

TEST REPORT

Angle-Head Lamp for use in EX-Zone AccuLux HL 12 EX

A) Scope of Work

A comprehensive test and product evaluation of the Witte + Sutor angle-head lamp was executed. One lamp in both battery and rechargeable variant including charging station were delivered on Dec. 14th 2020 and one additional lamp on February 5th 2021. The lamps are specified for protection class IP67 and the operation temperature range between -20 °C and +40 °C. A lithium-ion battery 2.6 Ah, 3.7 V is used as storage element that assures an operation time of five hours or 11 hours in the dimmed mode. In addition, the following documents were presented by Witte + Sutor GmbH:

- Operation instructions and specifications
- EX type examination report TÜV-A 16ATEX0003X according to EC directive 2014/34/EU for intended use in explosive atmosphere dated 08.06.2017 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 have been fulfilled
- The operation time of 4/5 hours were obtained for the rechargeable and battery variant respectively and 11 hours in dimmed mode.
- The charging time is 4 hours; 80% of charge is obtained after 2:20 hours
- Charging can be carried out at 230 Volts AC as well as 12 and 24 Volts DC. If the input voltage falls below the 12 or 24 Volt threshold values, the charging stops
- Charge and discharge voltage limits of the secondary battery is properly controlled
- The lamps passed the water test (30 minutes, 70 cm immersion depth) and were fully functional afterwards
- The lamps construction turned out to be very robust. There were no failures or damage after drop test from a height of 1 and 1.5 meters

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.