

TEST REPORT

Swivel-Head Lamp for use in EX-Zone AccuLux HL 30 EX POWER

A) Scope of Work

A comprehensive test and product evaluation of the Witte + Sutor swivel-head lamp was executed prior to shipment of first products in 2021. Two lamps HL30 EX POWER including charging station were delivered on Sept. 22nd 2020. The lamps are specified for protection class IP67 and the operation temperature range between -20 °C and +40 °C. A lithium-ion battery 5 Ah, 3.7 V is used as storage element that assures an operation time of the main LED for five hours.

In addition, the following documents were presented by Witte + Sutor GmbH:

- Operation instructions and specifications dated 25.8.2020
- Software and functional description as well as amendment of the specification sheet dated 31.8.2020
- EX type examination report 2014/34/EU TÜV-A according to EC directive 20ATEX0001X for intended use in explosive atmosphere dated 25.1.2019 by TÜV AUSTRIA SERVICES GmbH
- Test report 20-0104 dated 17.11.2020 of IKT Kunststofftechnik Stuttgart for mechanical evaluation of the casing plastic material.

B) Test results (Summary)

- The lamps are fully functional. All technical specifications and sub-functions like calibration of fuel gage, switching sequence, display, and emergency light have been fulfilled
- Digital fuel gauging is characterized by high accuracy
- Charge and discharge voltage limits of the secondary battery is properly controlled
- Self-calibration starts automatically after exchange of the lithium-ion battery
- The lamps construction turned out to be very robust. There were no failures or damage after drop test from a height of one meter.

Test and evaluation of the lamps exhibited a mature technology. The micro controller based electronic circuit, the LED module, the electronic boards and the components are of high quality and reliability; protection class and explosion protection have been proven. The plastic body and the design are characterized by superior stability.