LED SYSTEM HOUSE





Eight steps – one partner

From the idea to the finished product



Optoelectronics from the specialist.

At Neumüller, we know everything about the products we sell. For our customers worldwide, this means certainty and trust in our solutions. The way from the idea of a product to serial manufacturing can be very complex. Thus, the interlocking processes need to be secured, uninterrupted and transparent. Our proven process chain includes the eight steps of product development, as well as the following adjustments. This ensures that every product meets the high expectations of our clients.

Defining standards

Every project and every product begins with an idea. This idea needs to be realized in a technically and economically optimized way. This requires the transfer of knowledge of all people involved. In meetings and structural discussions, the requirements get linked with the conditions, and together they get fixated in a PRD (product requirement document). After the successful definition of parameters, the realization starts.

Selecting the LED

First of all, the core-component-LED has to be defined. The range of LED-designs and performance classes is wide. Through our close cooperation based on partnership with Seoul Semiconductor, one of the worldmarket-leaders in LED-production, we always have access to the ideal LED. SMD-LEDs in the range of 20mA to 150mA can be used, i.e. for areal lamp-concepts, while high-power-LEDs in the range from 350mA to 2800mA are available for punctual spotlight-applications or uniform backlights. The use of Acriche-LEDs is also possible. These can be operated directly on 230VAC voltage, without need of further control gear.







Choosing the system-components

In step 3, the additional components are selected. An efficient, durable and profitable LED-system can only be created, if all parts of the system interact perfectly. If the employment of secondary optics is intended, a suitable optic has to be selected out of the wide range of products of different optics-manufacturers, or a new, customized optic has to be developed. Additionally, the ideal PCBmaterial needs to be chosen. The next challenge is the LED's power supply. The best solution has to be found in the mulitude of possible supply-concepts. Therefore, the according IC-driver units on the PCB, and an efficient, durable LED-control gear are to be selected. Connectors, pigtails, etc. also need to be considered, as they have a significant influence on the LED-modules' installation-handling. It has to be decided which heat management is neccessary. Is the existing lamp-casing sufficient, or is an additional heat sink needed?

Concepts Realization

After defining all single-components, we create the neccessary laboratory prototypes or test arrangements, in order to check the developed concept. For particularly complex challenges, we create several alternative concepts. This proven approach is the starting point for all conceptdevelopments. Only then do we draw up the binding and detailed offer for serial production.

Designing prototypes

Our engineers in the LED-competence-center command a longtime experience in the areas of optoelectronics, electronics, physics and PCBlayout. As a team, they design layouts, including the bill of material. Furthermore, the manufacturing process and the testing requirements for the final test are defined. After realizing all these steps, a close-toproduction prototype is created.









Checking the real-parameters

In our photometric laboratory, we test the prototype for complience with the defined parameters during actual operation. Those include luminous flux, color temperature, CRI, and dispersion characteristics. Additionally, we check the heat management of the LED-module. The control of the overall power consumption in interaction with the control gear is also an important test point, because only thus can the overall efficiency of the system be estimated. The delivery to the customer follows after the successful testing in our LED-competence-center. Now, the final customer testing can take place.

Serial manufacturing

On demand of the customer, the developed LED-module is transferred into serial production. Doing this, the continuous availability of critical system-components has to be ensured. As an authorized distributor of Seoul Semiconductor, we have direct and best access to the LEDs, and we strictly meet the special selection criteria. Different types of packaging and logistics are also considered, because it is our goal to deliver complete high-capacity solutions.

Adjustments and Update

The rapid speed, with which new LED-trends and LED-families are established, demands regular questioning of the own desing. Through the further development of existing LED-solutions, market innovations are promoted, and the own competitive advantage is held. Energysaving potentials also have to be used, i.e. through the employment of intelligent LED-controls / LED-regulators.



Complete LED-solutions from the specialist

More than the pure LED-lamp: In addition to the LED and the LED control gear, we also deliver complete LED solutions. High-performance, long-lasting, energy-efficient. Our complete solutions include everything from PCBs over IC-driver units, sensory systems for presence-notification, light-level measurements, light-steering elements such as optics/reflectors and connectors, to cable packaging. Our experienced team of engineers commands a vast know-how of PCB- and layout-designing. We convert your demand into an economic master plan and into a serial product. At the end, your required LED-solutions await you. In our LED-competence-center with our own photometric laboratory attached, we monitor and secure the product quality in every detail, support the realisation of heat management challenges, and find the appropriate control gear for the ideal drive of LEDs and modules.







Headquarter

Gewerbegebiet Ost 7 91085 Weisendorf Germany Tel. +49 9135 73666-0 Fax +49 9135 73666-60 info@neumueller.com www.neumueller.com Office Nord Beimoorkamp 3 22926 Ahrensburg Germany Tel. +49 4102 66601-0 Fax +49 4102 66601-66 nord@neumueller.com www.neumueller.com