




opto
drive™

OptoDrive™

Medical LED

New light.
Superbly balanced and
colour corrected LED
modules for medical use

optoGa



OptoDrive™ - complete LED modules for medical luminaires

With light fittings used for minor surgery, examination and other medical and veterinary purposes, quality of light is essential. OptoDrive™ LED modules provide you with exquisite and flexible LED light sources that comply with the highest demands in medical applications*. Tests show that OptoDrive™ is suitable even for tasks compliance with the cyanosis observation index (COI)**.

* OptoDrive is compliant with the following directives: EN60601-2-41 IEC: 2000, UL60601-1 and CAN/CSA-C22.2 No. 601.1-M-90.

** COI as per AS1680.2.5:1997





Easy to integrate

The benefits of using OptoDrive™ as your light source become very evident when it comes to integration in light fittings, opening up new design possibilities. The same fixture structure can be used regardless of viewing angle, colour temperature, luminosity etc.

Complete, dimmable LED modules

These are complete, dimmable LED lighting modules with correct brightness and multiple scattering angles to provide the desired light in most types of premises. In fact, the OptoDrive™ LED solution is the first built-in driver package design to render a perfect white light.

The thermal performance also exceeds other power LED solutions, while energy efficiency and increased service life mean unbeatable advantages for your customers. They are highly cost-effective, and you can easily adjust the light in your light fittings to suit regulations and the needs and preferences of your customers.

Think OptoDrive™ when designing, producing and selling medical application lights.

- **Solid State Lighting***
- **Low voltage VDC**
- **Dimmable with PWM (Dali, DMX, etc.)**
- **Very compact module with integrated control**
- **Easy installation (no socket, just 2-3 screws and a connector)**

* LEDs are a solid source, while incandescent and fluorescent lamps are containers filled with gas or a vacuum

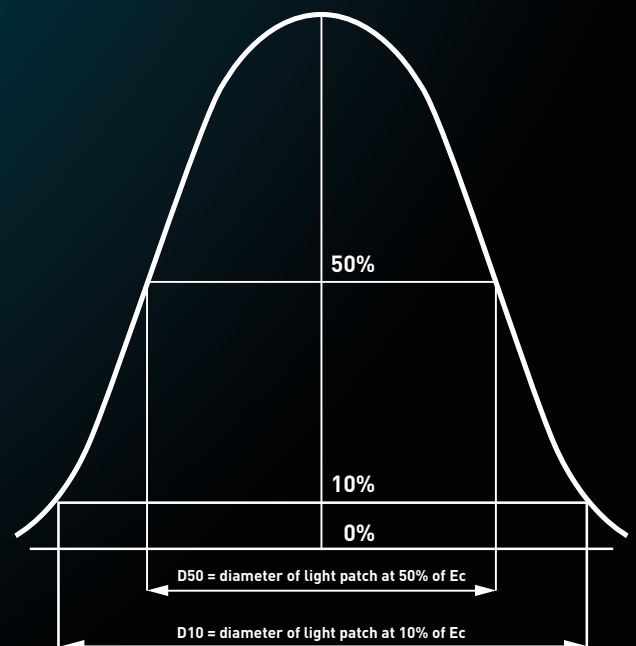
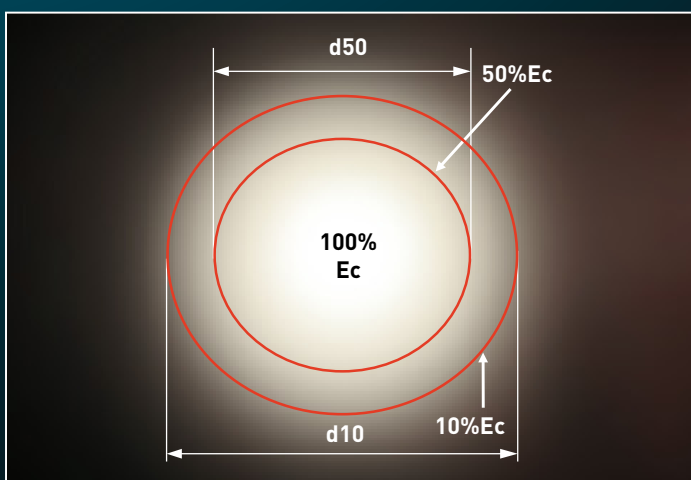
OptoDrive™ delivers the highest light quality

OptoDrive™ provides a neutral and pleasant light that works with your light fittings. According to measurements taken by SP (Swedish Technical Testing Institute), OptoDrive™ modules have an index above Ra95.

OptoDrive™ has excellent possibilities to achieve perfect shadow control with its multi-array design and crisp white light. The colour balance and spread of light is so good that modules exceed the lighting requirements for tasks requiring highly accurate colour perception.

CLARA and SVEA have higher Ra value than can be achieved with energy saving bulbs and are available with a warm white, normal white or cool white colour temperature.

- The entire module lights up, not just the LED
- Colour rendering index for SVEA and CLARA: above Ra93
- Emits no IR light



Illuminance performance SVEA.
The D10 should not exceed 2 x D50 to meet
the requirements of minor surgery





Examination and bed light fixtures

OptoDrive™ CLARA is a complete lighting module with integrated control, customised to suit medical light fittings for examination and bed lights. CLARA is only two centimetres high and is very easy to integrate.

The module provides well-balanced light (~Ra95) with a powerful, even spread that makes it usable in many applications. The service life is approximately 50,000 hours.



OptoDrive™ CLARA 3-LED

- **Power consumption:** 4W | 8W
- **Supply voltage:** 12-36 VDC
- **Colour rendering index (CRI):** Ra:97 | R9:96
- **Correlated colour temperature (CCT):** 4,300K
- **Beam spread:** 12° | 40°
- **Luminous flux:** 350lm | 600lm
- **Illuminance (max lux 1.0m):** >7,000lx (8W with 12° lens)
- **Dimensions (hexagonal):** 50x48.5mm, h=16.5mm

Clara ID.8.12-36.3.940-12	Ra	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
4,000K	97	97	99	94	96	98	97	99	98	96	97	94	84	98	96	96

OptoDrive™ CLARA 6-LED

- **Power consumption:** 12W
- **Supply voltage:** 24-36VDC
- **Colour rendering index (CRI):** Ra: 97 | R9: 88
- **Correlated colour temperature (CCT):** 3,000K | 4,000K | 4,500K
- **Beam spread:** 9.2° | 12.6°
- **Luminous flux:** 750lm | 850lm
- **Illuminance (max lux 1.0m):** >16,000lx (12W with 9° lens)
- **Dimensions (hexagonal):** 50x48.5mm, h=16.5mm

Clara ID.12.24-36.6.940-9	Ra	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
3,800K	97	98	97	94	98	97	96	99	97	88	91	97	83	98	96	97

Examination and minor surgery light fixtures

OptoDrive™ SVEA is a complete lighting module with integrated control, customised to suit medical light fittings. SVEA is only two centimetres high and can easily be integrated into most light fixtures for examination and minor surgery. The quality of light exceeds most lighting sources of today and is compliant with the highest standards, i.e. the cyanosis observation index and guidelines for light used in diagnosis of patients in hospital wards.

The module provides well-balanced white light (~Ra96) with a powerful, even spread that makes it usable in light fixtures for examination and minor surgery. The service life is approximately 50,000 hours.

The OptoDrive™ SVEA series is designed for high current operation and high flux output applications. The thermal management performance exceeds other power LED solutions thanks to a new SMD design and thermal emission materials, along with the most efficient switch technology.

OptoDrive™ SVEA 7-LED

LED module for examination and minor surgery

- **Power consumption:** 10W | 15W
- **Supply voltage:** 30-36 VDC
- **Colour rendering index (CRI):** Ra:96 | R9:98
- **Correlated colour temperature (CCT):** 4,000K
- **Beam spread:** 9° | 12°
- **Luminous flux:** 1,000lm | 1,400lm
- **Illuminance (max lux 1.0m):** >25,000lx (15W with 9° lens)
- **Dimensions (hexagonal):** width ≈85mm, height ≈20mm



Svea ID.15.30-36.7.940-9	Ra	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
4,000K	98	98	99	97	98	97	96	98	98	98	98	98	79	99	98	97

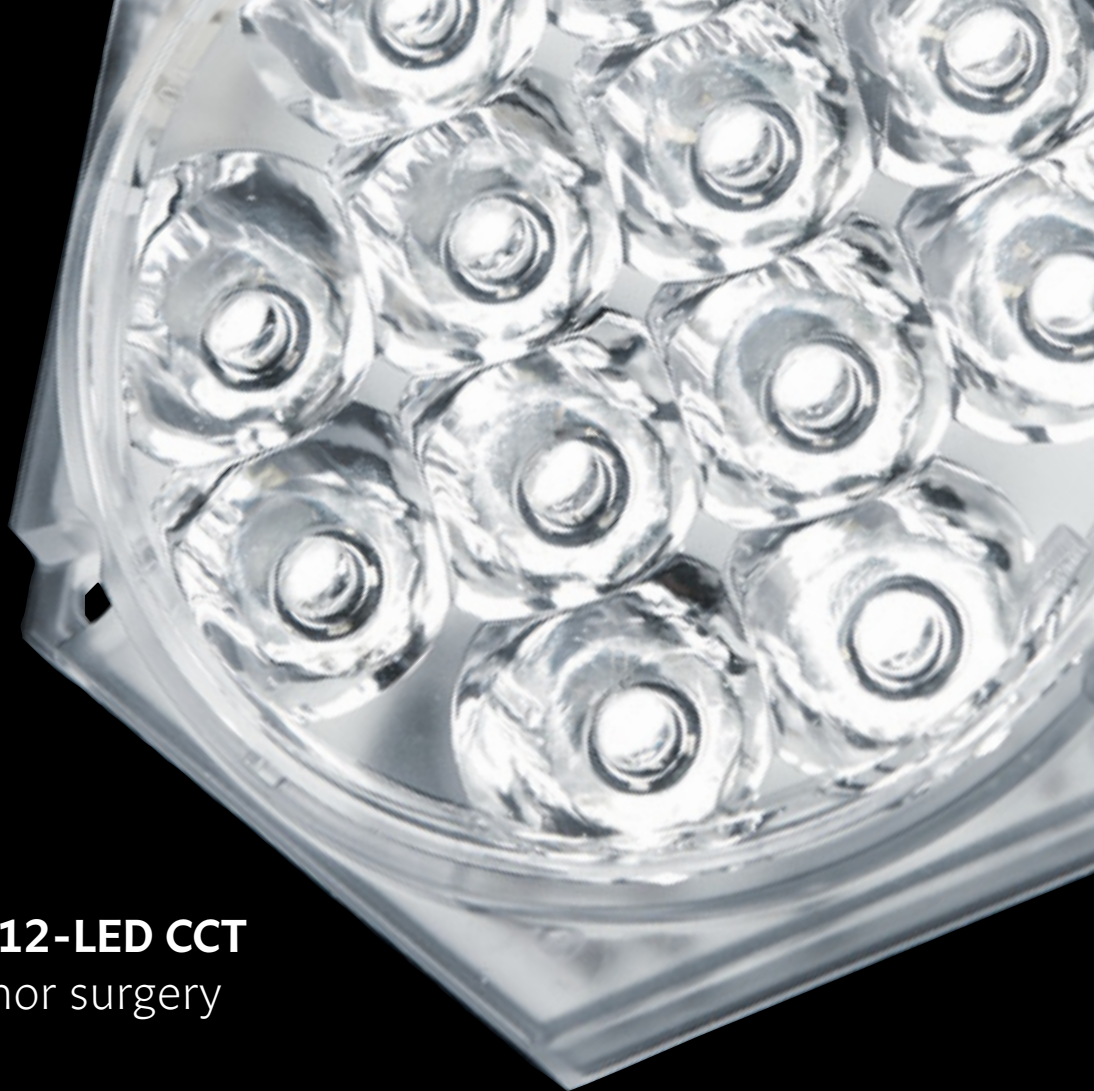
OptoDrive™ SVEA 12-LED

LED module for minor surgery

Power consumption:	17W 30W
Supply voltage:	24-36 VDC
Colour rendering index (CRI):	Ra:96 R9:98
Correlated colour temperature (CCT):	4,000K
Beam spread:	9° 12° 16° 22°
Luminous flux:	1,500lm 2,500lm
Illuminance (max lux 1.0m):	>30,000lx (17W with 9°)
Dimensions (hexagonal):	width ≈85mm, height ≈20mm



Svea ID.17.24-36.12.940-9	Ra	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
4,000K	98	98	99	97	98	97	96	98	98	98	98	98	79	99	98	97



OptoDrive™ SVEA 12-LED CCT

LED module for minor surgery
with variable CCT




Power consumption:	15W (30W)
Supply voltage:	24-36 VDC
Colour rendering index (CRI):	Ra:>96 R9:>96
Correlated colour temperature (CCT):	3,500-4,500K
Beam spread:	9° 12° 16° 22°
Luminous flux:	1,170lm (2,340lm)*
Illuminance (max lux 1.0m):	>20,000lx (with 9°)
Dimensions (hexagonal):	width ≈85mm, height ≈20mm

** Digitally controlled lumen output*

Svea ID CCT	Ra	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
3,500K	97	98	99	97	98	97	96	98	98	98	98	98	79	99	98	97
4,000K	96	99	98	92	95	99	96	96	97	99	92	94	85	100	95	99
4,500K	96	99	97	92	95	98	94	96	97	96	90	94	82	99	95	100

Medical LED

CLARA	ID - Medical		
			
Power (Watt)	4W	8W	12W
Current (Volt)	12-36VDC		24-36VDC
LED (Quantity)	3		6
CRI (Ra)	Ra: >90		Ra: 96 R9: 98
CCT (Kelvin)	4,300K		3,500K 4,500K
Optics (Degrees)	12° 40°		9.2° 12.6°
Light output (Lumen)	350lm	600lm	750lm 850lm
Illuminance (Max lux 1.0m)	TBD	>7,000lx (12° lens)	>16,000lx (9° lens) TBD
Dimmable	Yes		Yes
Surge protection	-		-
Ideal applications	Medical		Medical
Information	Internal driver		Internal driver

SVEA	ID - Medical				
					
Power (Watt)	10W	15W	17W	30W	15W (30W)
Current (Volt)	30-36VDC		24-36VDC		24-36VDC
LED (Quantity)	7		12		12 CCT
CRI (Ra)	Ra: 96 R9: 98		Ra: 96 R9: 98		Ra: 96 R9: 98
CCT (Kelvin)	4,000K		4,000K		3,500-4,500K
Optics (Degrees)	9° 12°		9° 12° 16° 22°		9° 12° 16° 22°
Light output (Lumen)	1,000lm	1,400lm	1,500lm	2,500lm	1,170lm (2,340lm)*
Illuminance (Max lux 1.0m)	TBD	>25,000lx (9° lens)	>30,000lx (9° lens)	TBD	>20,000lx (9° lens)
Dimmable	Yes		Yes		Yes
Ideal applications	Medical		Medical		Medical
Information	Internal driver		Internal driver		Adjustable CCT Internal driver

* Digitally controlled Lumen output



OptoDrive™ reduces environmental impact

OptoDrive™ reduces environmental impact thanks to energy efficiency that is second to none. The modules contain no toxic substances and has a very long service life. This service life means significant cost savings for the end user, especieally if the modules are used for general lighting in large rooms.

- **10% of the energy consumption of an incandescent bulb**
- **20% of hte energy consumption of a halogen bulb**
- **No toxic substances such as mercury or lead**
- **Over 50,000 hours of burning time with good cooling**

Greener and more energy efficient

Six times more energy efficient than incandescent bulbs, 50 % better than fluorescent or low-energy bulbs! One LED module is equivalent to the life of 50 incandescent bulbs.

Do you want to know more about the benefits of OptoDrive™ LED?

Read more about OptoDrive™ at www.optoga.com.
You can also register your interest via info@optoga.com.

Obviously, you can also call us on +46 (0)589 490 950.

Optoga AB

Optoga AB was founded in November 2004 but has many more years of experience in electronic components. The company develops and supplies LEDs and LED-modules solutions for the lighting industry, vehicle manufacturers and electronics companies.

By developing products with integrated LED and driver electronics, Optoga has taken the initiative to replace strip lights, incandescent and halogen bulbs with LED-based light sources.

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The logo for Optoga AB, featuring the word "optoga" in a bold, dark blue, sans-serif font. The 'o' is lowercase and the 'ga' is lowercase, while 'PT' is uppercase.