

TEST REPORT

Report id.: ZEP-20211022-C1

EN60529

**Degrees of protection provided by
enclosures (IP code)**

IP65

Measurements for:

Zepcam Development
Hogeweg 29
5301 LB Zaltbommel
The Netherlands

Equipment under test:

Body Cam
Model: T2P
S/n: 2101-47941-41

Test engineer:

ing. F.J.A. Engelen

Verification by:

ing. F.L.T. de Kleuver

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Date of measurement: 28/01/2022

BICON Report ZEP-20211022-C1 IP65 bodycam v202202081.xlxb : FrontP

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Description

Introduction:

BICON Laboratories has been asked to investigate the conformity of the equipment under test (EUT) described in this report to the requirement of the applicable standards. Those applicable standards are listed on the first page of this report. This report describes the actual measurements and tests and gives the results obtained during the investigation.

At 28/01/2022 the last measurements on the Body Cam were performed at the electro physics lab of BICON Laboratories.

EUT Description:

Name: Body Cam
Type: T2P
s/n: 2101-47941-41
Description: The EUT is a body camera for capturing of motion pictures.

Principal:

Company name: Zepcam Development
Address: Hogeweg 29
Zip code: 5301 LB Zaltbommel
Country: The Netherlands
Representative: [Representative]

Results:

Based upon the results of the measurements and tests, BICON Laboratories finds the EUT, to be in conformance with the applicable harmonized standards listed on the first page of this report taking into account the possible provisions mentioned in 'Comments'.

Protection against access to hazardous parts IP6X

Equipment under test:

Body Cam
Model: T2P
S/n: 2101-47941-41

Test-type:

Protection against access to hazardous parts in accordance with
EN60529

Climatic conditions:

Ambient temperature	20 °C
Relative humidity	41 %
Atmospheric pressure	1039 hPa

Test conditions:

The access probe (test wire 1.0 mm diameter, 100 mm long) is pushed against or inserted through any openings of the enclosure with the force of 1 N (+/- 10%).

Test result:

No hazardous parts (live voltage and / or moving) inside the enclosure could be reached.

The EUT is found to be in compliance with the specified requirements.

PASS

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Protection against solid foreign objects IP5X

Equipment under test:

Body Cam
Model: T2P
S/n: 2101-47941-41

Test-type:

Protection against solid foreign objects in accordance with
EN60529

Climatic conditions:

Ambient temperature	20 °C
Relative humidity	41 %
Atmospheric pressure	1039 hPa

Test conditions:

The test is made using a dust chamber incorporating the basic principles shown in figure 2 of EN60529, whereby the powder circulation pump maintains the talcum powder in suspension in the closed test chamber. The talcum powder used, is able to pass through a square meshed sieve. The nominal wire diameter of which is 50 micrometer and the nominal width between wires 75 micrometer. The amount of talcum used is 2 kg per cubic meter of the test chamber volume. The EUT is supported in a normal operating position (horizontal) inside the test chamber and is not connected to a vacuum pump (20 mBar depression). The test duration is 8 hours (or until 80 volumes have been drawn).

Categorie:*

Category 1: Enclosures where the normal working cycle of the equipment causes reductions in air pressure within the enclosure below that of the surrounding air, for example, due to thermal cycling effects.

Test result:

Ingress of dust is completely prevented. Dust does not penetrate. The EUT is considered dusttight. Performance tests gave a positive result.

The EUT is found to be in compliance with the specified requirements (See 'Comments'). **PASS**

* The enclosure shall be deemed category 1 unless the relevant product standard for the equipment specifies that the enclosure is category 2.

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Protection against water IPX5

Equipment under test:

Body Cam
Model: T2P
S/n: 2101-47941-41

Test-type:

Protection against water in accordance with EN60529

Climatic conditions:

Ambient temperature	20 °C
Relative humidity	41 %
Atmospheric pressure	1039 hPa

Test conditions:

Test for second characteristic numeral 5 with the 6,3 mm nozzle. The test is made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle as shown in figure 6 of the EN60529. The conditions to be observed are as follows: internal diameter of the nozzle: 6,3 mm; delivery rate: 12,5 l/min $\pm$ 5 %; water pressure: to be adjusted to achieve the specified delivery rate; core of the substantial stream: circle of approximately 40 mm diameter at 2,5 m distance from nozzle; test duration per square metre of enclosure surface area likely to be sprayed: 1 min; minimum test duration: 3 min; distance from nozzle to enclosure surface: between 2,5 m and 3 m.

Test result:

Water does not penetrate in a quantity that interferes with satisfactory operation of the EUT or to impair safety. Performance tests gave a positive result. Customer performed a more indepth performance test ante conditioning. See 'Comments' for more information.

The EUT is found to be in compliance with the specified requirements (See 'Comments'). **PASS**

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Test setup:

The EUT was tested in an upright position. The EUT is tested as a category I product (IP6x). After the water and dust test, the EUT is powered up and a tested to establish the correct functioning of the EUT. Customer performed a more indepth performance test ante conditioning. See customer remarks below:

Dust:

Ingress of dust is completely prevented. Dust does not penetrate. The EUT is considered dusttight. Performance tests gave a positive result.

Water:

Water does not penetrate in a quantity that interferes with satisfactory operation of the EUT or to impair safety. Performance tests gave a positive result. Customer performed a more indepth performance test ante conditioning.

Customer indepth performance test ante conditioning:

Customer performed an indepth performance test since the sample was glued shut preventing opening op the EUT. The following statement with supporting pictures (see last 3 images on the 'Photo' pages.):

We received the T2+ camera device in good order after tests performed by Bicon.

Unit tested: T2+ Sno: T2P-2037-44941-41

As the unit is sealed, internal inspection is not possible.

However, functional tests can be done:

Button function: Normal

Record function: Normal

Connection to docking station and offloading movies: Normal

Picture & sound quality: Normal

No fogging of lens or internal condensation detected.

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Photos



Photo 1:
EUT Front



Photo 2:
EUT Back



Photo 3:
EUT Top

#VALUE!

Date of measurement: 19000100

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 2876



Photo 4:
EUT Bottem

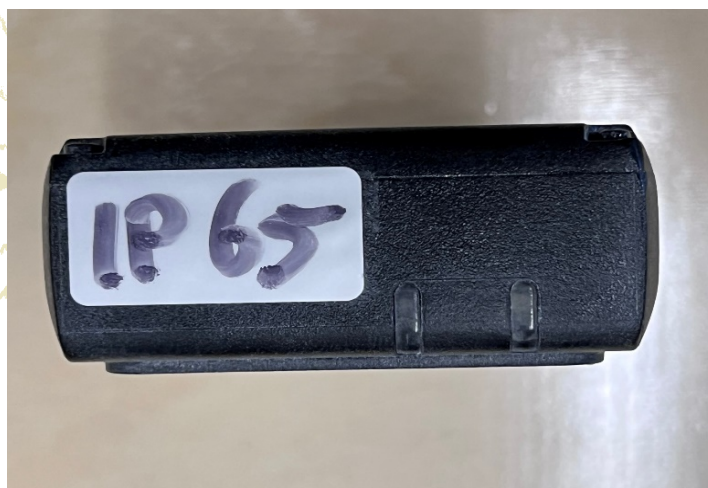


Photo 5:
EUT Side Left



Photo 6:
EUT Side Right



#VALUE!



Date of measurement: 19000100



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Photo 7:
IP6x



Photo 8:
IP6x

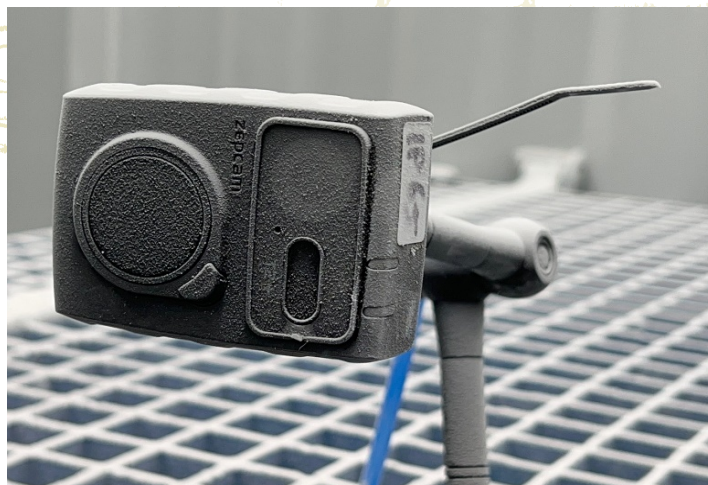


Photo 9:
IP6x



#VALUE!



Date of measurement: 19000100



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Photo 10:
IPx5



Photo 11:
IPx5



Photo 12:
IPx5



#VALUE!



Date of measurement: 19000100



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Photo 13:
IPx5



Photo 14:
IPx5

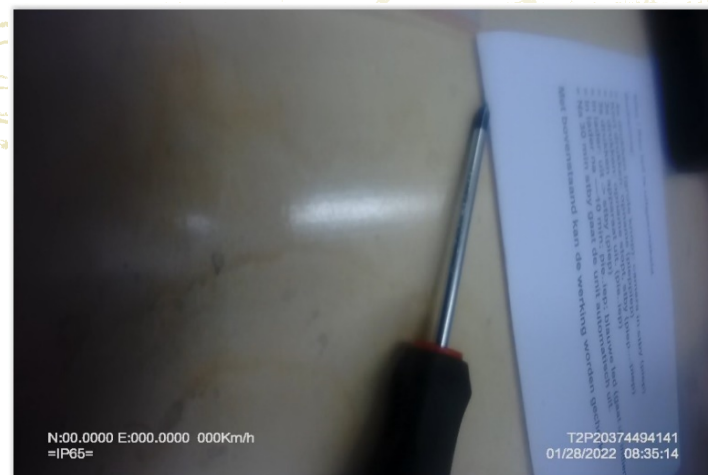


Photo 15:
Customer data - Still
picture taken from
camera after test at lab
(note protection film still
attached to lens area
causing reduced
sharpness)

#VALUE!

Date of measurement: 19000100

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 2876



Photo 16:
Customer data -
Outside shot frame
grab

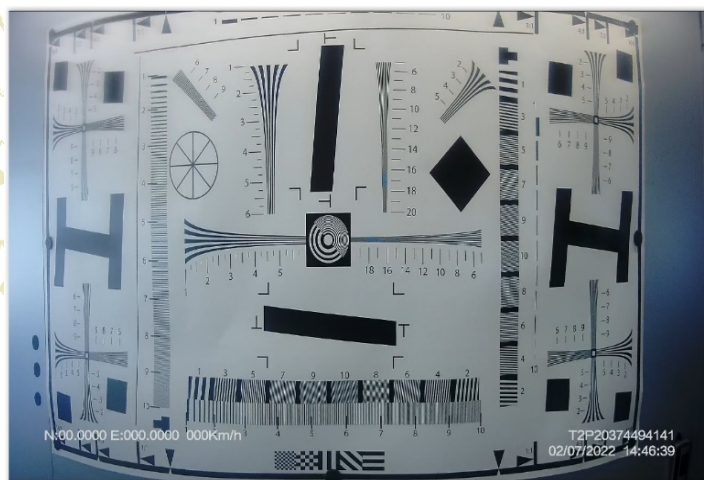


Photo 17:
Customer data - Test
card frame grab

#VALUE!

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