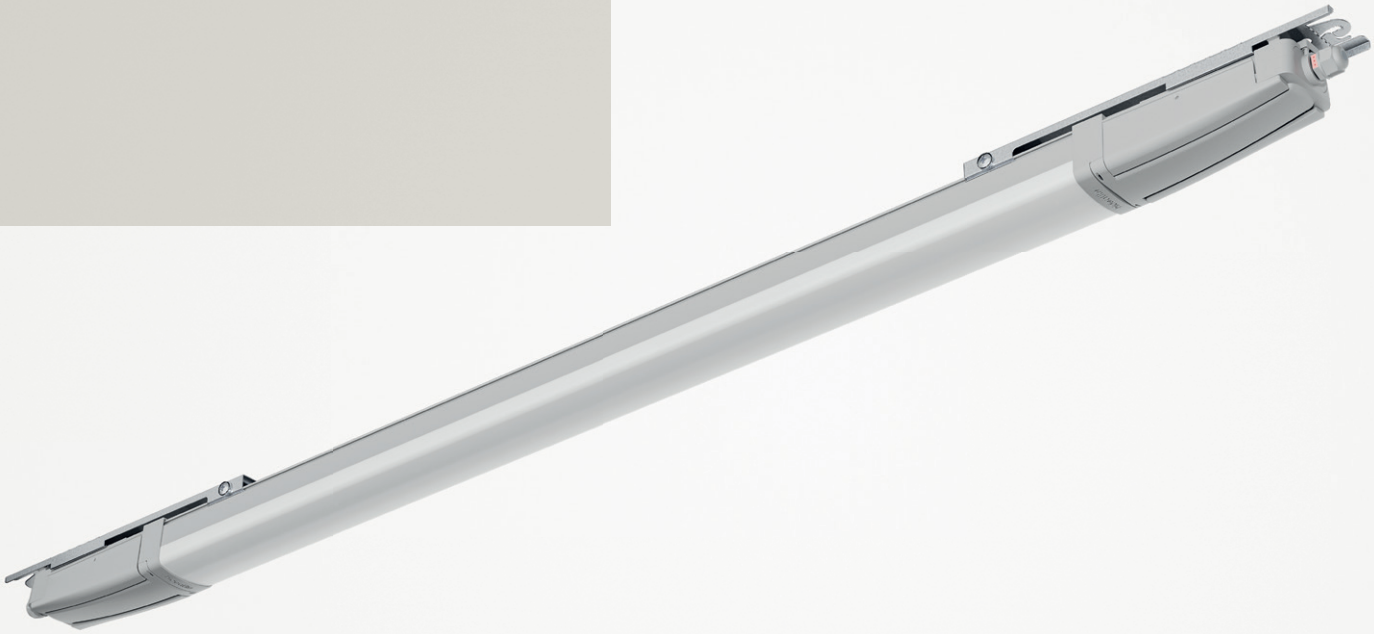
Elektro Elco AB

Liteline IP66+ 1500

Resistance to ammonia, Cleaning distance, Flickerfree



APPROVED 2025 DLG WWW.DLG.ORG

ELEKTRO ELCO
LITELINE IP66+ 1500

- ✔ **Resistance to ammonia**
- ✔ **Cleaning distance**
- ✔ **Flicker free**

DLG Test Report 7553

Overview

A test mark „DLG APPROVED for individual criteria“ is awarded for agricultural products which have successfully fulfilled a scope-reduced usability testing conducted by DLG according to independent and recognized evaluation criteria. The test is intended to highlight particular innovations and key criteria of the test object. The test may contain criteria from the DLG test scope for overall tests, or focus on other value-determining characteristics and properties of the test subject. The minimum requirements, test conditions and procedures as well as the evaluation bases of the test results will be specified in consultation with an expert group of DLG. They correspond to the recognized rules of technology, as well as scientific and agricultural knowledge and requirements. The successful testing is concluded with the publication of a test report, as well as the awarding of the test mark which is valid for five years from the date of awarding.

The ammonia resistance test was performed as a laboratory test according to the patented DLG test standard. This test is intended to determine the suitability of equipment for animal living areas to withstand the impacts of animal environments. The cleaning distance test assesses the suitability for cleaning animal living areas. In the “Flicker-free” test - if neccessary also with different dimming levels – frequency and the modulation depth of a luminaire’s flicker is measured. Since the corresponding stressor does not apply, flicker-free light has a positive effect on animal health.

Other criteria were not tested.

Assessment in brief

The LED light ”Liteline IP66+ 1500” from Elektro Elco AB has successfully completed the DLG test for ammonia resistance, cleaning distance and flickerfree. According to this result, it can be assumed that these luminaires are resistant to the typical environmental conditions of animal living areas and that no accelerated reduction of the product lifetime will occur.

In addition, the LED light was operated actively in the chamber for the entirety of the test. No product damage was observed here.

Furthermore, a minimum cleaning distance of 10 cm was measured.

In dimmed and undimmed operation, the LED luminaire meets and clearly exceeds the high DLG standard.

Table 1:
Overwiew of results:

DLG QUALITY PROFILE	Evaluation*
Resistance to ammonia	■■■■□
Preservation of the luminous flux	■■■■■
Cleaning distance	■■■■□
Flicker free „Liteline IP66+ 1500 DALI“, dimmed	■■■■■
Flicker free „Liteline IP66+ 1500 DALI“, not dimmed	■■■■■

* The DLG test framework specifies the following evaluation range:
■■■ or better = meets, exceeds or clearly exceeds the specified DLG standard,
■■ = meets the statutory requirements for marketing the product, ■ = failed

The product

Applicant and Sales

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Product:
LED-Light „Liteline IP66+ 1500“ and „Liteline IP66+ 1500 DALI“

Manufacturer

AMETALINE LIGHTING CO., LTD
5th Heman Road, Jidongyi, Xialolan Zhongshan
China

Description and technical data

The tested LED light “Liteline IP66+ 1500” is suitable for all areas of agriculture.

Table 2:
Technical data (according to manufacturer)

	Liteline IP66+	
	1500	**1500 DALI**
Electrical connection		
Voltage	220-240 V AC	
Frequency	50 Hz	
Rated input power	55 W	52 W
Dimension		
Length	1,594 mm	
Width	76 mm	
Height	58 mm	
Addition technical data		
Housing material	PMMA (recycelt)	
Material of end caps	RPC recycled material + 10 % glass fibre	
Mounting material	stainless steel	
Protection rating	IP66	
Color temperature (CCT)	3,000 / 4,000 K	
Rated luminous flux	7,868 / 8,345 lm	7,742 / 8,134 lm
Luminous efficiency	143 / 151 lm/W	148 / 155 lm/W
Light angle	109°	
Color rendering index (CRI)	> 80	
Rated service life	L80 100,000 h Ta 25 °C	
dimmable	no	yes, DALI 2

The method

Resistance to ammonia

The ammonia resistance of the LED light “Liteline IP66+ 1500” was determined by a laboratory test with four single luminaires according to the patented DLG test standard for agricultural use. The laboratory test is designed to replicate the conditions of a usage period of about 10 years exposure to animal living areas.

The test was carried out in a climate chamber under the following climate conditions:

Test duration	1500 h
Air temperature	70 °C
Relative humidity	70 %
Ammonia concentration	750 ppm

For assessing the ammonia resistance, each luminaire was examined visually, gravimetrically and the plastic parts additionally through measurement of the hardness (Shore D) before and after the climate testing.
The luminaires have additionally been following a cycle of operation predefined by DLG (3 hours on, 1 hour off) in order to evaluate any thermal impacts caused by switch-on and -off procedures during ammonia fumigation. Furthermore the luminous flux was measured according to DIN EN 13032 before and after the fumigation in order to get additional information regarding the aging process.

In order to avoid overheating (> 70 °C), the luminaires could be operated at a reduced power level during the testing period.

Cleaning distance

During test bench examinations of the mechanical resistance to high-pressure cleaners, the minimum cleaning distance was determined.

The minimum cleaning distance is defined as the distance between nozzle and surface when no damages can be observed at the housing surface.

The test was conducted under the conditions presented in table 3.

Table 3:
Test conditions cleaning distance

Line pressure	~150 bar
Water	cold, approx. 1,000 l/h, no detergents
Nozzle type	Flat spray nozzle, 25°
Exposition time	1 minute
Distance	200 mm, 150 mm, 100 mm, 50 mm
Ambient temperature	10-20 °C

Flicker free

The frequency and modulation depth of the flicker of two test samples for each type of luminaire were measured and assessed at full power. If the luminaire provided is dimmable and dimming is also recommended for practical use, the above tests were also carried ot at 50 % and 10 % of the nominal power.

For the approval of all luminaires in table 2, the LED Light “Liteline IP66+ 1500” was tested in the version with and without dimming. After the tests, the luminaires underwent visual examination to a reference sample that was identical in construction.

Detailed account of the test results

Resistance to ammonia

Visual test

The comparative visual examination after the ammonia exposure has shown minor discolorations inside the luminare.

During the test, the luminaire appeared to be sufficiently gas-tight. Nevertheless it cannot be ruled out, that a limited ammount of ammonium compounds could enter the luminaire housing. Again, no negative impact on the luminaire performance needs to be expected.

The defects are rated as insignificant. The examination of the manufacturer's mounting parts didn't also show any defects.

The active test samples were also dimmed during the test phase. The dimming had no obvious effect on the test result.

Gravimetric test

Weight comparisions before and after the ammonia fumigation have not shown any measurable increases or decreases in weight. All changes determined were within the measurement uncertainty.

Hardness test

During the hardness test (Shore D) no measurable changes were observed. All determined changes were within the measurement incertainty.

Functional test

No defects were observed. All luminaires worked after the conducted tests.

Preservation of the luminous flux

After completion of the test the luminaire still had a luminous flux of 92.8 %.

Based on the results of these tested parameters, the luminaire is evaluated as resistant to ammonia.

Cleaning distance

Even at a cleaning distance of only 10 cm, no damages to the luminaire could be observed.
At no time a water ingress into the luminaires was noticed.

In order to avoid damage to the luminaires during cleaning reliably, according to the manufacturer's specifications a minimum cleaning distance of 10 cm should always be ensured.

Flicker free

The frequency of the DALI version was 100 Hz in the undimmed state (modulation depth 0.6 %) and 836 Hz (0.92 %) in the dimmed state.

Summary

The results show that the LED light “Liteline IP66+ 1500” in the version with and without dimming fullfills the testing requirements for ammonia resistance, cleaning distance and flicker free and thus receives the test mark DLG APPROVED. It can be expected that the luminaire is resistant to ammonical air in animal living areas and that no accelerated reduction of the product lifetime occurs.

The LED light “Liteline IP66+ 1500” was operated both passively and actively during the ammonia fumigation in the test chamber and passed both tests successfully.

The luminaire achieved a cleaning distance of 10 cm without any visible damage.

When dimmed and undimmed, the luminaire achieved the best possible rating for the DLG requirement for flicker-free lighting.

Further information

Testing agency

DLG TestService GmbH,
Gross-Umstadt location, Germany
The tests are conducted on behalf of DLG e.V.

DLG test framework

DLG APPROVED Test “Lighting systems in animal houses” (current as of 06/2025)

Department

Farm Inputs

Division head

Dr. Michael Eise

Test engineer(s)

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DLG. An open network and professional voice.

Founded in 1885 by the German engineer Max Eyth, DLG (Deutsche Landwirtschafts-Gesellschaft – German Agricultural Society) is an expert organisation in the fields of agriculture, agribusiness and the food sector. Its mission is to promote progress through the transfer of knowledge, quality standards and technology. As such, DLG is an open network and acts as the professional voice of the agricultural, agribusiness and food sectors.

As one of the leading organisations in the agricultural and food market, DLG organises international trade fairs and events in the specialist areas of crop production, animal husbandry, machinery and equipment for farming and forestry work as well as energy supply and food technology. DLG’s quality tests for food, agricultural equipment and farm inputs are highly acclaimed around the world.

For more than 130 years, our mission has also been to promote dialogue between academia, farmers and the general public across disciplines and national borders. As an open and independent organisation, our network of experts collaborate with farmers, academics, consultants, policymakers and specialists in administration in the development of future-proof solutions for the challenges facing the agriculture and the food industry.

Leaders in the testing of agricultural equipment and input products

The DLG Test Center Technology and Farm Inputs and its test methods, test profiles and quality seals hold a leading position in testing and certifying equipment and inputs for the agricultural industry. Our test methods and test profiles are developed by an independent and impartial commission to simulate in-field applications of the products. All tests are carried out using state-of-the-art measuring and test methods applying also international standards.

Internal test code DLG: 2501-0049

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