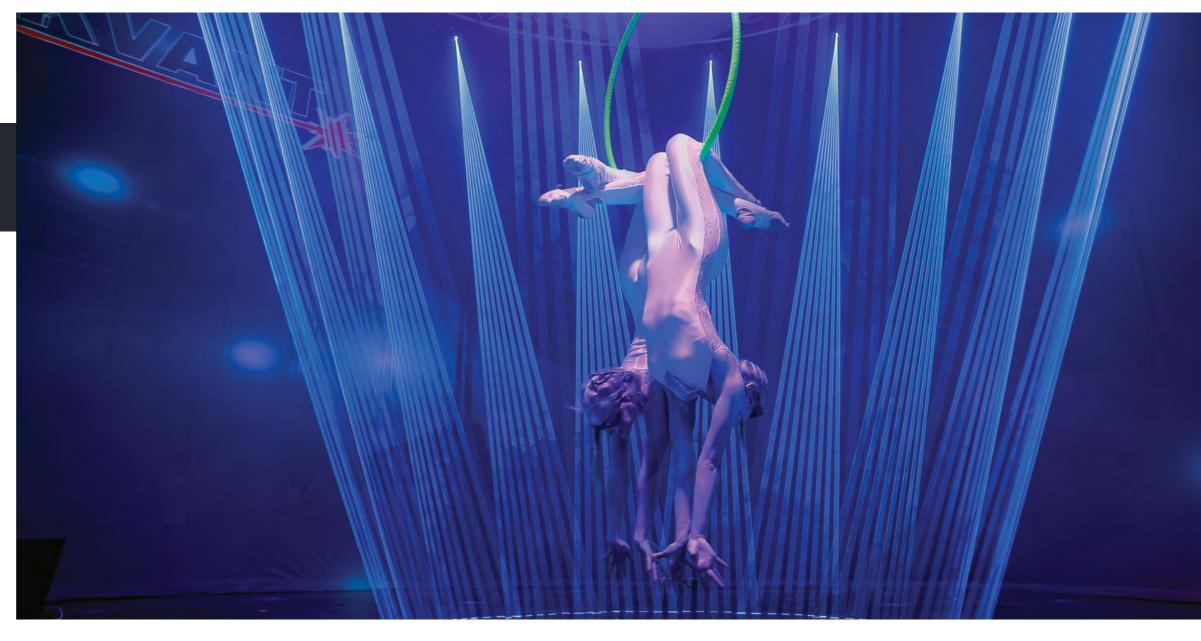
- New look, stronger and sleeker construction.
- Integrated Pangolin FB4 control interface with network switch for professional control and easy daisy-chaining.
- Colour Balance display mode when this mode is enabled, the laser colours correspond to those you see on your screen, without the need for colour palette calibration in your software.

These colour settings are stored in internal system memory of each Clubmax, meaning you always get the same colours from all Clubmax lasers, no matter what control interface you use.



- New and improved scan-fail and system safety with advanced power supply monitoring and DMR (in reliability engineering, dual modular redundancy (DMR) is a system with duplicated components, providing redundancy in case one should fail).
- Improved E-STOP circuit now keeps inbuilt control interface running even if the E-STOP button is activated, ensuring very short restart time of the laser display performance (optional feature).

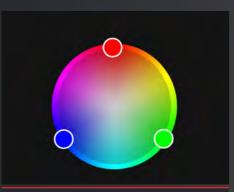




66A FEW NICE TOUCHES THAT DISTINGUISH US FROM OTHERS AND HELP YOU TO SUCCEED. 99



**Inbuilt FB4** with network switch makes it very easy to set up and go.



Getting the colours

100% correct was never easier.

Just push the button.

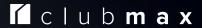


Ethernet & DMX for easy connection.



The **new** non-obstructive locking **wheels** are stylish, but also functional.







**SafetyScan lens** with mounting bracket for increased laser safety.



Directly replaceable **DiscoScan 2.0** lens for wide angle 360° scanning.



DMX controlled **Optical Bench** with four effects.



**4-way** masking plate helps with laser safety.

## Clubmax

#### 1000 | 2000

We wanted to make cheap and cheerful but that's not who we are. Our natural conscience turned a small idea into a bestseller.

The level of interest, number of sales and all the buzz about Clubmax proved we hit the nail on the head. It became so popular that inevitably many illegal and unreliable copies flooded the market.

The Clubmax lasers are a radically simple solution for anything from several thousand people raves to the smallest private clubs and cosy venues. Developed with regard to

challenging clubbing environments the design is optimised to allow for long maintenance intervals.

TrueRGB colour management ensures consistent colours across the whole range and near linear response of brightness modulation output.



**ScannerMax 506** for precise and reliable 40kpps scanning. 90kpps scanning is optional.



Modular FB4 or Moncha.NET control interface provides Ethernet and ArtNet communication.



Directly replaceable **DiscoScan 2.0** lens for wide angle 360° scanning.



DMX controlled **Optical Bench** with four effects.

10



**SafetyScan lens** with mounting bracket for increased laser safety.



Easy access to **colour alignment** mechanism.

#### Indoor laser displays and laser graphic

Clubmax 1000 / 2016



#### When cost and performance are in perfect balance

## **Atom** 9 HPS | 12 | 15 | 20

The new Atom 15 fills the gap between medium range and high power range Atoms (12 & 20). It offers the great colour balance and compact design.

We officially launched our first Pure Diode laser system back in 2011 in Birmingham, UK. Today's ATOM series combines modern Pure Diode laser technology with battlefield proven design and a new FlashBack 4 controller from Pangolin.

Our ATOMs already showed their potential in power demanding applications whilst we manage to keep the purchase costs at a reasonable level. Watch out and buy now so you don't miss the train when high power diode lasers come into play.

ATOM means confidence of investment in the days of fast technological changes.







Miss Slovakia / 2016

#### When the finest is your only way forward

## **Spectrum** 20 | 25 | 30 | 40

Our good old Spectrum made us famous within the industry and has become an icon between professionals and big productions. Here's the new one to rule the world!

Our long time classics - the Spectrum series. Still being the most popular within the high power range of KVANT lasers. So here is the current version of our proven and improved design that incorporates our cutting edge technology.

The 2017 Spectrum is a sophisticated tool for your journey towards large and successful laser displays.

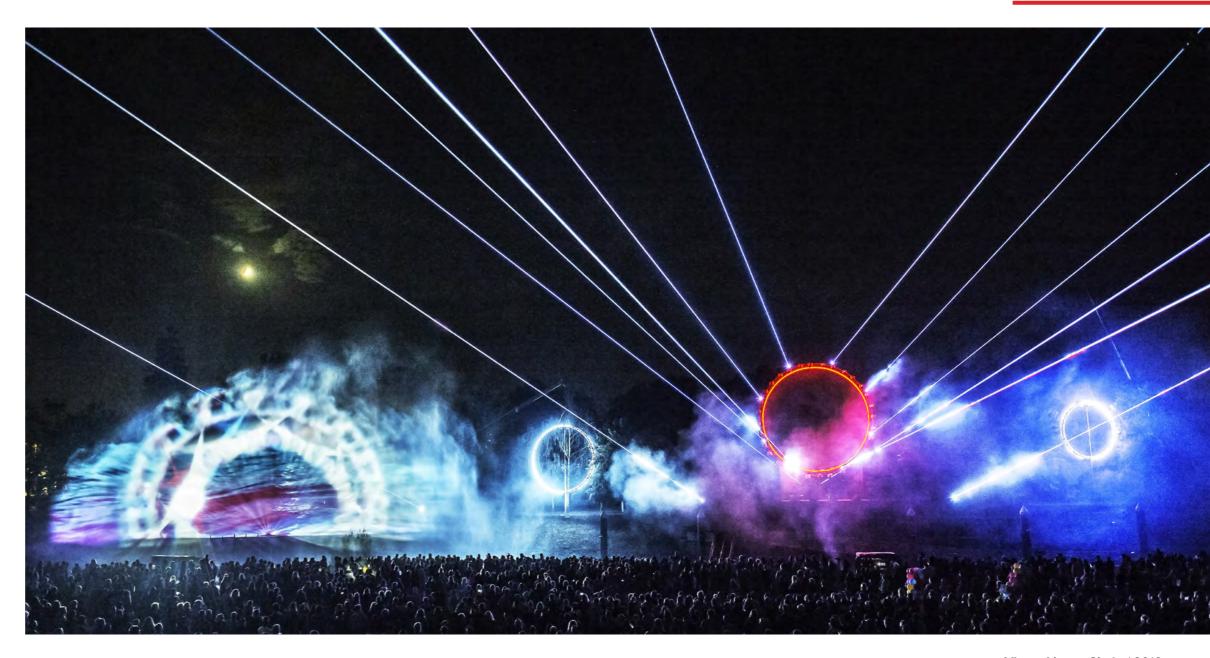
All Spectrum systems are certified for TUV Laser Safety.

#### The main features include:

- 50kpps Saturn 5 scanning (optional)
- · motorised dichroic filters for quick and easy colour alignment controlled via Pangolin Beyond
- IP65 construction
- integrated FB4 control interface
- radio controlled Emergency STOP remote (optional)

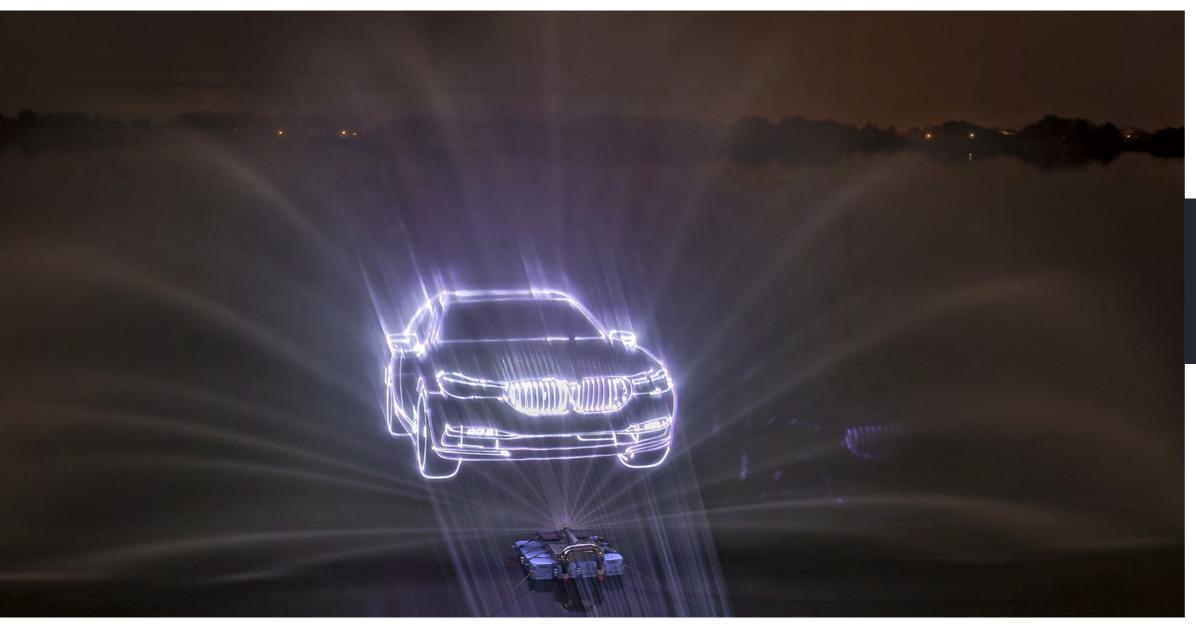






VItava Lives - Circle / 2016

#### **Best choice for HD laser graphic**



# Spectrum opsl

#### Main features of the Spectrum OPSL series

- ultra low beam divergence (0.35 mrad at full angle)
- 90kpps Saturn 1 scanning
- motorised dichroic filters for quick and easy colour alignment controlled via Pangolin Beyond
- IP65 construction
- integrated FB4 control interface
- radio controlled Emergency STOP remote (optional)

Nothing compares to the Spectrum OPSL when it comes to long distance graphical performance. The combination of our know-how, craftsmanship and Coherent OPSL HD technology are what make this laser series unbeatable in many ways.

These systems feature a true TEM00 beam profile which offers the best possible beam characteristics for graphical laser displays.

Razor sharp beams and new improved 90kpps high speed scanning from Pangolin delivers superb performance which we reckon will impress even the most demanding users.



BMW 7 release / 2015





## LD series

"LD" or so called Low Divergence "upgrade" affects the laser beam so it is bit thicker at the source, but much more coherent further away.

And that makes it more than twice as bright and visible at distance when compared to standard systems.

LD upgrade is available for some of the Atom and all Spectrum series systems. And because here we use the state of the art Saturn scanning system, the high speeds and precision of scanning is sustainable even with thicker beams. We are planning to extend this upgrade to some other lasers soon.

- LD is twice as bright as ordinary laser display system
- LD offers less than 0.5 mrad laser beam divergence, measured at full angle
- LD has fast and precise Saturn 9 scanning
- LD option is available for Atom 20 and all Spectrum series laser systems







World Endurance Championship, Bahrain / 2016

#### Simple to use and inexpensive solution for outdoor laser advertising

## Logolas 1800 | 3000

Get your massage out there! Neon-like laser text and graphics will catch people's attention and get you noticed.

Logolas is a versatile, simple to use and inexpensive solution for outdoor laser advertising. The full colour laser system is enclosed in a waterproof casing and controlled by a specially tuned version of the inbuilt FB4 control interface that holds all necessary animations loaded onto the SD card.

By using Logolas you can turn virtually any flat surface into a billboard that after dusk will outshine any other type of advertising and whose content can be changed as often as required.

The ScannerMax SM-506 scanning system utilised in Logolas runs at 40kpps which is fast enough for any basic laser graphics, text or animations.

The optional Saturn1 90kpps scanning turns any Logolas into the ultimate graphical laser display system.

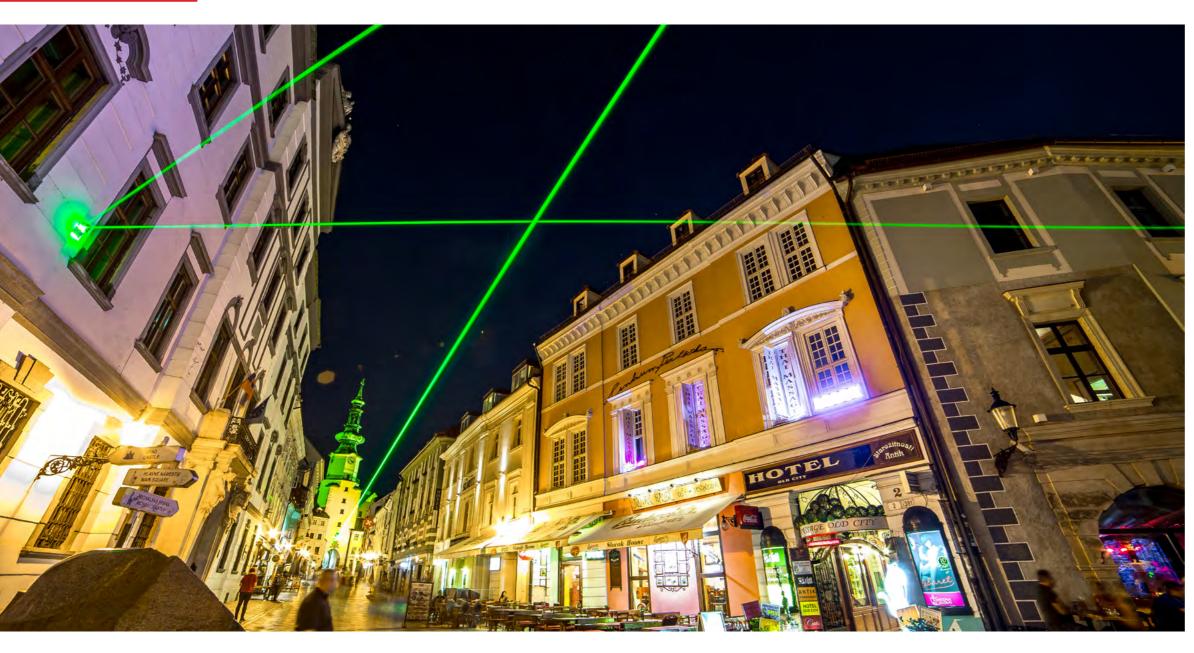






15th anniversary of TA3 / 2016

#### Single powerful laser beam



#### Laser Line in Bratislava / fixed installation

## L-beam 63800 | B6000

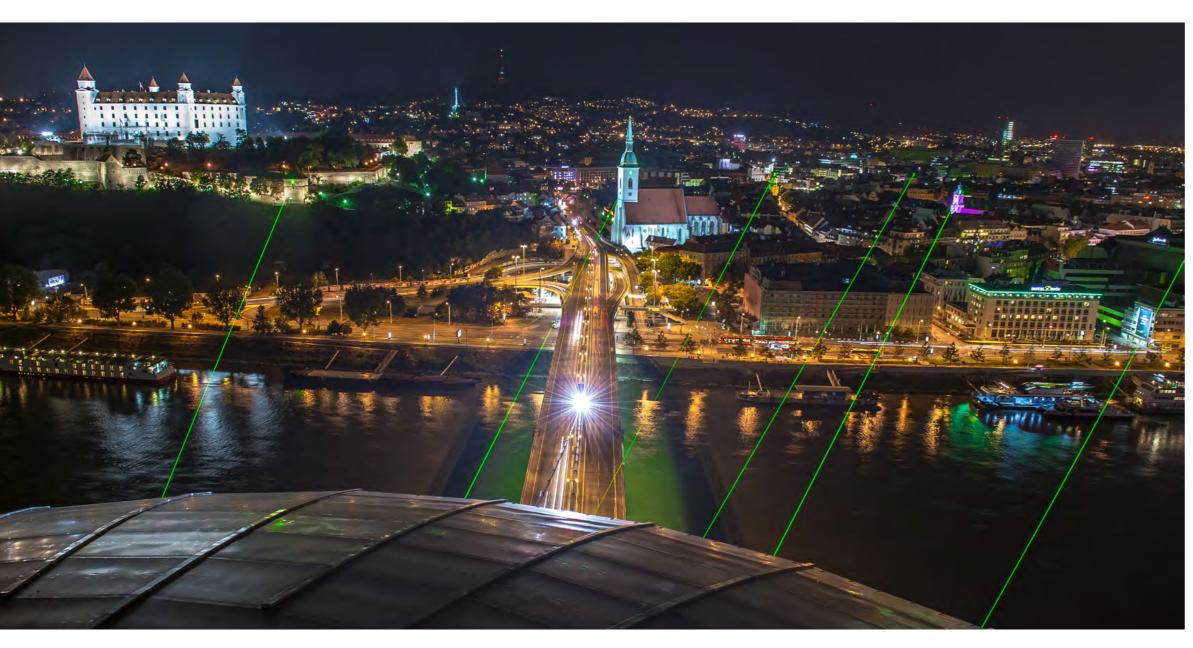
The magic of the new L-beam series lies in its simplicity - a single powerful laser beam with almost impossibly low divergence. The L-beam is enclosed in rainproof housing and controlled by DMX.

It has been designed mainly for architectural use where it could, for example, imitate edges of buildings to make them visually more appealing. But of course, there's no limits to imagination and we are pretty sure that there are many other suitable applications around you where L-beam could be the solution. We are excited to see what our customers create!





#### As simple and effective as it can possibly be



## Maxim 6900 - 620

Our iconic Maxim series went through dozens of changes over the years but the core remains the same; a quality laser source with laboratory grade optics wrapped in a robust aluminium shell for confidence and peace of mind.

There's no need to say more, except maybe that the three basic models G900, G1800 and G3600 are built in the smallest laser housing we commercially manufacture.



Festival of light / 2016

#### We focus the light so you can focus on your performance

## Laser Modules

Our mission is to ensure that a uniform and quality beam comes out of every KVANT laser module.

The core of any KVANT laser system is coherent light carefully shaped by a set of optical elements into its final form - a laser beam. The way this is done has a direct impact on what the audience will see when the show goes off.

The process of beam shaping sets the foundations of the whole system and determines how your laser display performance will be perceived by others. The

amount of effort we put into refining this process was equal to climbing a Himalayan mountain. It was worth it and the final results are as beautiful as the view from the top.

Our involvement in laser development for scientific, biomedical and educational purposes is also increasingly important.

One of our recent achievements is a new generation of solid state UV lasers which will replace current gas lasers.





### Accessories



The DiscoScan lens is an "optical mirror ball" for your laser projector.

In a disco or nightclub you often want beams to fill the whole space, but it can be difficult to achieve with the limited scan angle of most scanning systems.

The solution is the DiscoScan lens. A super-wide angle lens designed specifically for laser projectors.

With our mounting bracket it is directly compatible with all modern KVANT laser projectors.



The lenses increase the divergence of the laser beam when scanning downward into the audience.

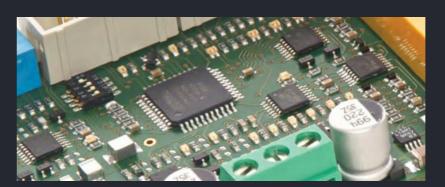
This allows you to create a stunning laser show and keep the beams that are projected into the audience at safer levels while not affecting the overhead beams at all.



This metal masking plate is made of four individual parts where each can be moved in a different direction when four locking bolts are loosened.

This is an extremely useful safety addition which gives you an option to limit the laser output area exactly as required (for example if certain parts of the venue needs to be avoided).





PASS. (Professional Audience Safety System). Use PASS for even greater laser safety. PASS is a safety device that helps monitor laser power, scanner signals and watching the show. other projector-related parameters to ensure your laser show is safe.

PASS is primarily used to ensure the safety of audience scanning-style laser shows, where the laser beam comes in direct contact with people



The RE-STOP wireless emergency stop system operates on the 868MHz frequency range for up to 150 metres. With 12 hours operation when fully charged it provides a safety link that can make any laser, control situation or other potential hazard safe at the touch of a button (other frequencies available for other countries).

This product fulfils requirements of ISO 13850, IEC 60204-1 and NFPA 79.



This rigid interface is compatible with all KVANT ClubMax series systems and also with Maxim series lasers G900 - G3600.

Modular FB4 and Moncha.NET Quick Connect control systems works over the Ethernet and ArtNet communication protocols.

There's also a SD memory card slot inbuilt for storing your laser effects which can be then played over the ArtNet or DMX from any modern lighting desk without using a PC.

The interface is powered directly from the laser system and comes with laser control software and SD memory card as standard.



FB4 is a new network hardware control platform from Pangolin, that is set to take our industry to the next level. FB4 is a media server for your laser show, allowing you to control all projector and show control parameters, as well as giving you the ability to easily interface with other lighting and production equipment.

KVANT FB4 is a Pangolin FB4-MAX OEM board built into a stylish and robust enclosure.







**MIRRORS.** There are two types of mirrors that we manufacture. Both of these types can be supplied either with a simple bracket mount or with a precise adjustment mechanism that is useful for long distance targeting. The front coated bounce mirrors are used to reflect the beams into desired positions and are a great addition to any laser installation or show. Diffraction mirrors are used to create Star Burst or Finger Beam effects.

#### BOXTREAM & RAIN COVER.

KVANT Boxtreme is a weather-proof enclosure with inbuilt air conditioning for permanent outdoor installations where the weather conditions can get very rough. It protects a laser system from extreme temperatures, water, dust and high humidity.

100% rain-proof, light, durable and compact when packed away. We made this "coat" to protect your KVANT lasers from any kind of wet weather. It can be installed in seconds and is held securely so it doesn't get blown away in the wind. It is beautifully manufactured from tough and tear resistant materials and holds a premium leather badge with our company logo on it.









#### WATERSCREENS.

Curtain - straight 3 meters long segments with single or triple nozzle lines create a curtain of sprayed water suitable for indoor installations.

Shield - the water discharged under high pressure forms a half-spherical wall which is great for outdoor applications on lakes, rivers and outdoor pools. The size of a projection surface is  $25 \times 10$  meters (W x H).



Laser bars have become very popular during the last few years and we have them in our portfolio too. To develop one is not rocket science but there are many of them available on the market. So instead of manufacturing them, we selected for you the best ones we could find and checked them so they work 100%.



#### When it comes to lasers and LED screens we are virtually unlimited by scale

## **Equipment Hire**

If there's not enough in our hire stock we can build more. If comparable is cheaper elsewhere we can offer better. If you want it special we can alter it to fulfil your needs.

It is only rational that a manufacturer like us will provide you with more flexibility and support when it comes to hiring the equipment than you would get from elsewhere. Of course the prices are likely to be lower too which always helps everyone. We are the manufacturer so we can deliver what others may not be able to. And if you'll need a help with hired equipment you can

call us 24/7. There's always someone within our world-wide network who will be able to assist you efficiently.

Here at Kvant we are on your side. We will treat you with modesty and fairness and yes - we expect the same from you.



#### **Award-winning show production services**



# Show Production Services

During the past 20 years of our increasingly successful existence we explored many types of visual entertainment and art which helped us to go further and beyond.

Being a laser manufacturer, our show production career started with laser shows, but we progressed to what we are now by adding more entertainment elements into our arsenal and by gaining all the valuable experience.

Our show department has grown into an Award-Winning multimedia production team, which has so far received a total of 17 prestigious ILDA Awards and that is only in the last three years!

Laser displays, 3D video and laser mapping, holographic projections, fireworks and water shows. You name it, we've done them all. Energising, vibrant and evoking true inspiration.

The most wonderful thing about all this is that even after that the many events we participated in, we still love doing it. We still treat every new project with the same importance showing exemplary attitude and professionalism.

### Laser Systems Specifications

	Clubmax 1000	Clubmax 2000	Clubmax 3000
Beam size (mm)	3.5x4	3.5x4	3.5x4
Beam divergence	< 1 mrad (full angle)	< 1 mrad (full angle)	< 1 mrad (full angle)
System control	ILDA	ILDA	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	1W	2W	3W
Dimensions (mm)	255   207   168	255   207   168	255   225   168
Wavelength (nm)	R/637 G/520 B/445 or 460	R/637 G/520 B/445 or 460	R/637 G/520 B/445 or 460
Weight (kg)	6	6	8.8
RIGIB output (mW)	170   110   750	340   630   1100	650   900   1600
Scanners, max.scan. angle	ScannerMAX up to 40kpps@8°, 60°   SATURN1 90kpps@7°, 60°		

	Atom 9 HPS	Atom 12
Beam size (mm)	3x3	5x5
Beam divergence	< 1 mrad (full angle)	< 1 mrad (full angle)
System control	ILDA   Ethernet   ARTNET   DMX   SD	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	8.5W	12W
Dimensions (mm)	380   302   250	380   302   250
Wavelength (nm)	R/637 G/520 B/445 + 460	R/637 G/520 B/445
Weight (kg)	26,5	26,5
RIGIB output (mW)	2750   1800   4000	3000   3600   6000
Scanners, max.scan. angle	SATURN1 90kpps@7°, 60°	CT6215 30kpps@8°, 60°   SATURN5 50kpps@7°, 60°

	Clubmax 3400	Clubmax 6000	Clubmax 6800
Beam size (mm)	3.5x4	3.5x4	3.5x4
Beam divergence	< 1 mrad (full angle)	< 1 mrad (full angle)	< 1 mrad (full angle)
System control	ILDA   Ethernet   ARTNET   DMX   SD	ILDA   Ethernet   ARTNET   DMX   SD	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	3.4W	6W	6.8W
Dimensions (mm)	255   225   168	255   359   168	255   359   168
Wavelength (nm)	R/637 G/520 B/445 or 460	R/637 G/520 B/445 or 460	R/637 G/520 B/445 or 460
Weight (kg)	8.8	11.6	11.6
RIGIB output (mW)	920   900   1600	1300   1800   3000	2000   1800   3000
Scanners, max.scan. angle	ScannerMAX up to 40kpps@8°, 60°   SATURN1 90kpps@7°, 60°		

	Atom 15	Atom 20
Beam size (mm)	5x5	5.5x5.5
Beam divergence	< 1 mrad (full angle)	< 1 mrad (full angle)
System control	ILDA   Ethernet   ARTNET   DMX   SD	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	14.5W	20W
Dimensions (mm)	380   302   250	420   251   391
Wavelength (nm)	R/637 G/520 B/445	R/637 G/520 B/445 + 460
Weight (kg)	26,5	34
RIGIB output (kg)	4800   3600   6000	6000   3600   11000
Scanners, max.scan. angle	CT6215 30kpps@8°, 60°   SATURN5 50kpps@7°, 60°	CT6215 30kpps@8°, 60°   SATURN5 50kpps@5°, 60°

	Spectrum 20 diode   OPSL	Spectrum 25 diode   OPSL
Beam size (mm)	5.5x5.5	6x5.5
Beam divergence	< 1 mrad (full angle)	< 1 mrad (full angle)
System control	ILDA   Ethernet   ARTNET   DMX   SD	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	20W	25W
Dimensions (mm)	465   391   260	465   391   260
Wavelength (nm)	R/637 G/532 B/445	R/637 G/532 B/445 + 460
Weight (kg)	36	36
RIGIB output (mW)	6000   8000   6000	7000   8000   11000
Scanners, max.scan. angle	CT6215 30kpps@8°, 60°   SATURN5 50kpps@5°, 60°	CT6215 30kpps@8°, 60°   SATURN5 50kpps@5°, 60°

	Spectrum OPSL 10	Spectrum OPSL 14
Beam diameter (mm)	3	3
Beam divergence	0.35 mrad (full angle)	0.35 mrad (full angle)
System control	ILDA   Ethernet   ARTNET   DMX   SD	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	9.5W	14W
Dimensions (mm)	465   391   260	465   391   260
Wavelength (nm)	R/639 G/532 B/480	R/639 G/532 B/480
Weight (kg)	37	37
RIGIB output (mW)	2500   5000   2000	5000   5000   4000
Scanners, max.scan. angle	SATURN1 90kpps@7°, 60°	SATURN1 90kpps@7°, 60°

	Spectrum 30 diode   OPSL	Spectrum 40 diode   OPSL
Beam size (mm)	6x5.5	6x5.5
Beam divergence	< 1 mrad (full angle)	< 1 mrad (full angle)
System control	ILDA   Ethernet   ARTNET   DMX   SD	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	29W	40W
Dimensions (mm)	465   391   260	720   490   270
Wavelength (nm)	R/637 G/532 B/445 + 460	R/637 R/660 G/532 B/445 + 460
Weight (kg)	36	48
RIGIB output (mW)	8000   10000   11000	12000   18000   11000
Scanners, max.scan. angle	CT6215 30kpps@8°, 60°   SATURN5 50kpps@5°, 60°	CT6215 30kpps@8°, 60°   SATURN5 50kpps@5°, 60°

	LD 20 pure diode	LD 20 diode   OPSL
Beam size (mm)	9x9	10×10
Beam divergence	< 0.7 mrad (full angle)	< 0.5 mrad (full angle)
System control	ILDA   Ethernet   ARTNET   DMX   SD	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	20W	20W
Dimensions (mm)	420   254   391	465   391   260
Wavelength (nm)	R/637 G/520 B/445 + 460	R/637 G/532 B/445
Weight (kg)	34	36
RIGIB output (mW)	6000   5700   9000	6000   8000   6000
Scanners, max.scan. angle	SATURN9 30kpps@7°, 60°	SATURN9 30kpps@7°, 60°

	LD 25 diode   OPSL	LD 30 diode   OPSL
Beam size (mm)	10x10	10x10
Beam divergence	< 0.5 mrad (full angle)	< 0.5 mrad (full angle)
System control	ILDA   Ethernet   ARTNET   DMX   SD	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	25W	29W
Dimensions (mm)	465   391   260	465   391   260
Wavelength (nm)	R/637 G/532 B/445 + 460	R/637 G/532 B/445 + 460
Weight (kg)	36	36
RIGIB output (mW)	7000   8000   11000	8000   10000   11000
Scanners, max.scan. angle	SATURN9 30kpps@7°, 60°	SATURN9 30kpps@7°, 60°

	Logolas 1800	Logolas 3000
Beam size (mm)	3.5x4	3.5x4
Beam divergence	<1mrad (full angle)	<1mrad (full angle)
System control	Ethernet   SD	Ethernet   SD
Guaranteed output power	1.8W	3W
Dimensions (mm)	365   140   110	365   140   110
Wavelength (nm)	R/637 G/520 B/445 or 460	R/637 G/520 B/445 or 460
Weight (kg)	3.1	3.1
RIGIB output (mW)	300   600   1100	650   890   1500
Scanners, max.scan. angle	ScannerMAX up to 40kpps@8°	, 60°   SATURN1 90kpps@7°, 60°

	LD 40 diode   OPSL
Beam size (mm)	10x10
Beam divergence	< 0.5 mrad (full angle)
System control	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	40W
Dimensions (mm)	720   270   490
Wavelength (nm)	R/637 G/532 B/445 + 460
Weight (kg)	48
RIGIB output (mW)	12000   18000   11000
Scanners, max.scan. angle	SATURN9 30kpps@7°, 60°

	L-beam G3800	L-beam B6000
Beam size (mm)	30x28	36x24
Beam divergence	<0.22mrad (full angle)	<0.24mrad (full angle)
System control	DMX	DMX
Guaranteed output power	3.8W	6W
Dimensions (mm)	365   140   110	365   140   110
Wavelength (nm)	G/520	B/445
Weight (kg)	3.1	3.1
GIB output (mW)	3800   -	- 1 6000
Scanners, max.scan. angle		

	Maxim G900	Maxim G1800
Beam size (mm)	3.5x3.5	3.5x3.5
Beam divergence	< 1 mrad (full angle)	< 1 mrad (full angle)
System control	ILDA	ILDA
Guaranteed output power	0.9W	1.8W
Dimensions (mm)	255   207   168	255   207   168
Wavelength (nm)	G/520	G/520
Weight (kg)	6	6
RIGIB output (mW)	-19001-	-   1800   -
Scanners, max.scan. angle	ScannerMAX up to 40kpps@8	°, 60°   SATURN1 90kpps@7°, 60°

	Maxim G10	Maxim G15
Beam diameter (mm)	5	5
Beam divergence	<1 mrad (full angle)	< 1 mrad (full angle)
System control	ILDA   Ethernet   ARTNET   DMX   SD	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	10W	15W
Dimensions (mm)	355   293   221	380   302   250
Wavelength (nm)	G/532 OPSL	G/532 OPSL
Weight (kg)	12	29
RIGIB output (mW)	-   10000   -	-   15000   -
Scanners, max.scan. angle	CT6215 30kpps@8°, 60° l	SATURN5 50kpps@7°, 60°

	Maxim G3600	Maxim G8000
Beam size (mm)	5x4.5	5
Beam divergence	< 1 mrad (full angle)	< 1 mrad (full angle)
System control	ILDA	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	3.6W	8W
Dimensions (mm)	255   207   168	355   293   221
Wavelength (nm)	G/520	G/532 OPSL
Weight (kg)	6.5	12
RIGIB output (mW)	-136001-	-   8000   -
Scanners, max.scan. angle	CT6215 30kpps@8°, 60°	SATURN5 50kpps@7°, 60°

	Maxim G20
Beam diameter (mm)	5
Beam divergence	<1 mrad (full angle)
System control	ILDA   Ethernet   ARTNET   DMX   SD
Guaranteed output power	20W
Dimensions (mm)	380   302   250
Wavelength (nm)	G/532 OPSL
Weight (kg)	29
RIGIB output (mW)	-   20000   -
Scanners, max.scan. angle	CT6215 30kpps@8°, 60°   SATURN5 50kpps@7°, 60°

### **Laser Modules Specifications**

		RED series												
	Model Nr.	RLM- 180L	RLM- 350L	RLM- 700L	RLM- 1000L	RLM- 1350L	RLM- 2000L	RLM- 2500L	RLM- 2750L	RLM- 3000L	RLM- 4000L	RLM- 4800L	RLM- 5000L	RLM- 6000L
Optio	cal power (mW)	180	350	700	1000	1350	2000	2500	2750	3000	4000	4800	5000	6000
Center w	avelength (nm)	637	637	637	637	637	637	637	637	637	637	637	637	637
Center wavelength	tolerance (nm)	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5
(95% of power, horizonta	Beam diameter al*vertical, mm)	1.4x3	3x3	2.5x3.5	3.5x3.5	2.5x3.5	3.5x3.5	4x3.5	4x3.5	5x3.5	4x5	5x5	5x5	5.5x5
Beam divergence (ha	alf angle, mrad)	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Line	ear polarization		N			N	N	N		N			N	N
M² (hori	izontal/vertical)	1/2	2/2	5/7	5/7	5/7	7/7	8/7	8/7	9/7	8/10	10/10	10/10	11/10
Modula	ition freq. (kHz)	100	100	100	100	100	100	100	100	100	100	100	100	100
Peak power	TEC circuit	24V/1.5A	24V/1.5A	24V/1.5A	24V/1.5A	24V/3A	24V/3A	24V/3A	24V/6A	24V/6A	24V/6A	24V/6A	24V/6A	24V/6A
consumption (W)	LD circuit	24V/0.5A	24V/0.5A	24V/0.5A	24V/0.5A	24V/1A	24V/1A	24V/1A	24V/1A	24V/1A	24V/1.5A	24V/1.5A	24V/1.5A	24V/2A
Dimension	ns (LxWxH,mm)	87x60x45	87x60x45	132x77x51	132x77x51	174x107x51	174x107x51	174x107x51	188x122x57	188x122x57	188x122x57	188x122x57	248x141x66	248x141x66
External driver part dimension	ns (LxWxH,mm)	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34

			RED	serie	S
	Model Nr.	RLM- 7000L	RLM- 8000U	RLM- 10kL	RLM- 12kU
Ор	tical power (mW)	7000	8000	10000	12000
Center	wavelength (nm)	637	637	637	637
Center waveleng	th tolerance (nm)	± 5	± 5	± 5	± 5
(95% of power, horizon	Beam diameter ntal*vertical, mm)	6x5	6x5	7x7	7x7
Beam divergence (	half angle, mrad)	0.5	0.5	0.5	0.5
Li	near polarization	N	N	N	N
M² (hơ	orizontal/vertical)	11/10	11/10	12/12	12/12
Modu	ılation freq. (kHz)	100	100	100	100
Peak power	TEC circuit	24V/6A	24V/6A	24V/12A	24V/12A
consumption (W)	LD circuit	24V/2.5A	24V/2.5A	24V/3A	24V/3A
Dimensi	ons (LxWxH,mm)	248x141x66	248x141x66	335x156x66	335x156x66
External driver part dimensi	ons (LxWxH,mm)	117x89x34	117x89x34	117x89x34	117x89x34

	Model Nr.	RED combo			
Opti	cal power (mW)	3000			
Center w	avelength (nm)	637 (1.7W) 660 (1.3W)			
Center wavelength	tolerance (nm)	±5			
(95% of power, horizont	Beam diameter al*vertical, mm)	5x5			
Beam divergence (h	alf angle, mrad)	0.2			
Line	ear polarization				
M² (hor	izontal/vertical)	3/3			
Modula	tion freq. (kHz)	100			
Peak power	TEC circuit	24V/6A			
consumption (W)	LD circuit	24V/2A			
Dimensio	ns (LxWxH,mm)	248x141x66			
External driver part dimension	ns (LxWxH,mm)	117x89x34			

	RED series II													
		RED Selles II												
	Model Nr.	RLM- 160D	RLM- 320D	RLM- 600D	RLM- 1000D	RLM- 1300D	RLM- 1900D	RLM- 2200D	RLM- 3000D	RLM- 3900D	RLM- 4800D	RLM- 5800D	RLM- 7700D	
Op	otical power (mW)	160	320	600	1000	1300	1900	2200	3000	3900	4800	5800	7700	
Center	wavelength (nm)	660	660	660	660	660	660	660	660	660	660	660	660	
Center waveleng	th tolerance (nm)	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	
(95% of power, horizo	Beam diameter ntal*vertical, mm)	1.4x3	3x3	2.5x3.5	3.5x3.5	2.5x3.5	3.5x3.5	4x3.5	5x3.5	4x5	5x5	5.5x5	7x7	
Beam divergence	(half angle, mrad)	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Li	inear polarization		N			N	N	N	N	N	N	N	N	
M² (h	orizontal/vertical)	1/2	2/2	5/7	5/7	5/7	7/7	8/7	8/7	8/10	10/10	11/10	12/12	
Modu	ulation freq. (kHz)	100	100	100	100	100	100	100	100	100	100	100	100	
Peak power	TEC circuit	24V/1.5A	24V/1.5A	24V/1.5A	24V/1.5A	24V/3A	24V/3A	24V/3A	24V/6A	24V/6A	24V/6A	24V/6A	24V/12A	
consumption (W)	LD circuit	24V/0.5A	24V/0.5A	24V/0.5A	24V/0.5A	24V/1A	24V/1A	24V/1A	24V/1A	24V/1.5A	24V/1.5A	24V/2A	24V/3A	
Dimens	ions (LxWxH,mm)	87x60x45	87x60x45	132x77x51	132x77x51	174x107x51	174x107x51	174x107x51	188x122x57	248x141x66	248x141x66	248x141x66	335x156x66	
External driver part dimens	ions (LxWxH,mm)	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	

			RED-	BLUE	series	5
	Model Nr.	RBLM- 1300	RBLM-1700	RBLM-2500	RBLM-2800	RBLM-4300
Optica	al power (mW)	1300	1700	2500	2800	4300
Center wa	velength (nm)	445 (1W) and 637 (340mW)	445 (1W) and 637 (680mW)	445 (1.5W) and 637 (1W)	445 (1.5W) and 637 (1.3W)	445 (3W) and 637 (1.3W)
Center wavelength t	tolerance (nm)	± 5	± 5	± 5	± 5	± 5
B (95% of power, horizonta	eam diameter I*vertical, mm)	3x4	3x4	3x4	3x4	3x4
Beam divergence (hal	f angle, mrad)	0.7 / 0.2	0.7 / 0.5	0.6 / 0.5	0.6 / 0.5	0.6 / 0.5
Line	ar polarization					N
Modulat	ion freq. (kHz)	100	100	100	100	100
Peak power	TEC circuit	24V/1.5A	24V/1.5A	24V/3A	24V/3A	24V/5A
consumption (W)	LD circuit	24V/1A	24V/1.5A	24V/2A	24V/2A	24V/2.5A
Dimension	s (LxWxH,mm)	107x77x51	132x77x51	174x107x51	174×107×51	174x107x51
External driver part dimension	s (LxWxH,mm)	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34

		BLUE series										
	Model Nr.	BLM- 1000B	BLM- 1500B	BLM- 2000B	BLM- 3000B	BLM- 4000B	BLM- 5000B	BLM- 6000B	BLM- 9000B	BLM- 12kB	BLM- 24kB	BLM- 30kB-HS
Optica	al power (mW)	1000	1500	2000	3000	4000	5000	6000	9000	12 W	24 W	30 W
Center wa	velength (nm)	445	445	445	445	445	445	445	445	445	445	445
Center wavelength t	tolerance (nm)	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5
B (95% of power, horizontal	eam diameter I*vertical, mm)	3x3	3x3	3x3	3x3	5.5x4	6x4	6x4	6x6	6x6	11x10	12x10
Beam divergence (hal	f angle, mrad)	0.6 / 0.3	0.7 / 0.3	0.7 / 0.3	0.7 / 0.3	0.7 / 0.2	0.7 / 0.2	0.7 / 0.2	0.7 / 0.3	0.7 / 0.3	0.8 / 0.3	1.1 / 0.3
Linea	ar polarization			N								
M² (horiz	ontal/vertical)	7/3	8/3	8/3	8/3	17 / 3	17 / 3	17 / 3	17 / 8	17 / 8	35 / 11	50 / 11
Modulat	ion freq. (kHz)	100	100	100	100	100	100	100	100	100	100	100
Peak power	TEC circuit	24V/1.5A	24V/1.5A	24V/3A	24V/3A	24V/3A	24V/4A	24V/4A	24V/8A	24V/8A	24V/24A	24V/24A
consumption (W)	LD circuit	24V/1A	24V/1A	24V/1A	24V/1A	24V/1.5A	24V/2A	24V/2A	24V/3.5A	24V/3.5A	24V/7A	24V/9A
Dimensions	s (LxWxH,mm)	87x60x45	87x60x45	132x77x51	132x77x51	132x77x51	132x77x51	132x77x51	174x107x51	174x107x51	248x141x66	248x141x66
External driver part dimensions	s (LxWxH,mm)	117x89x34	117x89x34	117x89x64	117x89x64							

			BLUE	coml	00
	Model Nr.	BLM- 4000LD	BLM- 5500LD	BLM- 12kLD	BLM- 16kLD
Ор	tical power (mW)	4000	5500	12 W	16 W
Center	wavelength (nm)	445 (2W) 460 (2W)		445 (6W) 460 (5W)	445 (9W) 460 (7W)
Center waveleng	th tolerance (nm)	± 5	± 5	± 5	± 5
(95% of power, horizon	Beam diameter ntal*vertical, mm)	3x3	5x5	5.5x5.5	6x9
Beam divergence (	half angle, mrad)	0.4 / 0.3	0.4 / 0.3	0.4 / 0.3	0.4 / 0.3
Li	near polarization	N	N		
M² (hơ	orizontal/vertical)	4/3	7/5	8/6	8/7
Modu	lation freq. (kHz)	100	100	100	100
Peak power	TEC circuit	24V/6A	24V/6A	24V/8A	24V/12A
consumption (W)	LD circuit	24V/2A	24V/2A	24V/3.5A	24V/7A
Dimensi	ons (LxWxH,mm)	174×107×5	1 174x107x51	188x122x57	248x141x66
External driver part dimensi	ons (LxWxH,mm)	117x89x34	117x89x34	117x89x34	117x89x34

	RGB diode modules									
Model Nr.	RGB- 800DM	RGB- 1800DM	RGB- 3000DM	RGB- 3400DM						
Optical power (mW)	800	1800	3000	3400						
Center wavelength (nm)	445nm (650mW) 520nm (100mW) 637nm (170mW)	445nm (1W) 520nm (600mW) 637nm (300mW)	445nm (1.5W) 520nm (900mW) 637nm (680mW)	445nm (1.5W) 520nm (900mW) 637nm (1000mW)						
Center wavelength toler- ance (nm)	± 5	± 5	± 5	± 5						
Beam diameter (95% of power, horizon- tal*vertical, mm)	3.5x4 (blue) 1.5x4 (green) 1.5x3.5 (red)	3.5x4 (blue) 3.5x3 (green) 3.5x3.5 (red)	3.5x4 (blue) 3.5x3.5 (green) 3.5x3.5 (red)	3.5x4 (blue) 3.5x3.5 (green) 3.5x3.5 (red)						
Beam divergence (half angle, mrad)	0.6 / 0.2 (blue) 0.4 / 0.2 (green) 0.2 (red)	0.6 / 0.2 (blue) 0.5 / 0.2 (green) 0.2 (red)	0.6 / 0.2 (blue) 0.5 / 0.2 (green) 0.2 (red)	0.6 / 0.2 (blue) 0.5 / 0.2 (green) 0.5 (red)						
Linear polarization	Y									
Modulation freq. (kHz)	100	100	100	100						
Peak power consumption (W)	24V/2A	24V/2.5A	24V/3A	24V/3A						
Dimensions (LxWxH,mm)	72x56x35	72x56x35	110x60x35	122x60x35 (174x107x51)						
External driver part di- mensions (LxWxH,mm)	100x68x33	100x68x33	100x68x33	100x68x33						

		GREEN series										
	Model Nr.	GLM- 80	GLM- 950N	GLM- 1900N	GLM- 2800N	GLM- 3800N	GLM- 4700N	GLM- 5700N	GLM- 7600N	GLM- 9500N	GLM- 11kN	
Optica	al power (mW)	80	950	1900	2800	3800	4700	5700	7600	9500	11400	
Center way	velength (nm)	520	520	520	520	520	520	520	520	520	520	
Center wavelength to	olerance (nm)	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	
Be (95% of power, horizontal)	eam diameter *vertical, mm)	1.5x3	3.5 x 3.5	3.5 x 3.5	5 x 4.5	5 x 4.5	6 x 5.5	6 x 5.5	6 x 5.5	6.5 x 5.5	6.5 x 5.5	
Beam divergence (half	f angle, mrad)	0.2 / 0.3	0.5 / 0.2	0.5 / 0.2	0.6 / 0.2	0.6 / 0.2	0.5 / 0.3	0.5 / 0.3	0.5 / 0.3	0.7 / 0.3	0.7 / 0.3	
Linea	r polarization	Y				N	N	N	N	N	N	
M² (horizo	ontal/vertical)	1/2	6/3	6/3	11 / 4	11 / 4	12 / 5	12 / 5	12 / 5	16 / 5	16 / 5	
Modulati	on freq. (kHz)	100	100	100	100	100	100	100	100	100	100	
Peak power	TEC circuit	24V/1.5A	24V/1.5A	24V/3A	24V/3A	24V/4A	24V/8A	24V/8A	24V/8A	24V/12A	24V/12A	
consumption (W)	LD circuit	24V/0.5A	24V/1A	24V/1.5A	24V/2A	24V/2.5A	24V/3A	24V/4A	24V/6A	24V/6A	24V/8A	
Dimensions	(LxWxH,mm)	87x60x45	87x60x45	132x77x51	132x77x51	132x77x51	174x107x51	174x107x51	174x107x51	248x141x66	248x141x66	
External driver part dime	nsions (LxWx- H,mm)	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34	

	Scientific series										
Model Nr.	304LM- 20	320LM- 20	375LM- 70	375LM- 200	395LM- 120	405LM- 200	405LM- 300	405LM- 500	405LM- 1.2k	415LM- 120	420LM- 120
Optical power (mW)	5-20	5-20	70	200	120	200	300	500	1200	120	120
Center wavelength (nm)	304	320	375	375	395	405	405	405	405	415	420
Center wavelength tolerance (nm)	±1	±1	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5
Beam mode structure			TEM00	Multimode	TEM00	TEM00	ТЕМОО	Multimode	Multimode	TEM00	ТЕМОО
Beam diameter* (1/e2, mm)	Currently	Currently		~ 4 x 4				~ 4 x 4	~ 4 x 4		
Beam diverg. (half angle,mrad)	under develop-	under develop-	0.2		0.2	0.2	0.2	0.5 x 0.3		0.2	0.2
Linear polarization	ment	ment									
M2											
Max. modulation freq.(kHz)			10	10	10	10	10	10	10	10	10
OEM driver** peak power cons.	24V / 2.5A	24V / 2.5A	24V / 2A	24V / 2A	24V / 2A	24V / 2A	24V / 2A	24V / 2.5A	24V / 2.5A	24V / 2A	24V / 2A
Head dimensions (LxWxH,mm)	110x60x40	110x60x44	87x60x45	87x60x45	87x60x45	87x60x45	87x60x45	87x60x45	87x60x45	87x60x45	87x60x45

<sup>\*</sup> Higher power and other beam diameter upon request
\*\* Modules available with OEM driver or bench-top driver

	Scientific series										
Model Nr.	445LM- 100	445LM- 500	445LM- 1.5k	455LM- 100	460LM- 1.4k	473LM- 100	473LM- 1k	488LM- 60	488LM- 200	505LM- 80	
Optical power (mW)	100	500	1500	100	1400	100	1000	60	200	80	
Center wavelength (nm)	445	445	445	455	460	473	473	488	488	505	
Center wavelength tolerance (nm)	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	± 5	
Beam mode structure	ТЕМ00	Multimode	Multimode	TEM00	Multimode	TEM00	Multimode	TEM00	TEM00	TEM00	
Beam diameter* (1/e2, mm)		4 x 4	4 x 4	4	4 x 4	4	4 x 4	4	4	4	
Beam diverg. (half angle,mrad)	0.2	0.3 x 0.2	0.5 x 0.2	0.2	0.5 x 0.2	0.2	0.5 x 0.2	0.2	0.2	0.2	
Linear polarization											
M2				~1		~1	~ 1	~1	~1	~1	
Max. modulation freq.(kHz)	10	10	10	10	10	10	10	10	10	10	
OEM driver** peak power cons.	24V / 2A	24V / 2.5A	24V / 2.5A	24V / 2A	24V / 2.5A	24V / 2A	24V / 2.5A	24V / 2A	24V / 2A	24V / 2A	
Head dimensions (LxWxH,mm)	87x60x45	87x60x45	87x60x45	87x60x45	87x60x45	87x60x45	87x60x45	87x60x45	87x60x45	87x60x45	

	Scientific series										
Model Nr.	520LM- 60	520LM- 100	520LM- 950	YLM-50	OLM-180	637LM- 180	638LM- 700	RLM-400	660LM- 160	660LM- 1k	
Optical power (mW)	60	100	950	50	>180	180	700	>400	160	1000	
Center wavelength (nm)	520	520	520	561	607	637	638	639	660	660	
Center wavelength tolerance (nm)	± 5	± 5	± 5	± 2	±1	± 5	± 5	±1	± 5	± 5	
Beam mode structure	TEM00	Multimode	Multimode	TEM00	TEM00	TEM00	Multimode	TEM00	TEM00	Multimode	
Beam diameter* (1/e2, mm)		3 x 4	2 x 4	~3	3.2		6 x 4	2.8		5 x 5	
Beam diverg. (half angle,mrad)	0.2	0.3 x 0.2	0.8 x 0.2	~0.2	0.16	0.2	0.8 x 0.2	0.17	0.2	3 x 0.2	
Linear polarization											
M2				1.2	< 1.1			< 1.1			
Max. modulation freq.(kHz)	10	10	10	10		10	10		10	10	
OEM driver** peak power cons.	24V / 2A	24V / 2A	24V / 2.5A	24V / 2.5A	24V / 2.5A	24V / 2A	24V / 2.5A	24V / 2.5A	24V / 2A	24V / 2.5A	
Head dimensions (LxWxH,mm)	87x60x45	87x60x45	87x60x45	120x59x40	120x59x40	87x60x45	87x60x45	120x59x40	87x60x45	87x60x45	

		COHERENT									
Model Nr.	Blue	Cyan II	Cyan I	Green II	Green I	Yellow	Orange II	Orange I	Red		
Optical power (mW)	1000 2000	1000 2000 4000	3000 5000	3000 5000	3000 5000 8000 10000	2000 3000 5000 6000	3000	1250	1000 1500 2000 2500 5000		
Center wavelength (nm)	460	480	488	514	530	577	590	607	639		
Center wavelength tolerance (nm)	±3	± 3	± 3	±±3	±±3	±± 3	± 3	± 3	±1		
Spectral width (nm)	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Beam size (FWHM, mm)	Ø 2.3	Ø 2.3	Ø 2.3	Ø 2.3	Ø 2.3	Ø 2.3	Ø 2.3	Ø 2.3	Ø1		
Beam diverg. (full angle,mrad)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		
Linear polarization	100:1	100:1	100:1	100:1	100:1	100:1	100:1	100:1	100:1		
M2 (horizontal/vertical)	6/4	6 / 4	6/4	6/4	6 / 4	6 / 4	6/4	6 / 4	1.5 / 1.5		
Modulation freq.(kHz)	50	50	50	50	50	50	50	50	50		
Diode power cons.	2.2V / 32A	2.2V / 32A	2.2V / 40A	2.2V / 40A	2.2V / 40A	2.2V / 40A	2.2V / 32A	2.2V / 32A	2.2V / 40A		
Driver dimensions of head only (LxWxH,mm)	134x44x65	134x44x65	134x44x65	134x44x65	134x44x65	134x44x65	134x44x65	134x44x65	256x49x71		

	KVANT solid state laser modules								
Model Nr.	YLM-50	OLM-180	RLM-400	UV1-20	UV2-20				
Optical power (mW)	50	>180	>400	5-20	5-20				
Center wavelength (nm)	561	607	639	304	320				
Center wavelength tolerance (nm)	± 2	±1	±1	±1	±1				
Beam diameter (95% of power, horizontal*vertical, mm)	~ 3	3.2	2.8						
Beam diverg. (half angle,mrad)	~ 0.2	0.16	0.17		ently der				
Linear polarization				develo	pment				
M2	1.2	<1.1	<1.1						
Modulation freq.(kHz)	10								
Peak power cons.	24V / 2.5A	24V / 2.5A	24V / 2.5A	24V / 2.5A	24V / 2.5A				
Dimensions (LxWxH,mm)	120x59x40	120x59x40	120x59x40	120x60x44	120x60x44				
Driver dimensions (LxWxH,mm)	117x89x34	117x89x34	117x89x34	117x89x34	117x89x34				

<sup>\*</sup> Higher power and other beam diameter upon request
\*\* Modules available with OEM driver or bench-top driver

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