



## INSTALLATION MANUAL

# EyeBeam MB Titania

DOC.NO: AVE-EMB-IM

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## Part 0 Manual Administration


### 0.1 Document Approval

This document has been established in accordance with an alternative procedure to DOA approved under EASA AP429.


This installation manual is applicable for part numbers:

- |                                 |                       |
|---------------------------------|-----------------------|
| • EyeBeam MB Titania - Silver   | <b>AVE-EMBILW-TS0</b> |
| • EyeBeam MB Titania - Black    | <b>AVE-EMBILW-TB0</b> |
| • EyeBeam MB Titania NVIS white | <b>AVE-EMBILW-TB1</b> |

Compiled by: \_\_\_\_\_ 30 – May - 2025

  
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Approved by: \_\_\_\_\_ 30 – May - 2025

  
Georg Hartl  
Head of DO, Aveo Engineering Group, s.r.o.

## 0.2 Amendment Record Procedure

The master copy of this document shall be kept electronically as a read only document under the control of Aveo Engineering Group, s.r.o. as Master Copy.

**ALL** amendments to this manual will initiate a raise of issue.

The original issue will be identified by "**01**", and subsequent issues will be numbered sequentially from 02 to 99 in Table 01 - **Issue No.** column.

**ALL** issues of this document will be approved by Head of DO.

Issue No.	Details	Date	Affected Pages
01	Initial Issue	23.Oct.2020	ALL
02	Installation note addition EU REACH Regulation	14.Apr.2021	8, 12 13
03	PN Update Operating Instruction Update Performance Update Technical Drawing Update Testing Before Installation	30.May 2025	ALL 5 6 7 12

**Table 01: Document Amendment Record Table**

## 0.3 Affected Pages Procedure

ALL pages affected by ANY raise of issue of this document will be listed in Table 01 - **Affected Pages** Column.

The reason(s) for **EACH** raise of issue and the description of respective change will be provided in Table 01 - **Details** Column.

Changes from the previous issue are shown as follows:

- a) new text is highlighted with yellow shading: **new**
- b) deleted text is shown with yellow shading and a strike through: ~~**deleted**~~

## Part 1 Installation Data

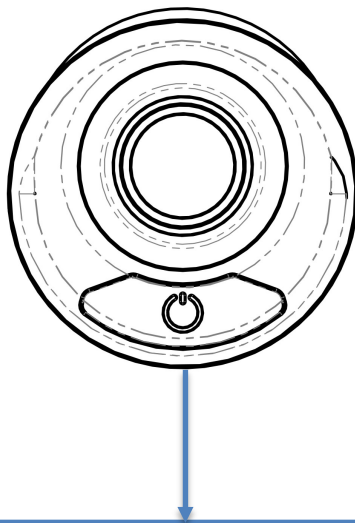
### 1.1 Product Info

EyeBeam MB Titania™ is interior swivel LED light. ~~It is available in 3 different versions—single color, dual color and four color.~~ All versions have black or natural anodized finish.

- |                                 |                       |
|---------------------------------|-----------------------|
| • EyeBeam MB Titania - Silver   | <b>AVE-EMBILW-TS0</b> |
| • EyeBeam MB Titania - Black    | <b>AVE-EMBILW-TB0</b> |
| • EyeBeam MB Titania NVIS white | <b>AVE-EMBILW-TB1</b> |

### 1.2 Operating Instructions

Operating Voltage range is 9-36VDC. When installed on the aircraft, using the aircraft's power (14 or 28 volts), the light will be at its maximum intensity.



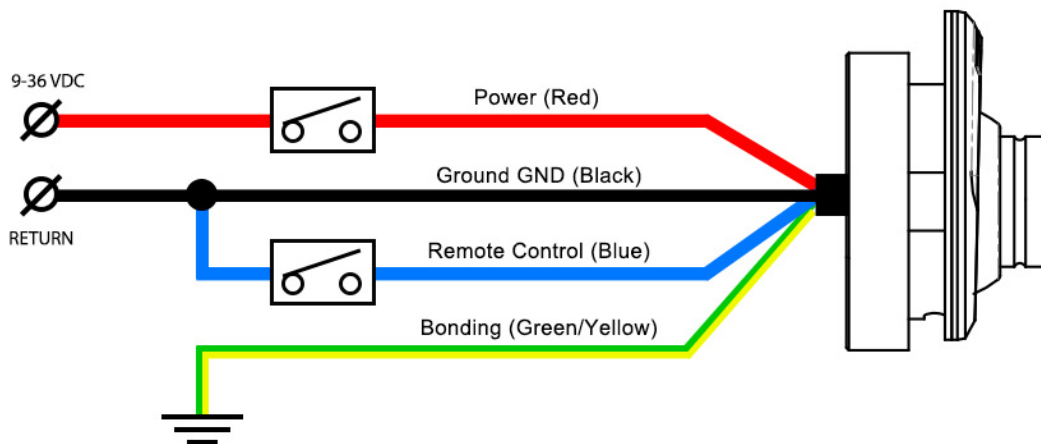
Every single **SHORT press** switching in sequence:

- 1. FULL Brightness**
- 2. DIM (60%)**
- 3. DIM (30%)**
- 4. OFF**

**LONG press** switches the light **OFF**

If the microswitch is STUCK the light will be switched OFF and after ~10 secs the button backlight starts blinking indicating a problem

### 1.3 Installation Schematic / Wiring Diagram



### 1.4 Control & Power Inputs

- BLACK** – Negative power supply line (ground) – AWG 22
- RED** – Positive power supply line – AWG 22
- BLUE** – Remote control – AWG 22
- Connecting to GND turns the DIM/WHITE LIGHT ON
- Disconnecting from GND turns the LIGHT OFF
- GREEN/YELLOW** – Bonding – AWG 22

**Wires length:** 270mm / 10.63 inches

### 1.5 Technical Specification

Electronic specification - Ambient temperature (25°C):

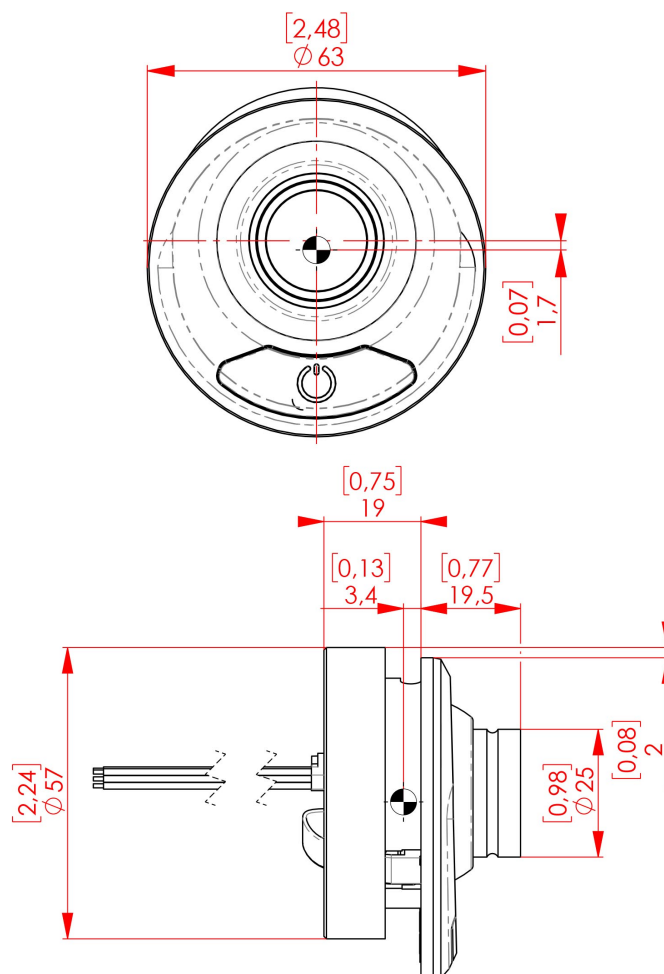
- Operating voltage range:** 9-36V DC
- Dimensions:** See section #1.6 – Technical Drawing
- Operating temperature:** -40°C to +85°C / -40°F to +185°F
- Weight (max):** 3.88 oz / 110 g

**Performance:**  
AVE-EMBILW-TB0 / AVE-EMBILW-TS0

#### INPUT CURRENT:

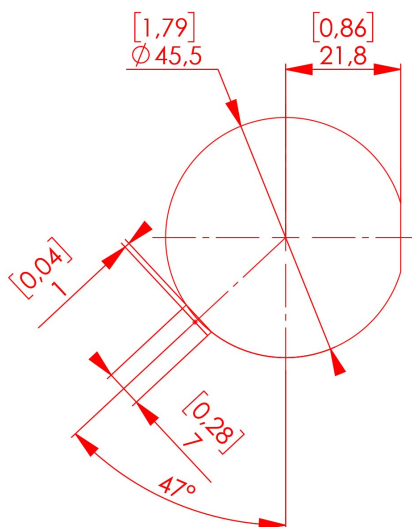
FULL 100%	122.8 mA @14V
	75.8 mA @28V
DIM 60%	75.7 mA @14V
	48.5 mA @28V
DIM 30%	40.4 mA @14V
	28.1 mA @28V

## 1.6 Technical Drawing



\*Dimensions in mm [inches]

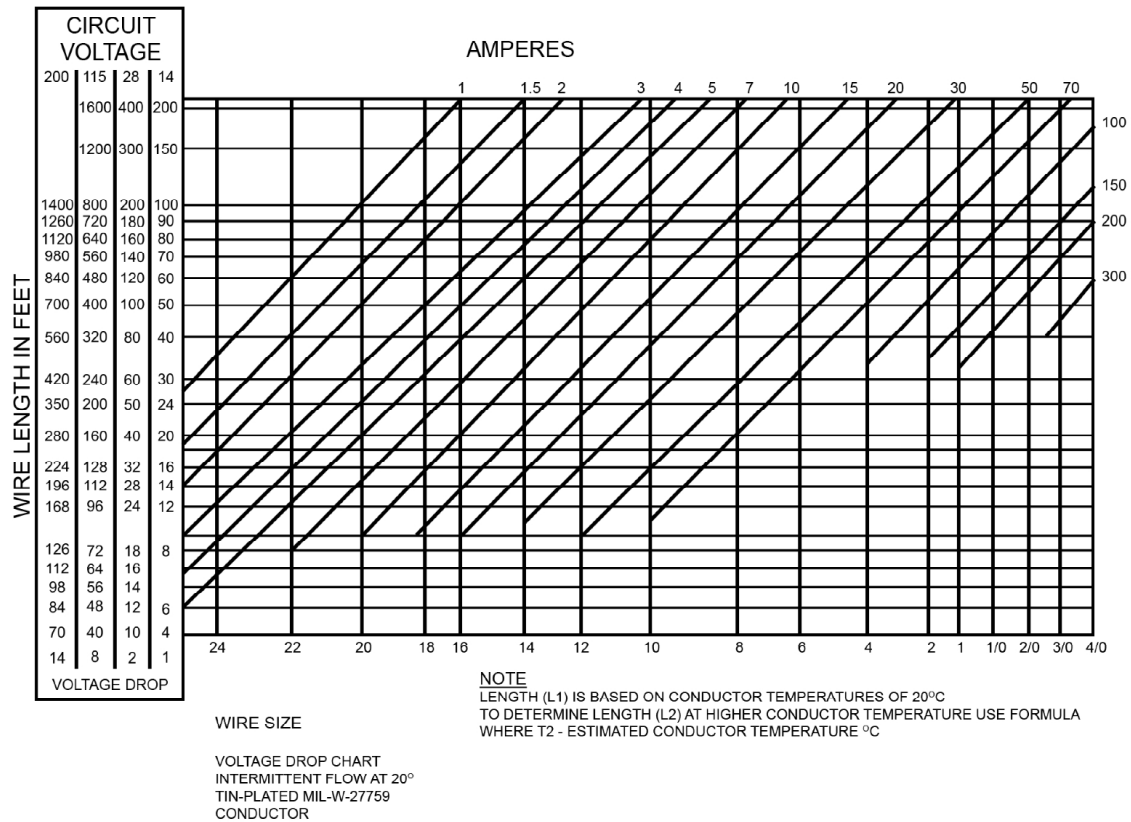
### MOUNTING HOLE



\*Dimensions in mm [inches]

## 1.7 Wiring Chart

Use diagram below defining the wiring size depending on the current and the wire length. Make sure you add up the current for all connected lights. If current is not given, then divide the power by the voltage.



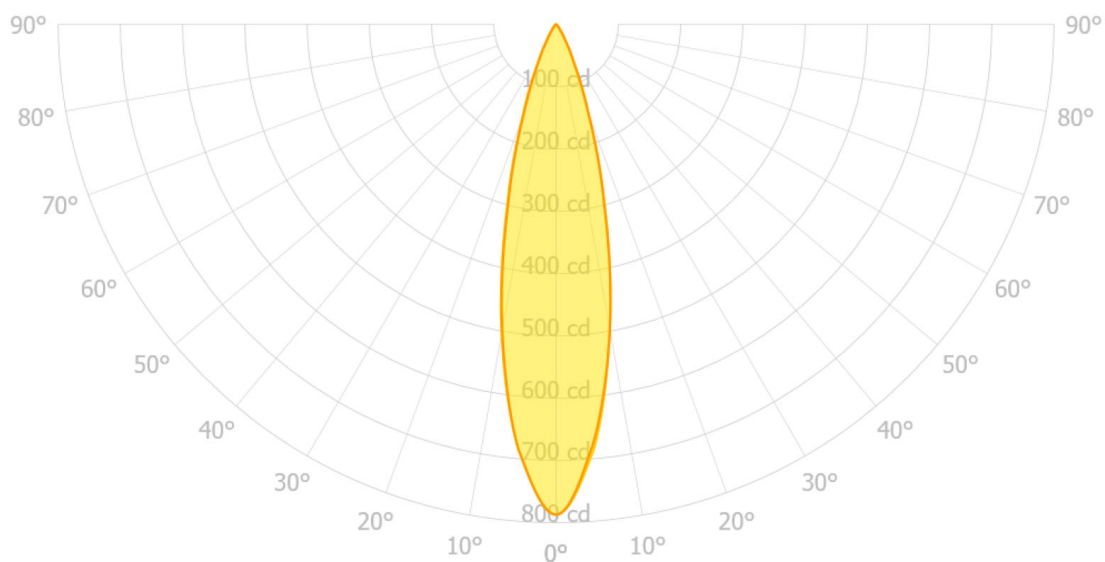
## **1.8 Optic Simulation**

**Standard lens**

**White LED**

**Intensity: 780 cd**

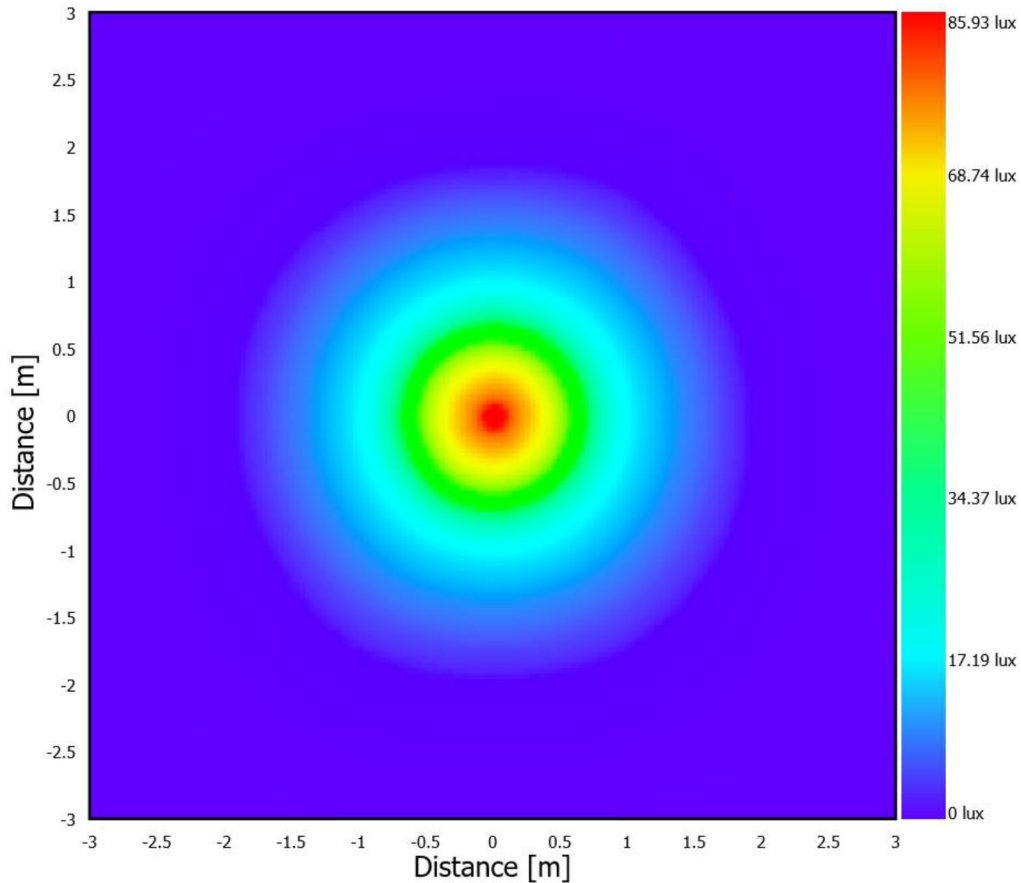
**Beam angle: 25°**



*Candela Polar Plot*



*Test Illuminance plane at 1m, plane dimensions 1x1m.*



*Test Illuminance plane at 3m.*

## **1.9 Equipment Limitation**

**EyeBeam MB Titania™** should only be powered by 9-36VDC.

## **1.10 Care and Cleaning of your Aveo Engineering Aviation Lights**

When you receive your Aveo Engineering Aviation Lights, they will have been factory polished and ready to install on the aircraft.

If the lights require a deeper cleaning, they should be polished with a quality lamb's wool sheet and can also be used for deeper polishing. Under no circumstances should any petroleum-based product be used to clean the lights.

## **1.11 Testing of the Light Before Installation**

All Aveo Aviation lights undergo rigorous testing prior to being released from our engineering manufacturing department. This testing involves a burn-in time as well as other function testing. No light is released for sale without undergoing this extensive operational testing.

When you receive the **EyeBeam MB Titania™** light, and wish to test the function of the light prior to installation on your aircraft, please note the following:

1. Please review the written information that is enclosed in the packaging. Warranty information as well as a cautionary note about power supply removal is enclosed with each package.
2. Remove the light from the package. Note that there are **four (4)** wires:
 

<b>Black (-)</b>	Negative lead
<b>Red (+)</b>	Positive lead
<b>Blue</b>	Remote control
<b>Green/Yellow</b>	Bonding
3. Testing of the function of the light can be done with a regular 14V or 28V/5A dc power supply (not a battery charger). Connect the black wire to the ground (negative) leads of a power supply, and then connect the red wire to the positive (+) leads on the power supply. The EyeBeam MB Titania light should start lighting. When installed on the aircraft, using the aircraft's power (14 or 28 volts), the light will be at its maximum intensity. After testing, the light can be installed on the aircraft.

### **IMPORTANT NOTES:**

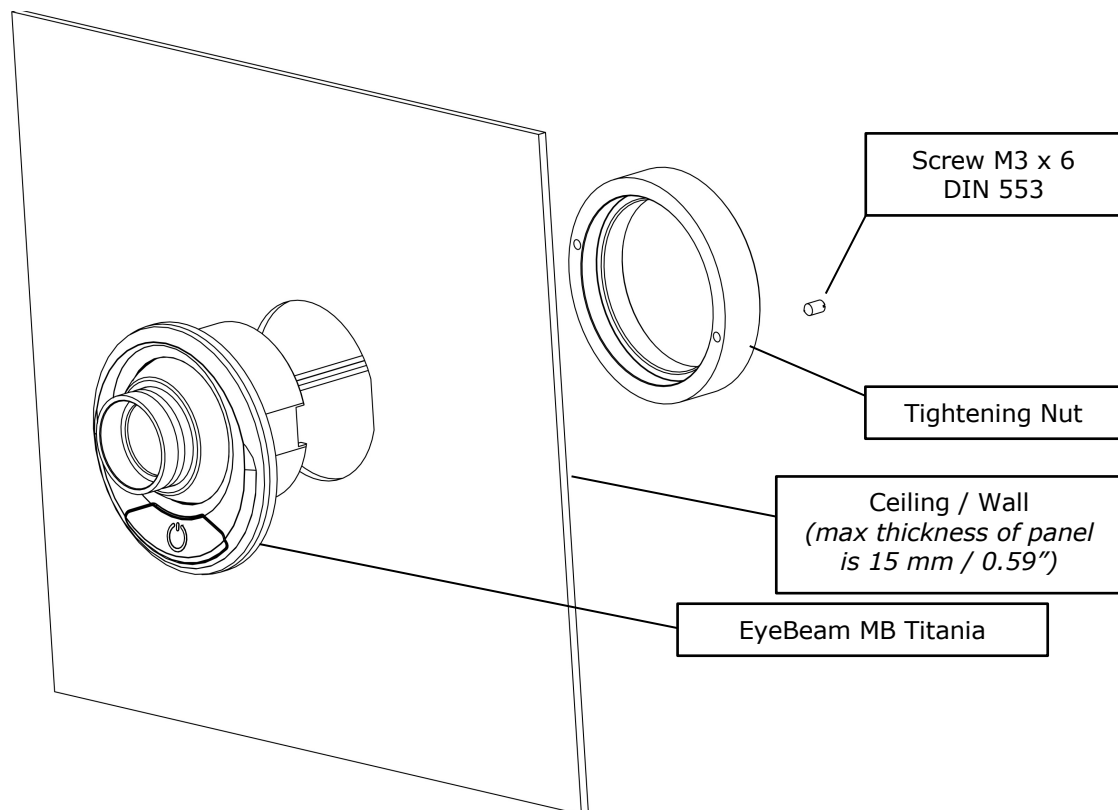
1. Under no circumstances should any power supply other than a 9-36 VDC, or a 14 or 28 volt battery be used to test the light. Do not use: Battery chargers, battery back-up power devices, or other bench avionics testing methods to test the aviation light. The light is functional between 9 and 36 volts. Use of a battery charger or other power unit to test the light will void the warranty and may damage the light.

If you have any questions about the installation of the lights, please refer to our web site: [www.aveoengineering.com](http://www.aveoengineering.com)

## **1.12 Notes on Installation**

Mount EyeBeam on the wall as it is described on the image below:

1. Insert the reading light through the ceiling partition.
2. Secure the light by tightening the nut.
3. After tightening, lock the nut using an M3×6 screw according to DIN 553.



## **1.13 Continues Airworthiness Information**

### ***Periodic Inspection Procedure for EyeBeam MB Titania series.***

The **EyeBeam MB Titania™** lights should always be checked for proper operation during preflight. This procedural information is already provided in all general aviation aircraft flight manuals.

The lights should be visually inspected for general condition, proper operation, and correct installation at each annual and/or 100 hours inspection. In addition, refer to section 1.10 of installation manual for detailed cleaning instructions.

## **1.14 RoHS Compliance Statement**

### **Scope**

This statement clarifies Aveo Engineering's compliance with European Union Directive 2015/863/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("RoHS") that took effect on June 4, 2015. The RoHS Directive restricts the sale of electronic equipment containing certain hazardous substances in the European Union including:

Cadmium(Cd): 0.01%

Mercury: 0.1%

Lead(Pb) : 0.1%

Hexavalent chromium (Cr6+) : 0.1%

Polybrominated biphenyls (PBB): 0.1 %;

Polybrominated diphenyl ethers (PBDE): 0.1 %

Bis(2-Ethylhexyl) phthalate (DEHP): 0.1% (added in 2015);

Benzyl butyl phthalate (BBP): 0.1% (added in 2015);

Dibutyl phthalate (DBP): 0.1% (added in 2015);

Diisobutyl phthalate (DIBP): 0.1% (added in 2015)

### **Compliance**

Aveo Engineering certifies that all products sourced from manufacturing facilities comply with the environmental standards set forth by the Directive 2015/863/EU, recast amendment of RoHS Directive 2011/65/EU Article (4), and do not contain any of the above-mentioned, 10 hazardous substances above the specified limits. All products manufactured by Aveo Engineering are RoHS-compliant. With regards to RoHS-2 CE marking, product packaging is labeled attesting conformity if required.

### **References**

Directive 2015/863/EU of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

## **1.15 EU REACH Regulation (EC) No. 1907/2006**

Aveo Engineering declares that no chemicals are produced and that none of the chemicals used during the production process or needed for the product maintenance or service, is listed on the current European Chemicals Agency's Candidate list of Substances of Very High Concern for Authorization.