

BIOFIDELIC CRASH TEST DUMMY PRODUCT DESCRIPTION **PRIMUS LIGHT BREAKABLE**



The properties of the biofidelic crash test dummy PRIMUS LIGHT, especially the comparability with the real human, result from the interaction of the materials used and the special construction method.

The construction method of the existing joints of the dummy together with the muscle replacement parts lead to realistic degrees of freedom of movement of the trunk and individual extremities. In the elbow and knee joints of the dummy there are corresponding equivalents to the ligaments.

The physical properties of the materials used correspond in the best possible way to the "components of real human". For example, the fracture strength of bone replacement material is similar to that of human bone. The strength of these tapes is also based on the human model. The inner structure of the biofidelic dummy is surrounded by components whose mechanical properties are as far as possible to human muscle tissue.

This refers in particular to the hysteresis properties under pressure loads. This is especially important, both for the generation of realistic damage to vehicles and for the reproducibility of human degrees of freedom of movement.

Due to the body density and mass distribution based on the human body, e.g. much more realistically than was previously possible with dummies made of steel and plastic was. Furthermore, real injuries can now be directly linked to the damage caused to the biofidelic crash test dummy PRIMUS LIGHT.

The biofidelic crash test dummy PRIMUS LIGHT breakable can be used in sitting as well as in standing position without the need for modification work. This is a unique selling point of the biofidelic crash test dummy. During use, the biofidel-dummy is like an unconscious person. Thus the biofidelic dummies are suitable for every conceivable use in suitable for a wide range of applications.

The PRIMUS LIGHT breakable can be used in different ways. After severe tests have been carried out damage must be examined. Due to the special choice of materials, the examination with X-rays is possible. This allows a quick and non-destructive check of the dummy.

In addition, the PRIMUS LIGHT breakable can be opened by trained personnel. In the course of the technical autopsy, all damage to the PRIMUS LIGHT breakable can be determined and documented.

Due to the in-house production of the biofidelic crash test dummies and their individual parts at our location in Münster/Westf., it is possible to produce individual dummies in addition to standardized biofidelic crash test dummies. Thus, body weight and body measurements can be produced within certain limits according to the client's specifications.

BIOFIDELIC CRASH TEST DUMMY DATA PRIMUS LIGHT BREAKABLE



Body height:	172 cm \pm 1 cm
Weight:	74,2 \pm 0,4 kg
Age:	18 – 65 years (according to the 50-percentile male adult)
BMI:	25,8 \pm 0,2 kg/m ²
Bone material:	Epoxy resin
Number of bones:	44
Soft tissue material:	Silicone / acrylic
Number of soft tissue:	46
Ligament and tendon replacement:	Polypropylene
Skin replacement:	Chloroprene rubber / latex
Joining techniques:	Screw connections / adhesive connections / clamp connections

BIOFIDELIC CRASH TEST DUMMY EXEMPLARY FIELDS OF APPLICATION **PRIMUS LIGHT BREAKABLE**



- Crash tests for the reconstruction of traffic accidents
- Pre-development crash tests for the automotive industry
- Tests for autonomous driving in non-standard seating positions
- Development and safety tests for the aircraft industry
- Life cycle and vibration tests (including earthquake protection rooms)
- Airbag tests Test of protective clothing (motorcycle clothing, horse riding, bicycle, fall protection)
- Blast or mine tests / bullet tests
- Accidents with mechanical technical equipment / crime scene reenactment (murder / suicide)
- Reproducible product tests with human bodies (e.g. mattresses)
- Rescue exercise for rescue services (fire brigade, mountain rescue)
- Water resistant: suitable for use under water when all openings are closed