TECH NOTE

TPL VISION
Active LED solutions

IP69K WASHDOWN LIGHTING
– SO MUCH MORE THAN A WATERPROOF CASING!

Operating LED lights within Food or Pharmaceutical manufacturing processes with regular sanitising / washdown operation requires an **IP69K** rated package. Operating across wide temperature ranges, high humidity environments, and cleaning with hot or cold cleaning agents produces **a significant design challenge for the LED Illumination manufacturer**. It's not as simple as just mounting a light within a fluid tight box.

IF YOU'RE CONSIDERING BUILDING YOUR OWN ENCLOSURE, THERE ARE SEVERAL KEY FACTORS WHICH YOU MUST PAY ATTENTION TO:

TEMPERATURE

- ☑ What are the **extremes** of temperature in the operating environment ?
- ☑ How **rapidly** is the temperature changing ?
- ☑ Is the ambient temperature **stable** in the area the product is to be mounted ?

MECHANICAL DESIGN

- ☑ Is the design **easy to clean** ?
- ☑ Do the housing surfaces prevent build-up of **bacteria** and other debris ?
- ☑ Is the material used **inert** to the cleaning chemicals ?
- ☑ Do the materials used have **low thermal expansion**, to prevent stress in the housing ?
- ☑ Is the design **easy to mount**, avoiding additional stress to the housing ?
- ☑ Can the design minimise **internal condensation** ?
- ☑ How is the **air flow** and **temperature** managed inside the casing ?

CLEANING PROCESS

- ☑ What cleaning agents are to be used; can the light casing **withstand** the chemicals ?
- ☑ What is the **temperature** of the cleaning process ?
- ☑ What is the **humidity** created by the cleaning process; can the light withstand this ?
- ☑ What **pressure** is used in the cleaning process, from what distance / angle, and for how long ?
- ☑ Can the housing withstand the **repeated** cleaning process without damage, fluid or particle ingress ?
- ☑ Will the cleaning process create **condensation** inside the light housing ?

SEE OUR TECHNOTE ***IP RATINGS EXPLAINED*** *FOR A DEFINITION OF THE IP RATINGS*

CLICK OR SCAN

Particular attention must be paid to **managing thermal shock**, which occurs if one or more of the above key factors are mis-managed. Thermal shock can create condensation, both on the housing and inside the light assembly itself. This can cause imaging issues, production errors, costly rejected batches, increased maintenance costs and even reduced lifetimes of the LED light.

IPx9K Water Ingress Testing

IP6xK Dust Ingress Testing

TPL Vision's Washdown Lights also go through **a rigorous IP69K certification process** to confirm that the light can withstand the cleaning process and continue to operate, without moisture or particle ingress, meaning you can have complete confidence in using them in your washdown environment.

TPL Vision's Waterproof IP69K Washdown Lights are carefully designed to **maximise the performance** of your application, whilst minimising the impact of the surrounding environment – they are truly much more than a light in a waterproof case.

For more information: click or scan the QR codes

BARLIGHT

BACKLIGHT

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FURTHER READING ON THIS TOPIC IS AVAILABLE AT:

UKIVA Machine Vision Conference 2020 Technology Presentation Hub
https://www.machinevisionconference.co.uk/

EHEDG : European Hygenic Engineering & Design Group
https://www.ehedg.org/

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