TÜVRheinland®

Prüfbericht-Nr.: *Test Report No.:*	**50106099 004**	**Auftrags-Nr.:** *Order No.:*	**170107655**	Seite 1 von 6 *Page 1 of 6*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	10.04.2019	

Auftraggeber: *Client:* **AQUAGEM ELECTRIC LIMITED**
Room 2217,2218, No.69 Xianlie Road Central, Guangzhou 510095, P.R.China

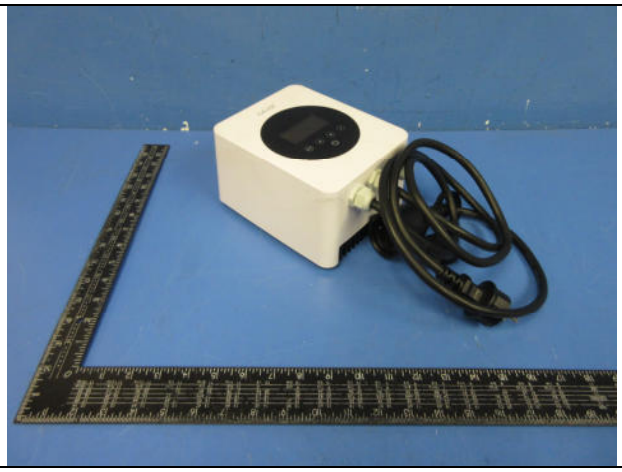
Prüfgegenstand: *Test item:* Water pump controller

Bezeichnung / Typ-Nr.: *Identification / Type No.:* iSAVER+1100, iSAVER+1500, iSAVER+2200

Auftrags-Inhalt: *Order content:* Noise test

Prüfgrundlage: *Test specification:* ISO 3744:2010

Wareneingangsdatum: *Date of receipt:*	09.04.2019
Prüfmuster-Nr.: *Test sample No.:*	A000903316-001
Prüfzeitraum: *Testing period:*	15.04.2019
Ort der Prüfung: *Place of testing:*	See page 2
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Guangdong) Ltd.
Prüfergebnis*: *Test result*:*	See Other



geprüft von / *tested by*:

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*
15.04.2019	Marco Yuan / Project manager	Marco Yuan

kontrolliert von / *reviewed by*:

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*
16.04.2019	Lily Cai / Reviewer	

Sonstiges / *Other*: Refer to report

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery:* Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

VD4

General remarks

This test report shall not be reproduced except in full without the written approval of the testing laboratory.

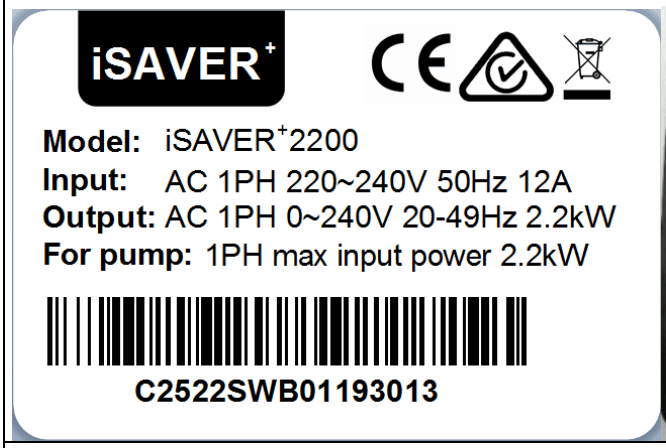
The test results presented in this report relate only to the item tested.

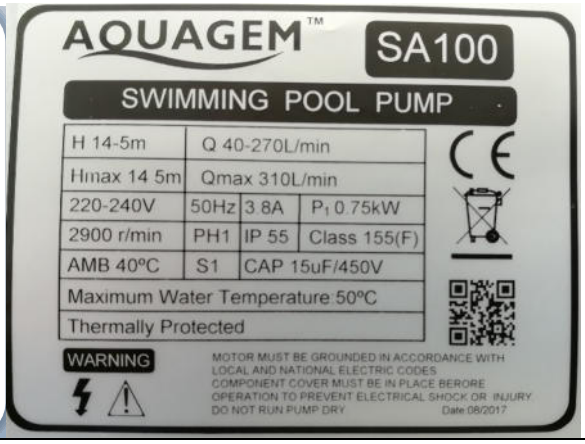
"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Copy of Nameplate - (according to the separate submitted document)





Test Standard

ISO 3744:2010, Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Engineering methods for an essentially free field over a reflecting plane

Summary of testing

-This report is update from report 50106099 002 with water pump controller additional models.

- Water pump controller models iSAVER+1100, iSAVER+1500, iSAVER+2200 are identical with model CPC-2150 in report 50106099 002 with same construciton, controlling program except appearance, name.

- Enclosed test content is adopted from report 50106099 002. For test details, please refer to report 50106099 002.

-Test place:
Vkan Certification & Testing Co., Ltd.
No.3 Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou, 510663,P.R.China

Test content adopted from report 50106099 002:

Unit Under Test (UUT)..... :	**Water pump**
Model / Type under test..... :	SA100
Rated Voltage and Frequency..... :	220-240V~, 50Hz, 750W
Unit Under Test (UUT)..... :	**Water pump controller**
Model / Type under test..... :	AQUAGEM CPC-2150
Test case does not apply to the test object.....:	N /A
Test item does meet the requirement .....:	P(ass)
Test item does not meet the requirement .....:	F(ail)
Testing	
Date of receipt of test item .....:	See cover page
Date(s) of performance of test .....:	See cover page
Test Condition	
Ambient temperature .....:	22.3°C
Relative humidity .....:	59.7%
Test Voltage and frequency .....:	AC230V 50Hz
Ambient air pressure.....:	101.37 kPa

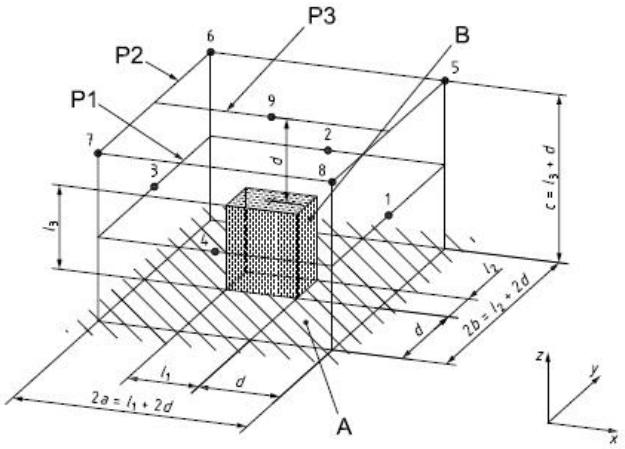
Test parameter

Criteria -Test

The product is installed according to the clause 6.4 of ISO3744:2010 under manufacturer's recommendation.

The product is pre-conditioned and operated according to clause 6.6 of ISO3744:2010 and operation status recommended by manufacturer.

The measurement surface is rectangular surface with nine microphone positions



The sound power level can be calculated from below formula:

$$L_W = \overline{L_p} + 10 \lg \frac{S}{S_0} \text{ dB}$$

Where

$\overline{L_p}$ is the surface time-averaged sound pressure level;

S is area, in meter square meters, of the measurement surface;

S_o is 1 m^2.

Result

Background noise level: 16.6 dB(A)

S: 17.378 m^2

S_0: 1 m^2

Operation status: - Water pump is connected to power supply without water pump controller. - Delivery height is set as 6m	Actual motor rotation speed (rpm)	2831
	Sound pressure level of each microphone (dB(A))	60.3
		59.4
		59.7
		60.1
		57.0
		56.6
		56.3
		60.9
		56.9
	Average sound pressure level $\overline{L_p}$ (dB(A))	58.9
	Sound power level Lw (dB(A))	**71.3**

Operation status: - Water pump is connected with water pump controller. - Motor rotation speed is set as 1700rpm - Delivery height is set as 2m	Actual motor rotation speed (rpm)	1702
	Sound pressure level of each microphone (dB(A))	47.6
		47.7
		47.2
		41.1
		42.1
		45.0
		41.7
		38.5
		45.4
	Average sound pressure level $\overline{L_p}$ (dB(A))	45.0
	Sound power level Lw (dB(A))	**57.4**

Operation status: - Water pump is connected with water pump controller. - Motor rotation speed is set as 1200rpm - Delivery height is set as 1m	Actual motor rotation speed (rpm)	1201
	Sound pressure level of each microphone (dB(A))	44.9
		43.8
		44.2
		35.3
		37.3
		41.8
		37.7
		32.9
		40.7
	Average sound pressure level $\overline{L_p}$ (dB(A))	41.4
	Sound power level Lw (dB(A))	**53.8**

Test equipment list:

Description	Type
Test chamber	5.2mx4.7mx4.6m
PULSE test system	3660C
Ruler	5m
Power meter	8705B

End of test report