

Epishine's Organic Indoor Light Energy Harvesting Modules (LEHs) are the result of 30+ years experience of research in organic electronics and photovoltaics. Epishine LEHs are flexible and can be used alone or in conjunction with capacitors to replace batteries or prolong their lifetime in low-power applications.

/ In short

- Ideal for powering wireless indoor low-power applications, such as IoT devices, sensors and small electronics
- Cut total cost of ownership by half or more and significantly reduce the amount of waste batteries (by eliminating battery replacements)
- Industry leading performance under indoor light conditions,
 e.g. home, office, supermarket, etc.
- Flexible, compact and lightweight design with 0.2 mm thickness for easy integration
- Fully customizable¹ and available in 6 standard versions for optimal usage of available product area
- Radio-transparent, making it possible to use more product area for the module

Our modules²

• Based on organic materials. Made in Sweden







Office

500 lux



Supermarket 1000 lux

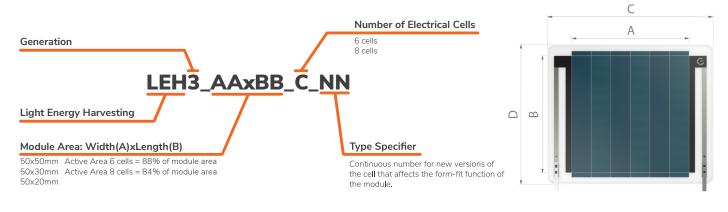
Operating Environment _ Power Density³ of Active Area Intended for indoor use 18±2µW/cm² (at 500lux) Temperature: -20°C to 40°C Active Area 6 cells = 88% of module area Active Area 8 cells = 84% of module area Humidity: 0 to 85%RH **Smallest Bending Radius** 1cm (along longer side) **Encapsulation Barrier** Protects the LEH module from oxygen and moisture **Electrical Contacting** Low resistance crimp contacts with soldering tabs

 $^{\scriptscriptstyle 1}$ We can provide layouts with cut-outs and holes

² We constantly try to improve our products (and ourselves) and hence all technical data is subject to change without notice ³ Typical values measured at 500 lux warm white LED on white background at $22\pm2^{\circ}$ C and a relative humidity of $45\pm2\%$

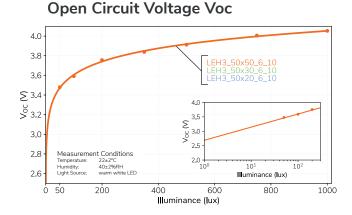
Epishine AB Wahlbecksgatan 25 58213 Linköping, Sweden

/ Key characteristics & general outputs

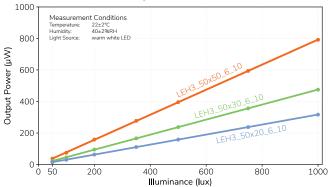


Product Code	Open Circuit Voltage ^{1,2} (V)	Short Circuit Current ^{1,2} (µA)	Output Power ^{1,2} (μW)	Cells	A (mm)	B (mm)	C (mm)	D (mm)
LEH3_50x50_6_10	3.8	147	418	6	50	50	71.5	60
LEH3_50x50_8_10	5.05	105	375	8	50	50	71.5	60
LEH3_50x30_6_10	3.8	88	250	6	50	30	71.5	40
LEH3_50x30_8_10	5.05	62	221	8	50	30	71.5	40
LEH3_50x20_6_10	3.8	59	167	6	50	20	71.5	30
LEH3_50x20_8_10	5.05	42	150	8	50	20	71.5	30

 1 We constantly try to improve our products (and ourselves) and hence all technical data is subject to change without notice 2 Typical values measured at 500 lux warm white LED on white background at 22±2°C and a relative humidity of 45±2%



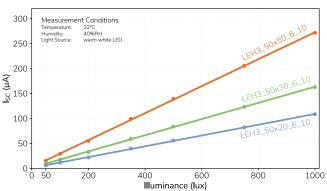
Maximum Output Power Pmax



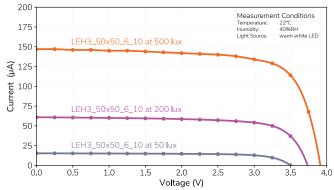
sales@epishine.com

www.epishine.com

Short Circuit Current Isc



Current-Voltage Characteristics



Epishine AB Wahlbecksgatan 25 58213 Linköping, Sweden

/ Low illumination Output

epishine

The electrical output of our LEH3 series modules is maintained at a high level also under low light conditions.

Power ¹ (μW)								
	LEH3_50x50_6_10	LEH3_50x30_6_10	LEH3_50x20_6_10					
50 Lux	35	21	14					
100 Lux	75	45	30					
200 Lux	155	94	62					

¹Typical values measured at warm white LED on white background at 22±2°C and a relative humidity of 45±2%

/ Temperature Dependence

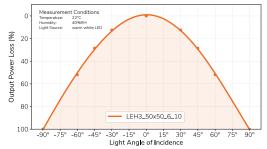
The electrical output charactersitics of our LEH3 series modules show a slight temperature dependence within the specified operating environment, with excellent low-temperature behaviour. Note that humidity does not affect the output characteristics within the standard operating conditions. All mechanical properties remain the same throughout a wide range of conditions.

Open Circuit Voltage Maximum Output Power LEH3_50x50_6_10 LEH3_50x50_6_10 -20 -20 0 0 Output Power Loss (%) /oltage Loss (%) 20 20 40 40 60 60 80 80 leasurement Conditions Measurement Conditions 300lux 40%RH warm white LED 300lux 40%RH 100 100 Light Source Light Source: warm white LED 30 -30 -20 20 30 40 50 -30 -ż0 -10ò 10 20 40 50 -10 10 Temperature (°C) Temperature (°C)

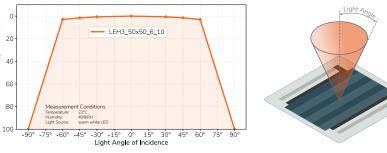
/ Light Angle Dependence

The electrical output characteristics of our LEH3 series modules have a comparably low angular dependence. The angular dependence is a function of light refraction and reflection at the surface and may be further improved by e.g. surface modification. Please contact us for more information.

Maximum Output Power



Open Circuit Voltage



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Circuit Voltage Loss (%)

Open

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