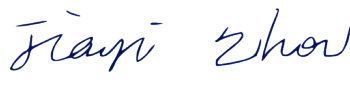


Prüfbericht-Nr.: Test Report No.:	50120792 006	Auftrags-Nr.: Order No.:	244238372	Seite 1 von 12 Page 1 of 12
Kunden-Referenz-Nr.: Client Reference No.:	2061587	Auftragsdatum: Order date.:	18.05.2020	
Auftraggeber: Client:	Bestway (Hong Kong) International Ltd. Suite 713, 7/Floor, East Wing, Tsim Sha Tsui Centre, 66 Mody Road, Kowloon, Hong Kong			
Prüfgegenstand: Test item:	Sand Filter			
Bezeichnung / Typ-Nr.: Identification / Type No.:	#58495	#58497		
Auftrags-Inhalt: Order content:	EMC test			
Prüfgrundlage: Test specification:	EN 55014-1:2017 EN 55014-2:2015 EN 61000-3-3:2013 EN IEC 61000-3-2:2019			
Wareneingangsdatum: Date of receipt:	27.05.2020			
Prüfmuster-Nr.: Test sample No.:	A002831494-001			
Prüfzeitraum: Testing period:	Refer to test report			
Ort der Prüfung: Place of testing:	EMC laboratory			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shanghai) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			



geprüft von / tested by:			kontrolliert von / reviewed by:		
					
10.06.2020	Liky Zhu/Senior project engineer		10.06.2020	Jiayi Zhou/Senior manager	
Datum	Name/Stellung	Unterschrift	Datum	Name/Stellung	Unterschrift
<i>Date</i>	<i>Name/Position</i>	<i>Signature</i>	<i>Date</i>	<i>Name/Position</i>	<i>Signature</i>

Sonstiges / Other:

This report is based on 50120792 001-005 and adds an alternative motor on the model #58497, which will affect the EMC performance. Compared with the reports, one of the standards above has been updated and one standard has been removed. With the consideration of the identities and differences list above, the harmonic currents and voltage fluctuations tests were performed on the model #58497 with the new motor.

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 specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable N/T = not tested	

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.
This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.

V04

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TEST SUMMARY

4.1.1 HARMONICS ON AC MAINS

*Result:**Passed*

4.1.2 VOLTAGE FLUCTUATIONS ON AC MAINS

*Result:**Passed*

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1 Test Sites

1.1 Test Facilities

Laboratory: TÜV Rheinland (Shanghai) Co., Ltd.**Address: No.177, 178, Lane 777 West Guangzhong Road, Jing'an District, Shanghai 200072, P. R. China**

The used test equipment is in accordance with CISPR 16-1 series standards for measurement of radio interference.

Refer to clause 6 for test and measurement instruments.

2 General Product Information

2.1 Product Function and Intended Use

The EUT (equipment under test) is an ordinary sand filter for household and similar use. For the further information, refer to the user's manual.

2.2 Ratings and System Details

System input voltage : AC 220-240 V
Frequency : 50 Hz
Rated input : 200 W (for both models)
Protection class : I

Identities and differences,

This report is based on 50120792 001-005 and adds an alternative motor on the model #58497, which will affect the EMC performance. Compared with the reports, one of the standards above has been updated and one standard has been removed. With the consideration of the identities and differences list above, the harmonic currents and voltage fluctuations tests were performed on the model #58497 with the new motor.

2.3 Independent Operation Modes

The basic operation modes are: "On" or "Off".
Refer to the circuit diagram for further information.

2.4 Noise Generating and Noise Suppressing Parts

Refer to the circuit diagram for further information.

2.5 Submitted Documents

Circuit diagram and rating label.

3 Test Set-up and Operation Modes

3.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible emission level. The test conditions were adapted accordingly in reference to the instructions for use.

Refer to the related paragraph of this report.

3.2 Physical Configuration for Testing

Refer to the related paragraph of this report.

3.3 Test Operation and Test Software

Refer to the related paragraph of this report. No software was used.

3.4 Special Accessories and Auxiliary Equipment

None.

3.5 Countermeasures to achieve EMC Compliance

No special measure is employed to achieve the requirement.

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4 Test Results EMISSION

4.1 Emission in the Frequency Range up to 30 MHz

4.1.1 Harmonics on AC Mains

Result:	Passed
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Date of testing : 03.06.2019

Test procedure : EN IEC 61000-3-2:2019

Test duration : 2.5 min

Harmonic order : 2 – 40th

Frequency range : 0 – 2 kHz

Ambient condition : Temperature: 24 °C; Relative humidity: 44 %

Following are the measurement results, which were obtained via an automatic measurement system.

Table 1: Harmonic currents measurement result

Equipment category: Class A; Test voltage: 229.666 V, 50 Hz

Fundamental current: 0.927 A; Power factor: 0.982; Active input power: 211.0 W.

Harmonic order	Result (avg.) (A)	100% limit (A)	Result (max.) (A)	150% limit (A)	Result
2	0.004	1.080	0.007	1.620	Pass
3	0.212	2.300	0.222	3.450	Pass
4	0.004	0.430	0.006	0.645	Pass
5	0.057	1.140	0.062	1.710	Pass
6	0.003	0.300	0.004	0.450	Pass
7	0.014	0.770	0.016	1.155	Pass
8	0.003	0.230	0.003	0.345	Pass
9	0.010	0.400	0.011	0.600	Pass
10	0.003	0.184	0.003	0.276	Pass
11	0.009	0.330	0.009	0.495	Pass
12	0.002	0.153	0.003	0.230	Pass
13	0.006	0.210	0.006	0.315	Pass
14	0.003	0.131	0.004	0.197	Pass
15	0.004	0.150	0.005	0.225	Pass
16	0.003	0.115	0.004	0.173	Pass
17	0.003	0.132	0.003	0.199	Pass
18	0.003	0.102	0.003	0.153	Pass
19	0.002	0.118	0.002	0.178	Pass
20	0.002	0.092	0.003	0.138	Pass
21	0.002	0.107	0.002	0.161	Pass
22	0.002	0.084	0.002	0.125	Pass
23	0.002	0.098	0.002	0.147	Pass
24	0.002	0.077	0.002	0.115	Pass
25	0.002	0.090	0.002	0.135	Pass
26	0.001	0.071	0.002	0.106	Pass
27	0.001	0.083	0.001	0.125	Pass
28	0.001	0.066	0.001	0.099	Pass
29	0.001	0.078	0.001	0.116	Pass
30	0.001	0.061	0.001	0.092	Pass
31	0.001	0.073	0.001	0.109	Pass
32	0.001	0.058	0.001	0.086	Pass
33	0.001	0.068	0.001	0.102	Pass
34	0.001	0.054	0.001	0.081	Pass
35	0.001	0.064	0.001	0.096	Pass
36	0.001	0.051	0.001	0.077	Pass
37	0.001	0.061	0.001	0.091	Pass
38	0.001	0.048	0.001	0.073	Pass
39	0.001	0.058	0.001	0.087	Pass
40	0.001	0.046	0.001	0.069	Pass

4.1.2 Voltage fluctuations on AC mains

Result:
Passed

Date of testing : 03.06.2020
 Test procedure : EN 61000-3-3:2013
 Ambient condition : Temperature: 20 °C; Relative humidity: 41 %

According to the characteristics of the sample, as specified by clause 5 of the basic standard, following limits apply:

- $T_{\max}$, the accumulated time value of $d(t)$ with a deviation exceeding 3.3 % during a single voltage change at the EUT terminals, shall not exceed 500 ms;
- the maximum relative steady-state voltage change d_c , shall not exceed 3.3 %;
- the maximum relative voltage change $d_{\max}$, shall not exceed 4 %.

Following are the measurement results obtained via an automatic testing system.

Table 2: Voltage fluctuations and flicker measurement results

	d_c	$d_{\max}$	$T_{\max}$	P_{st}	P_{lt}
Limits	3.3 %	4 %	500 ms	N/A	N/A
Result	0.00 %	0.60 %	0.0 ms	--	--

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5 Photographs of the Test Set-Up

Photograph 1: Set-up for measurement of harmonics and voltage fluctuation



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6 List of Test and Measurement Instruments

Equip.	Description	Model	Manufacturer	Last Date DD.MM.YYYY	Due Date DD.MM.YYYY
G1811421	3-phase harmonics/fluctuation tester	ProfLine 2145-400	Teseq	24.03.2020	24.03.2022
G1811420	45kVA AC power source	NSG 1007-45	Teseq	01.03.2019	01.03.2021
G1825639	Harmonics/flicker measurement software	Win2105 (V2.22)	Teseq	N/A	N/A

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End of test report