LA AT020MIT

Mid Infrared LED module (940 nm)

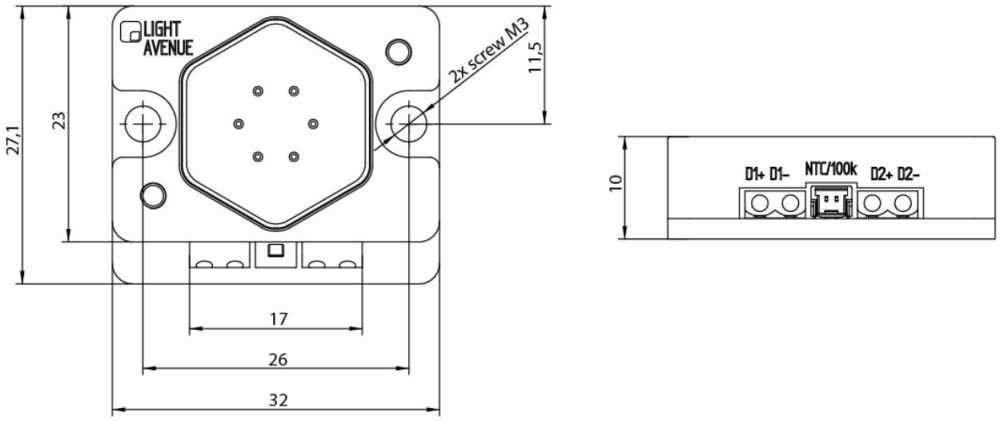
A Brand of Chips 4 Light GmbH

Light Avenue's Sevengine LED module series is a highly efficient LED source with optimized thermal management and low viewing angle based on TIR technology. Modules can be connected in series up to 300 V and can be equipped with secondary lenses. The middle LED can be addressed separately per design, but in this case the same chip is placed there. Electro-optical values refer to 7 identical LEDs in that module.

Features

- Optical power 4000 mW
- Centroid wavelength 940 nm
- Leading edge of light engine technology
- Viewing angle ±10°
- Ultra-high-pulse performance
- NTC monitoring

Dimensions



All dimensions in mm. Tolerance ±0.2

Material data

DESCRIPTION	MATERIAL
LED chip	AlGaAs
Package	aluminum
Lens System	silicone TIR lens system

Important safety advice

Depending on the mode of operation, these devices emit highly concentrated light which can be hazardous to the human eye. Do not expose eyes or skin directly and/or through optical lenses. When handling the modules wear appropriate safety glasses.

Copyright ©, Chips 4 Light GmbH. All Rights Reserved. Content is subject to change without notice.

Electro-optical characteristics ($T_A = 25°C$)[2]

PARAMETER	SYMBOL	CONDITION	MIN.	TYP.[1]	MAX.	UNIT
Radiant power	Φ_e	$I_f = 1000$ mA		4000		mW
Forward voltage	V_F	$I_f = 1000$ mA		20		V
Centroid wavelength	$\lambda_{centroid}$	$I_f = 1000$ mA	925	940	955	nm
Beam Divergence Angle	θ	$I_f = 1000$ mA		20		°

Maximum ratings ($T_A = 25°C$)

PARAMETER	SYMBOL	CONDITION	MINIMUM	MAXIMUM	UNIT
Operating Current	$I_{f,max}$			1000	mA
Operating Pulse Current	$I_{fp,max}$	$t_p = 10\mu$s, D = 2%		1500	mA
Operating Temperature	T_{op}		-40	100	° C
Storage Temperature	T_{st}		-40	100	° C
Reverse Voltage	V_R		no reverse operation		V

Thermal characteristics

PARAMETER	SYMBOL	VALUE	UNIT
Thermal resistance	$R\Theta_{J-Pin}$	0.3	K/W

Note: Module needs to be fixed by screwing (2 x M3). Thermal improvement can be achieved by using a carbon foil between the module and heatsink.

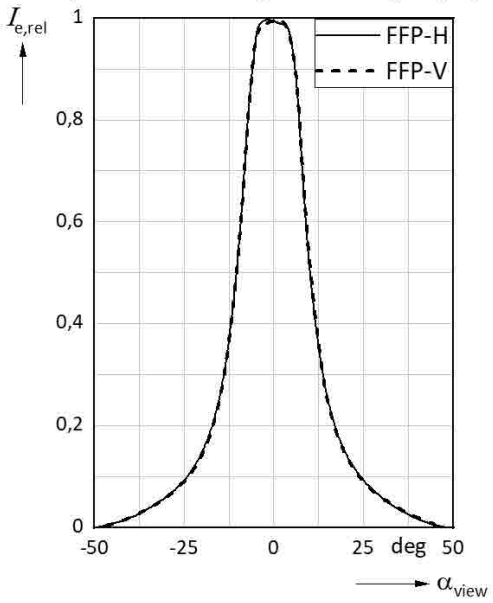
Electrical connection

Outer ring of 6 LEDs can be driven individually in series by connecting D2. The inner LED can be driven by connecting D1. Currently the LEDs are equipped with the same LEDs and can be connected in series consequently, but it is of course possible to place a different LED in the center. Please ask us for more information. The NTC can be connected from the side also.

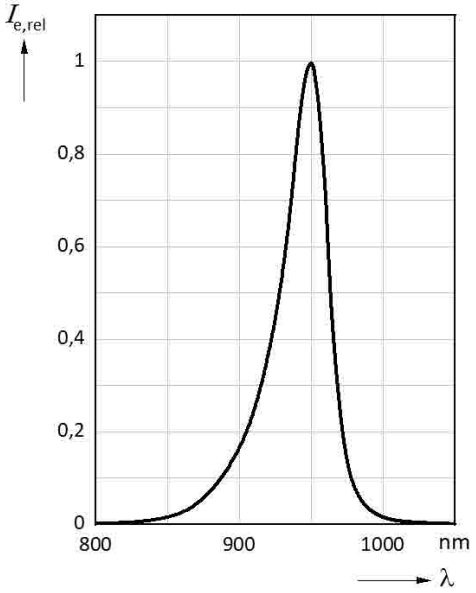
Copyright ©, Chips 4 Light GmbH. All Rights Reserved. Content is subject to change without notice.

Typical characteristics graphs

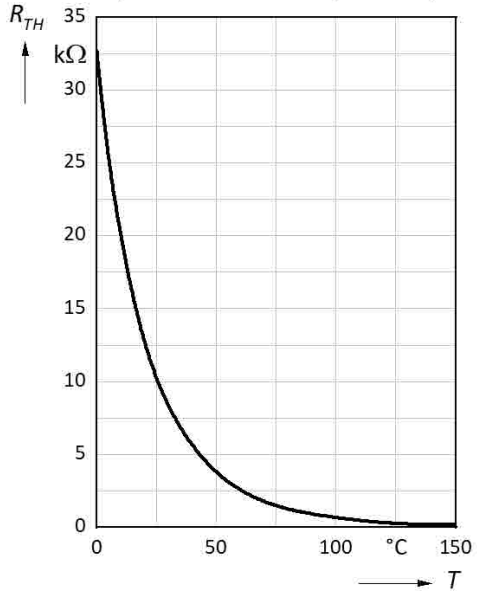
Typical Spatial Distribution
(Relative Intensity vs. Viewing Angle)



Spectrum (Relative Intensity vs. Wavelength)



NTC Thermistor Output
(Resistance vs. Temperature)



Copyright ©, Chips 4 Light GmbH. All Rights Reserved. Content is subject to change without notice.

Important Usage and Application Information

Lead free product - RoHS compliant.
All products, product specifications and data to improve reliability, function, design or otherwise are subject to change without notice. The information describes the type of component and shall not be considered as assured characteristics.
Due to technical requirements components may contain dangerous substances. For information on the types in question please contact our Sales Organization.
The light output of the products may cause injuries to human eyes in circumstances where the products are viewed directly with unshielded eyes. LEDs can emit highly concentrated light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1 and IEC 62471. When using this product, please stay within the maximum ratings, pay attention to the other instructions, conditions and precautions described in this datasheet. We will assume no responsibility for any damages resulting from improper use of this product.

Handling and Storage Conditions

The package is a not hermetic package. Please be careful by using this product in humid atmosphere or atmosphere containing caustic or corrosive gases as this may cause the product to fail.

Packing

LED Modules are arranged in trays. A cover is put on the top of the tray. For shipment the trays are arranged to stacks and placed into a packaging box. Please use the recycling operators familiar to you. If required you can ask for our help. Please get in touch with your nearest sales office. By agreement we will take packing material back, if sorted. Transport costs of any kind must be paid by customers. For packing material that is returned to us unsorted or which we are not obliged to accept, any costs incurred will be invoiced to you.

Returns and Complaints

For complaints and returns of material a RMA-number is necessary. Samples for analysis purposes can be send to us without credit.

Shipping Conditions

If not otherwise arranged, the "General Terms of Business of Chips 4 Light GmbH" apply for any shipment. If this document is not familiar to you, please request it at our nearest sales office.

Copyright ©, Chips 4 Light GmbH. All Rights Reserved. Content is subject to change without notice.

Disclaimer

Attention please! Components used in life-support devices or systems must be expressly authorized for such purpose!

Critical components[3] may only be used in life-support devices[4] or systems with the express written approval by us.

Chips 4 Light GmbH, its affiliates, agents, and employees, and all persons acting on its or their behalf, disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product. Chips 4 Light makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Chips 4 Light disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability. Statements regarding the suitability of products for certain types of applications are based on Chips 4 Light 's knowledge of typical requirements that are often placed on Chips 4 Light 's products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Chips 4 Light 's terms and conditions of business, including but not limited to the warranty expressed therein. Except as expressly indicated in writing, Chips 4 Light 's products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Chips 4 Light product could result in personal injury or death. Customers using or selling Chips 4 Light products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Chips 4 Light personnel to obtain written terms and conditions regarding products designed for such applications. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Chips 4 Light. Product names and markings noted herein may be trademarks of their respective owners.

Published by:
Chips 4 Light GmbH
Am Kuehlen Kasten 8
93161 Sinzing
Germany
www.chips4light.com
info@chips4light.com
All Rights Reserved

[1]Due to the special conditions of the manufacturing processes of lasers, the typical data or calculated correlations of technical parameters can only reflect statistical figures. These do not necessarily correspond to the actual parameters of each single product, which could differ from the typical data and calculated correlations or the typical characteristic line. If requested, e.g. because of technical improvements, these typ. data will be changed without any further notice.

[2]Light Measurements are done with an accuracy of ±15%. Voltage and wavelength are measured with an accuracy of ± 0.1 V and ± 1 nm. Correlation to customer's equipment and products is required.

[3]A critical component is a component used in a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or the effectiveness of that device or system.

[4]Life support devices or systems are intended(a) to be implanted in the human body,or(b) to support and/or maintain and sustain human life.If they fail, it is reasonable to assume that the health and the life of the user may be endangered..

Copyright ©, Chips 4 Light GmbH. All Rights Reserved. Content is subject to change without notice.