Technical features of resolite T5

EOL (End of Life)
Automatic protection (cut off) at the end of the lifetime of the lamp

Preheating of both filaments
A microcontroller controls the preheating of the filaments. Therefore it is possible to start the lamp over 400,000 times

Calibration of the nominal rating
The microcontroller operates the lamp at its optimal operating point by automatically adjusting the electrical parameters. The lifetime of the lamp therefore increases.

Optimal thermo-management
To obtain a long lifetime of the ECG a thermo-management is implemented in the control gear. This thermo-management is protected by a patent.

Electromagnetic compatibility (EMC)
"resolite T5" complies with the required limits for harmonic current emissions (IEC 61000-3-2) and the required limits of radio disturbance characteristics (IEC/CISPR 55015) , in combination with every type of luminary for T8 fluorescent lamps. Resoswitch can compile an inspection sheet for every type of luminary.

Active power factor correction (PFC)
The portion of reactive power is reduced by drawing a sinusoidal current from the line.

Operation of the lamp controlled by a microcontroller
All critical operating conditions of the lamp are monitored by a microcontroller (IEC 61347); the lamp is operated in that way the longest lamp lifetime is achieved (IEC 60929); detection of broken filaments

Cut-off technology
To achieve low power consumption, the filaments of the lamp are only heated before the ignition of the lamp and not during the operation of the lamp.

ENEC-certification of resolite T5 in combination with T5 35W fluorescent lamp.

Technical specification of resolite T5

Lamp		T5 HE 35 W	T5 HE 28 W
Input power		39 W	31,5 W
Lamp power		35 W	28 W
Power loss (electronic control gear)		3 W	2,6 W
Power loss (conventional ballast)		1 W	0,9 W
Efficiency factor		90%	89%
Input nominal voltage		230 V	230 V
Input nominal current		171 mA	139 mA
Power factor		0.99	0,98
Total harmonic dissipation		<10%	<10%
Crest factor		<1.4	<1.4
Nominal operating frequency		30 kHz	30 kHz
Input voltage range		200 V … 250 V	200 V … 250 V
Ambient temperature		0 °C … 55 °C	0 °C … 55 °C
Product life (ECG) at	35 °C	200,000 h	200,000 h
	45 °C	100,000 h	100,000 h
	55 °C	50,000 h	50,000 h

resoswitch GmbH

resolite T5 meets all suggestions for improvement proposed by well-known lamp manufacturers and norm committees. The result of this work is an ECG, operating the lamp safely and in an optimal way, ignites more than 400,000 times and grants an average energy saving potential of 45%.

Award and certification of the **reso**lite T5

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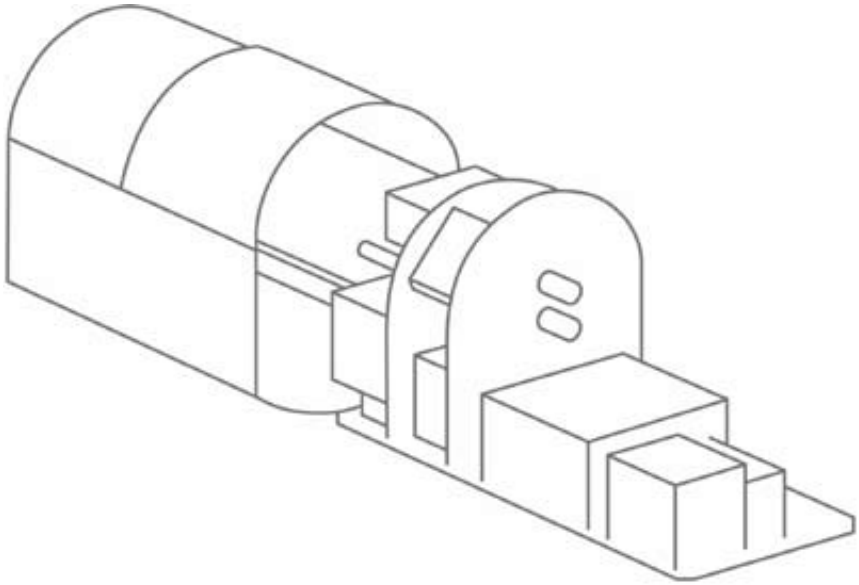
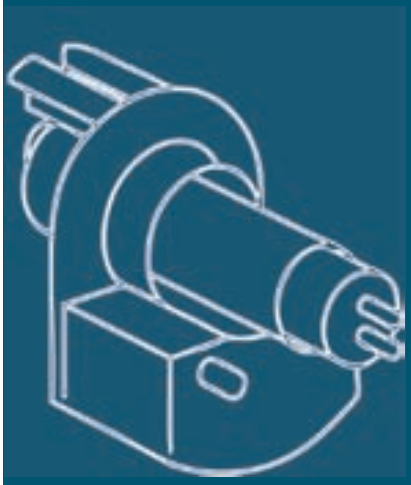
resolite T5



Digital Clip-on ECG
ENEC-certification
High illuminance
Patented thermo-management
Preheating of the filaments
More than 400,000 lamp ignitions
Decrease of energy cost up to 50%
Product lifetime more than
50,000 h at 55°C
Made in Germany



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Development

The development crew of resoswitch grew out of a study group on "optical radiation technology", originally based at the Light Technology Institute of Karlsruhe University (KIT). Core competence of this team is in analogue and digital circuit technology, lamp physics and plasma physics and the technology of filament and light engineering. Based upon a substantial expert knowledge of IT, physics and applied light engineering, the company resoswitch GmbH is already offering the complete range of know-how of any established ECG (electronic control gear) manufacturer.

On-site engineer service

In order to determine all of the advantages you can gain by re-fitting, your lighting system will be thoroughly inspected and checked by our engineers before contract signature. Our engineers will identify for you on-site the actual energy saving as well as the future light distribution. This service is completely free of charge. Our engineers will also evaluate the electro-mechanical condition of your lamps, in order to ensure a smooth and safe refit.

Fully automated production ensures high quality standard

In order to meet the demand for highest quality in ECG technology, the resolite T5 is produced by a certified German company. The "in-circuit-test" and the functionality test ensure maximum reliability and a minimal error rate (of the order of parts per thousand).

Consequent development

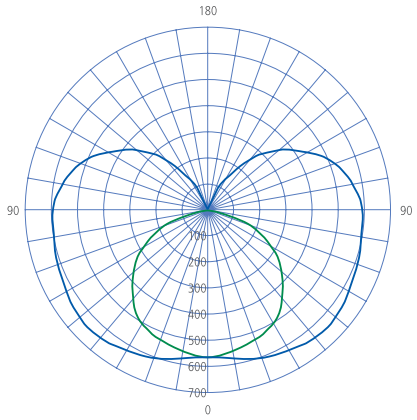
None of the T5 refit adapters currently available on the market offers a satisfactory solution. The weak spots such as large failure rates, low lighting power, security issues or lack of EMC-adherence have been closely analysed and resolved by developing the resolite T5.

resolite T5 meets all suggestions for improvement proposed by well-known lamp manufacturers and norm committees. The result of this work is an ECG, operating the lamp safely and in an optimal way, ignites more than 400,000 times and grants an average energy saving potential of 45%.

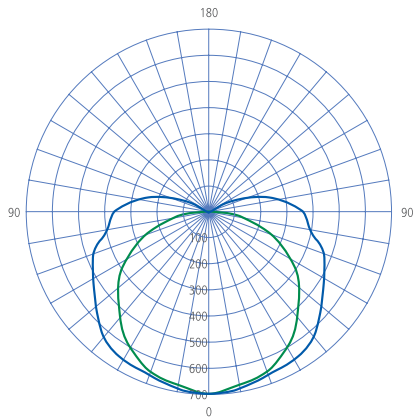
Product innovation and sustainability

The resolite T5 is resoswitch's newest digital control gear. The clip-on mechanism of the resolite T5-ECG enables an easy, cheap and fast refit of your T8 lamps with conventional ballast to the newest and most efficient T5 lamp technology. You will neither have to buy new luminaires, nor will you face any drop-out time of your lighting system during the re-fitting process.

resolite T5 is the first digital control gear with clip-on mechanism, which is ENEC certified.



Light distribution curve
of a T8 58W fluorescent
lamp – without reflector



Light distribution curve
of the "resolite T5 35W"
system. (ECG + reflector + T5-lamp)

Constant illuminance – decrease of the energy cost

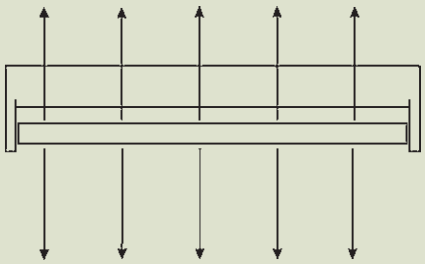
Only with the combination of the

- resolite T5 ECG
- high-performance reflector
- T5 Lamp

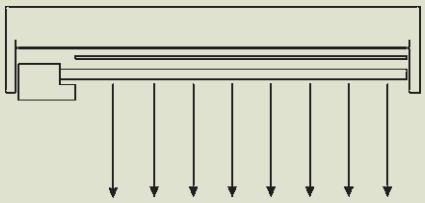
real energy savings can be achieved. Thereby the light distribution doesn't change in the effective area. By reducing the lamp power from 58 W (T8) to 35 W (T5), the input current can be reduced as well, which means that the loss of the ballast (KVG) decreases from 7–13 W down to 1 W. That means an energy saving potential of 30% (minimum) to 50% (maximum).

Effective illumination on the work space

Conventional T8-luminaires without reflectors emit light uniformly in every direction, e.g. the ceiling. With the resolite T5-reflector, light is emitted only in the direction of the work space.



Conventional T8 58W fluorescent
lamp – without reflector



resolite T5 35W fluorescent lamp
with reflector

Yield increase due to protection of investment and high-tec

Refitting your old T8-fluorescent lighting system to the most efficient T5 lamp technology, is very economical, if you use the resolite T5 system. Thereby you keep your actual intact lighting system. Only the T8-fluorescent lamp has to be replaced by the resolite T5-system.

Reduction of the energy cost up to 50%

Operating a lighting system with resolite T5 reduces the energy cost up to 50% in comparison to T8–fluorescent lamps with conventional ballasts. The energy consumption is reduced from e.g. 72 W to 39 W. However the illuminance on the work space is retained unchanged.

	operation with T8 lamp and ballast	**efficient operation with resolite T5**	**Energy saving mechanism**
lamp	58 W	35 W	modern lamp-technology with improved efficiency
ballast	14 W	1 W	ballast-losses are reduced by the reduction of the lamp power
ECG	-	3 W	
sum	**72 W**	**39 W**	**The saving of energy is in the range of 30% and 50%**

	T8	**resolite T5**		
number of luminaires	Present electricity costs p.a*)	Electricity costs p.a. in the future*)	*Reduction of electricity costs p.a.*)*	Reduction of CO_2*)
1	38.15 €	20.98 €	*17.17 €*	0.08 t
500	19,077 €	10,492 €	*8,585 €*	39.88 t
1,000	38,154 €	20,985 €	*17,169 €*	79.75 t
2,000	76,308 €	41,970 €	*34,339 €*	159.50 t
5,000	190,771 €	104,924 €	*85,847 €*	398.75 t

*) Base: burning time / day: 12 h
Days / year: 320
electricity tariff/kWh: 13.8 ct
average reduction of cost: 45%

Improved CO_2 balance

Due to the efficient illumination of the working space with the resolite T5 system you can reduce your CO_2 emission.

Operating a lighting system with resolite T5 reduces the energy cost up to 50% in comparison to T8–fluorescent lamps with conventional ballasts.