


	Date	24-Mar-2022	SPECIFICATION	OLE WOLFF
	Page	1 / 9		www.owolff.com
	DK	P/N: OWR-1228T-32B		Revision: 02



PRELIMINARY SPECIFICATION

Receiver

Part Number	OWR-1228T-32B
Note	This item is in compliance with the following requirements: 1. RoHS directive 2. REACH
Customer P/N	

Ole Wolff	Signature / Date	Prepared	Checked	Approved
		 2022.03.24		Ryan Li 2022.03.24

Customer	Signature / Date	Confirmation		

REVISION NOTES:

Date	Rev.	Description of Revision
2021.01.27	00	Initial Release
2021.03.26	01	Correct the thickness' information on Page 7.
2022.03.24	02	Added marking information on Page 8 and packing on Page 9.

OLE WOLFF ELEKTRONIK A/S Roedengvej 25 4180 Soroe Denmark TEL: +45 57833830 FAX: +45 57820019	OLE WOLFF ELECTRONICS INC. 1525 McCarthy Blvd, Suite 1093 Milpitas, Ca 95035 USA TEL : +1 408 888 8413	OLEWOLFF ELEKTRONIK GmbH Schulstrasse 15A. DE-25451 Quickborn. Germany TEL: +49 (0) 4106 765900 FAX: +49 (0) 4106 627297	OLEWOLFF ELECTRONICS 3 Bedford Street, Woburn, Bedfordshire MK17 9QB, ENGLAND TEL: +44 (0) 1525 290755 FAX: +44 (0) 1525 290855	OLE WOLFF ELEKTRONIK Yliopistonkatu 26 (P.O.BOX 257) FI-40101 Jyväskylä Finland TEL: +358 14 338 3050 FAX: +358 14 338 3059	OLE WOLFF (ASIA) LTD. Unit B, 19/F, Bold Win Ind. Bldg., No. 16-18 Wah Sing St., Kwai Chung, N.T., H.K. TEL: +852 2424 3274 FAX: +852 2424 2219	OLE WOLFF LTD. Unit 7A08, Block 2, Elite Building, Nanshan Avenue, Nanshan District, Shenzhen, PRC. TEL: +86 755 82612542 TEL: +86 755 26406156
---	--	--	---	--	---	---

	Date	24-Mar-2022	SPECIFICATION	OLE WOLFF
	Page	2 / 9		www.owolff.com
	DK	P/N: OWR-1228T-32B		Revision: 02

1. SCOPE

THIS SPECIFICATION IS APPLIED AS A RECEIVER UNIT FOR AN EARPHONE.

2. TEST CONDITIONS

TEMPERATURE : 24° ~ 27°C

HUMIDITY : 60° ~ 70°C (R.H.)

ATMOSPHERE : 860 ~ 1060 hPa

3. GENERAL REQUIREMENTS

OPERATING TEMPERATURE RANGE: -20° ~ 55°C

STORAGE TEMPERATUR RANGE: -25° ~ 60°C

4. MECANICAL LAYOUT & DIMENSIONS

DIMENSIONS : SHOWN IN FIGURE 4.

UNIT WEIGHT : 0.66g +/-0.1g

5. ELECTRICAL AND ACOUSTICAL CHARACTERISTICS

1.	IMPEDANCE on IEC 60318-4	32 Ω ± 15% (at 179mV 1KHz)
2.	SOUND PRESSURE LEVEL on IEC 60318-4	124 dB ± 3 dB at 179 mV/IEC711 Coupler @ 1KHz, Fig.2.
3.	SPL SORTING ON IEC 60318-4 coupler	Group A: 125.01~127dB marking = Red Group B: 123.00 ~ 125.00dB marking = Blue Group C: 121 ~ 122.99dB marking = Black
4.	RESONANCE FREQUENCY on IEC 60318-4	580Hz ± 15%
5	Frequency response on IEC 60318-4	Typical performance as shown in Fig.3. (Test input 0.179V/1mW)
6	Total Harmonic Distortion on IEC 60318-4	THD as shown in Fig.3 (Test input 0.179V/1mW)
7.	Sound Pressure Level in free field	82dB at 1000Hz with input 0.179V/1mW (0dB=20μPa)
8.	Resonance frequency in free field	200Hz with input 0.179V/1mW (for reference)
9.	Frequency response in free field	Typical performance as shown in Fig.4. (Test input 0.179V/1mW) (for reference)
10.	Total Harmonic Distortion in free field	THD as shown in Fig.4 (Test input 0.179V/1mW) (for reference)
11.	RATED INPUT POWER	(Nominal /Maximum): 3mW /5mW, 0.31V /0.4V
12.	BUZZ AND RATTLES	Must be normal with a Sine wave from 50Hz to10kHz. Rated input power 3mW/0.31V by hearing test. Receiver is in vertical position and at free air.

OLE WOLFF ELEKTRONIK A/S Roedengvej 25 4180 Soroe Denmark TEL: +45 57833830 FAX: +45 57820019	OLE WOLFF ELECTRONICS INC. 1525 McCarthy Blvd, Suite 1093 Milpitas, Ca 95035 USA TEL : +1 408 888 8413	OLEWOLFF ELEKTRONIK GmbH Schulstrasse 15A. DE-25451 Quickborn. Germany TEL: +49 (0) 4106 765900 FAX: +49 (0) 4106 627297	OLEWOLFF ELECTRONICS 3 Bedford Street, Woburn, Bedfordshire MK17 9QB, ENGLAND TEL: +44 (0) 1525 290755 FAX: +44 (0) 1525 290855	OLE WOLFF ELEKTRONIK Yliopistonkatu 26 (P.O.BOX 257) FI-40101 Jyväskylä Finland TEL: +358 14 338 3050 FAX: +358 14 338 3059	OLE WOLFF (ASIA) LTD. Unit B, 19/F, Bold Win Ind. Bldg., No. 16-18 Wah Sing St., Kwai Chung, N.T., H.K. TEL: +852 2424 3274 FAX: +852 2424 2219	OLE WOLFF LTD. Unit 7A08, Block 2, Elite Building, Nanshan Avenue, Nanshan District, Shenzhen, PRC. TEL: +86 755 82612542 TEL: +86 755 26406156
---	--	--	---	--	---	---

	Date	24-Mar-2022	SPECIFICATION	OLE WOLFF
	Page	3 / 9		www.owolff.com
	DK	P/N: OWR-1228T-32B		Revision: 02

6 QUALIFICATION TESTS

Sensitivity difference at 1000Hz shall be within $\pm 3\text{dB}$ from initial value after each test. The measurement shall be done after minimum 2 hours with conditioning of $24^\circ\text{C} \sim 27^\circ\text{C}$.

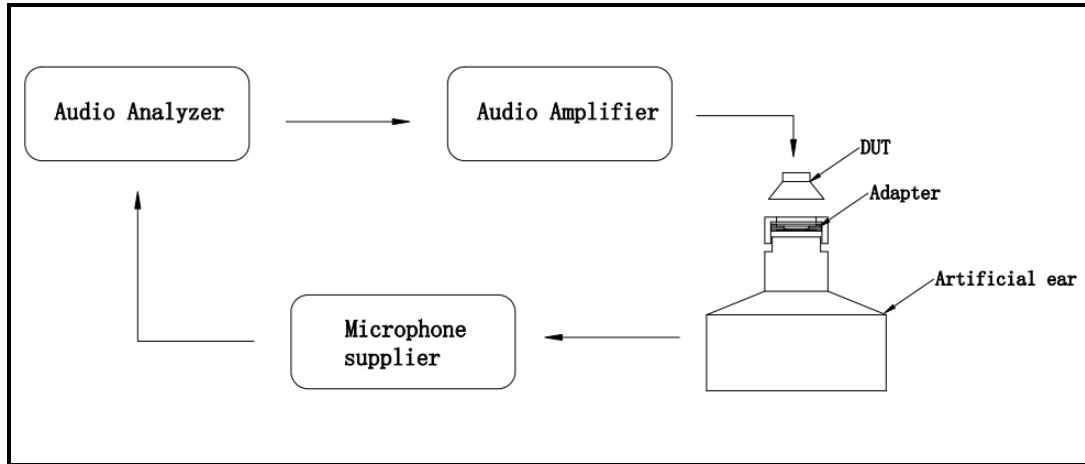
No.	ITEMS	TEST CONDITION	
1	HIGH TEMPERATURE TEST STORAGE	Temperature	$60 \pm 3^\circ\text{C}$
		Duration	96hrs
2	LOW TEMPERATURE TEST STORAGE	Temperature	$-25 \pm 3^\circ\text{C}$
		Duration	96hrs
3	HIGH TEMPERATURE HUMIDITY TEST	Temperature	$40 \pm 3^\circ\text{C}$
		Humidity	90% - 95%(RH)
		Duration	96hrs
4	DROP TEST	Height	With protector grill 0.75m to concrete
		Total times	10 times
5	TEMPERATURE CYCLE TEST	Temperature	$-25 \pm 3^\circ\text{C} \leftrightarrow 60 \pm 3^\circ\text{C}$
		Duration	2hours, 5mins, 2hours
		Cycles	5 cycles
6	SHORT TERM MAX INPUT TEST	Test signal and Temperature	Pink noise / 25°C
		Test input power	5mW
		Cycles	1sec On, 1min Off, 60cycles
7	LONG TERM MAX INPUT TEST	Test signal and Temperature	Pink noise / 25°C
		Test input power	5mW
		Cycles	1min On/ 2min Off, 10 cycles
8	RATED POWER TEST	Test signal and Temperature	Pink Noise / 25°C
		Test input power	3mW/0.31Vrms
		Duration	96hrs

OLE WOLFF ELEKTRONIK A/S Roedengvej 25 4180 Soroe Denmark TEL: +45 57833830 FAX: +45 57820019	OLE WOLFF ELECTRONICS INC. 1525 McCarthy Blvd, Suite 1093 Milpitas, Ca 95035 USA TEL: +1 408 888 8413	OLEWOLFF ELEKTRONIK GmbH Schulstrasse 15A. DE-25451 Quickborn. Germany TEL: +49 (0) 4106 765900 FAX: +49 (0) 4106 627297	OLEWOLFF ELEKTRONICS 3 Bedford Street, Woburn, Bedfordshire MK17 9QB, ENGLAND TEL: +44 (0) 1525 290755 FAX: +44 (0) 1525 290855	OLE WOLFF ELEKTRONIK Yliopistonkatu 26 (P.O.BOX 257) FI-40101 Jyväskylä Finland TEL: +358 14 338 3050 FAX: +358 14 338 3059	OLE WOLFF (ASIA) LTD. Unit B, 19/F, Bold Win Ind. Bldg., No. 16-18 Wah Sing St., Kwai Chung, N.T., H.K. TEL: +852 2424 3274 FAX: +852 2424 2219	OLE WOLFF LTD. Unit 7A08, Block 2, Elite Building, Nanshan Avenue, Nanshan District, Shenzhen, PRC. TEL: +86 755 82612542 TEL: +86 755 26406156
---	---	--	---	--	---	---

	Date	24-Mar-2022	SPECIFICATION	OLE WOLFF
	Page	4 / 9		www.owolff.com
	DK	P/N: OWR-1228T-32B		Revision: 02

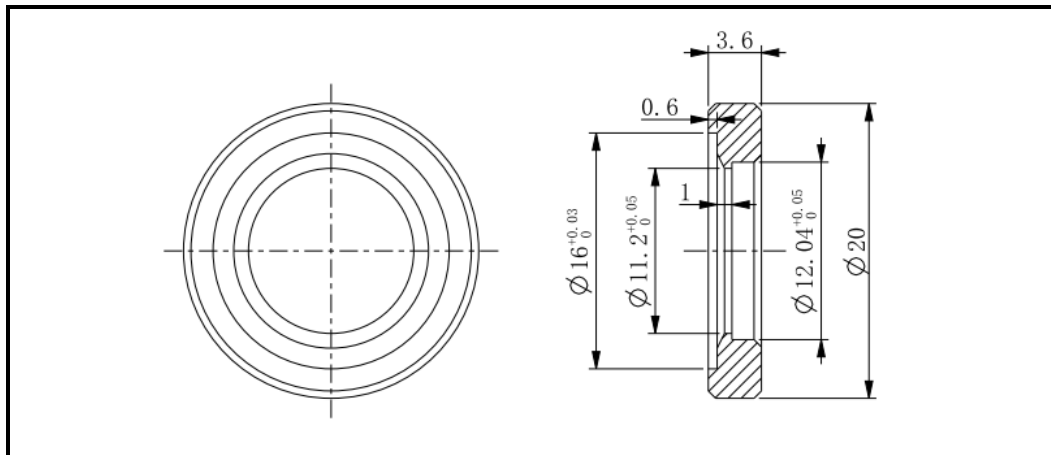
7 MEASUREMENT METHOD FOR DYNAMIC RECEIVER (FIG. 1)

7.1 MEASUREMENT CIRCUIT FOR DYNAMIC RECEIVER (Fig. 1)



NO	EQUIPMENT	REMARKS
1	DUT	Receiver
2	Adapter	As shown on Fig.2
3	Audio Analyzer	LISTEN SOUNDCHECK
4	Audio Amplifier	LEM DPA300
5	Artificial ear	GRAS 43AA
6	Microphone supplier	GRAS 12AX

7.2 IEC 711 TEST JIG (Fig. 2)



OLE WOLFF ELEKTRONIK A/S Roedengvej 25 4180 Soroe Denmark TEL: +45 57833830 FAX: +45 57820019	OLE WOLFF ELECTRONICS INC. 1525 McCarthy Blvd, Suite 1093 Milpitas, Ca 95035 USA TEL: +1 408 888 8413	OLEWOLFF ELEKTRONIK GmbH Schulstrasse 15A. DE-25451 Quickborn. Germany TEL: +49 (0) 4106 765900 FAX: +49 (0) 4106 627297	OLEWOLFF ELECTRONICS 3 Bedford Street, Woburn, Bedfordshire MK17 9QB, ENGLAND TEL: +44 (0) 1525 290755 FAX: +44 (0) 1525 290855	OLE WOLFF ELEKTRONIK Yliopistonkatu 26 (P.O.BOX 257) FI-40101 Jyväskylä Finland TEL: +358 14 338 3050 FAX: +358 14 338 3059	OLE WOLFF (ASIA) LTD. Unit B, 19/F, Bold Win Ind. Bldg., No. 16-18 Wah Sing St., Kwai Chung, N.T., H.K. TEL: +852 2424 3274 FAX: +852 2424 2219	OLE WOLFF LTD. Unit 7A08, Block 2, Elite Building, Nanshan Avenue, Nanshan District, Shenzhen, PRC. TEL: +86 755 82612542 TEL: +86 755 26406156
---	---	--	---	--	--	--

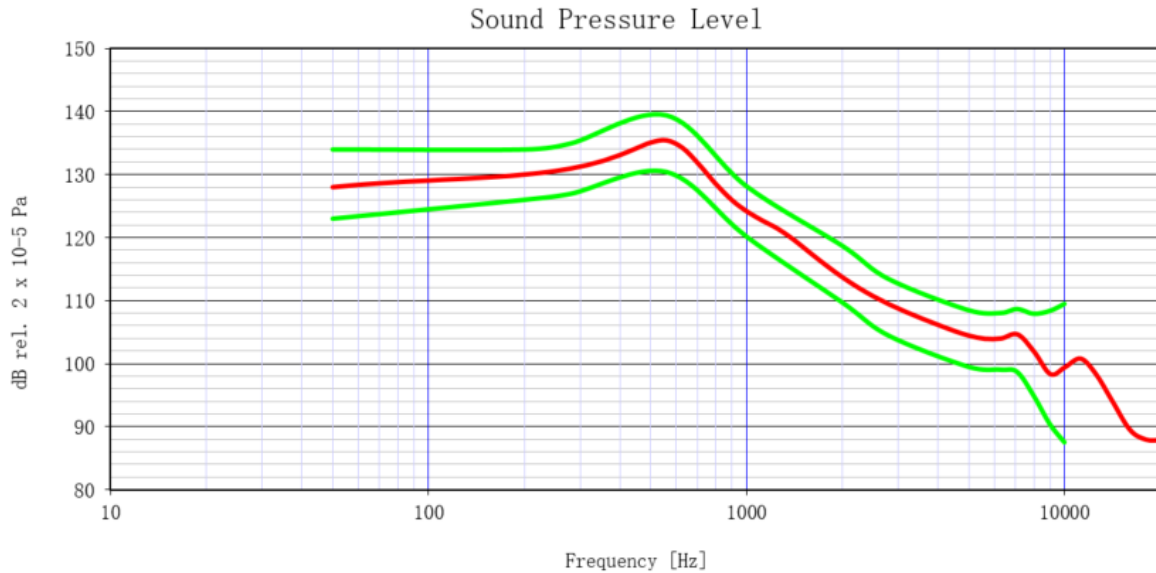
	Date	24-Mar-2022	SPECIFICATION	OLE WOLFF
	Page	5 / 9		www.owolff.com
	DK	P/N: OWR-1228T-32B		Revision: 02

FREQUENCY RESPONSE & THD CURVES (FIG. 3)

Test input 0.179V on IEC 60318-4 coupler, 1/6oct.

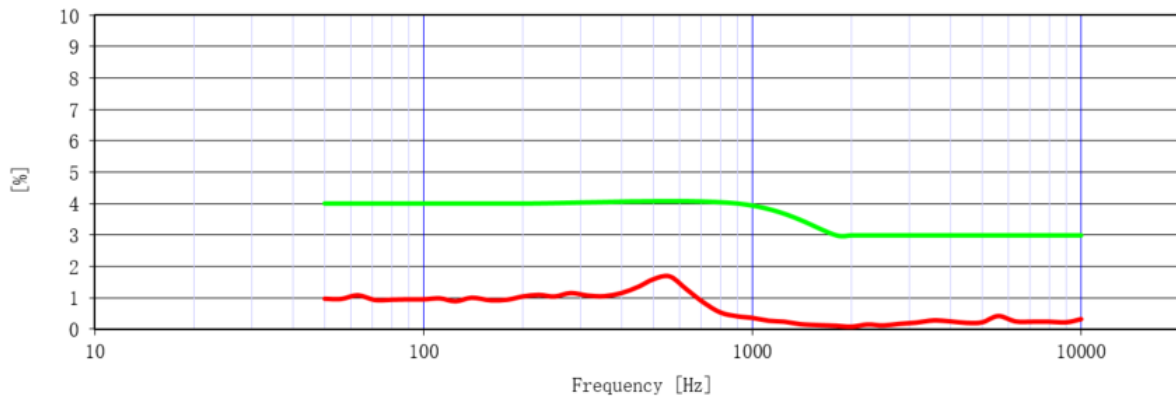
Soundcheck stimulus step size 8 min cycles and 5ms min duration.

The following tolerances are offset values. Limit is absolute value based on the golden sample offset.



Frequency (Hz)	50	200	280	560	1000	2000	2800	5000	6300	7100	8000	9000	10000	Hz
Upper limit	+6	+4	+4	+4	+4	+5	+4	+4	+4	+4	+6	+10	+10	dB
Lower limit	-5	-4	-4	-5	-4	-4	-5	-5	-5	-6	-7	-8	-12	dB

Total Harmonic Distortion (THD)



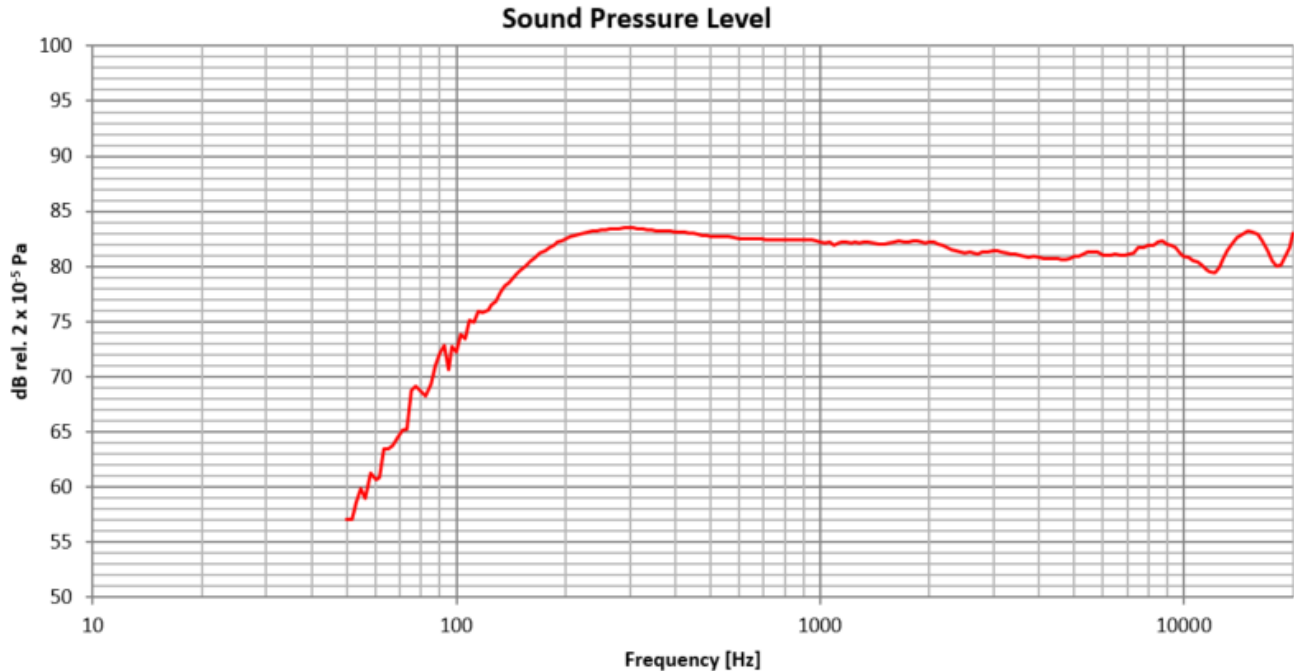
Frequency (Hz)	50	900	1800	4000	10000	Hz
THD	4	4	3	3	3	%

OLE WOLFF ELEKTRONIK A/S Roedengvej 25 4180 Soroe Denmark TEL: +45 57833830 FAX: +45 57820019	OLE WOLFF ELECTRONICS INC. 1525 McCarthy Blvd, Suite 1093 Milpitas, Ca 95035 USA TEL : +1 408 888 8413	OLEWOLFF ELEKTRONIK GmbH Schulstrasse 15A. DE-25451 Quickborn. Germany TEL: +49 (0) 4106 765900 FAX: +49 (0) 4106 627297	OLEWOLFF ELECTRONICS 3 Bedford Street, Woburn, Bedfordshire MK17 9QB, ENGLAND TEL: +44 (0) 1525 290755 FAX: +44 (0) 1525 290855	OLE WOLFF ELEKTRONIK Yliopistonkatu 26 (P.O.BOX 257) FI-40101 Jyväskylä Finland TEL: +358 14 338 3050 FAX: +358 14 338 3059	OLE WOLFF (ASIA) LTD. Unit B, 19/F, Bold Win Ind. Bldg., No. 16-18 Wah Sing St., Kwai Chung, N.T., H.K. TEL: +852 2424 3274 FAX: +852 2424 2219	OLE WOLFF LTD. Unit 7A08, Block 2, Elite Building, Nanshan Avenue, Nanshan District, Shenzhen, PRC. TEL: +86 755 82612542 TEL: +86 755 26406156
---	--	--	---	--	---	---

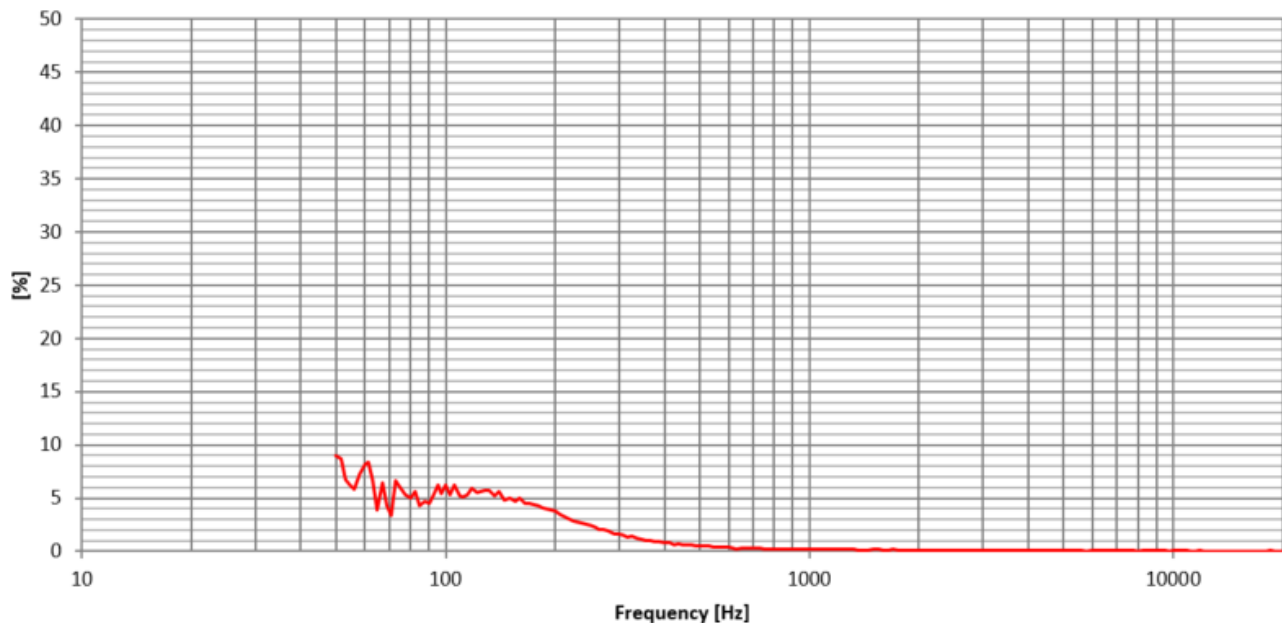
	Date	24-Mar-2022	SPECIFICATION	OLE WOLFF
	Page	6 / 9		www.owolff.com
	DK	P/N: OWR-1228T-32B		Revision: 02

FREE FIELD TEST (Fig.4)

Test input 0.179V, 10mm 1/6oct in free filed.



Total Harmonic Distortion (THD)

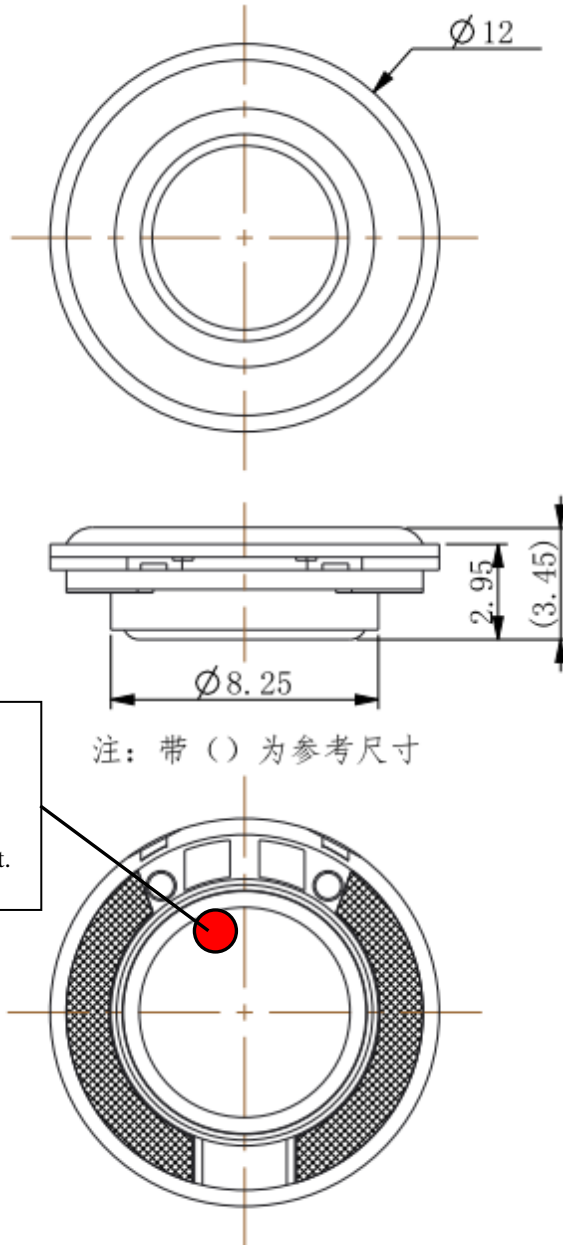


OLE WOLFF ELEKTRONIK A/S Roedengvej 25 4180 Soroe Denmark TEL: +45 57833830 FAX: +45 57820019	OLE WOLFF ELECTRONICS INC. 1525 McCarthy Blvd, Suite 1093 Milpitas, Ca 95035 USA TEL : +1 408 888 8413	OLEWOLFF ELEKTRONIK GmbH Schulstrasse 15A. DE-25451 Quickborn. Germany TEL: +49 (0) 4106 765900 FAX: +49 (0) 4106 627297	OLEWOLFF ELECTRONICS 3 Bedford Street, Woburn, Bedfordshire MK17 9QB, ENGLAND TEL: +44 (0) 1525 290755 FAX: +44 (0) 1525 290855	OLE WOLFF ELEKTRONIK Yliopistonkatu 26 (P.O.BOX 257) FI-40101 Jyväskylä Finland TEL: +358 14 338 3050 FAX: +358 14 338 3059	OLE WOLFF (ASIA) LTD. Unit B, 19/F, Bold Win Ind. Bldg., No. 16-18 Wah Sing St., Kwai Chung, N.T., H.K. TEL: +852 2424 3274 FAX: +852 2424 2219	OLE WOLFF LTD. Unit 7A08, Block 2, Elite Building, Nanshan Avenue, Nanshan District, Shenzhen, PRC. TEL: +86 755 82612542 TEL: +86 755 26406156
---	--	--	---	--	---	---

	Date	24-Mar-2022	SPECIFICATION	OLE WOLFF
	Page	7 / 9		www.owolff.com
	DK	P/N: OWR-1228T-32B		Revision: 02

8. DIMENSIONS (Unit: mm. Tolerance: +/-0.3)

Fig 5: Receiver assembly



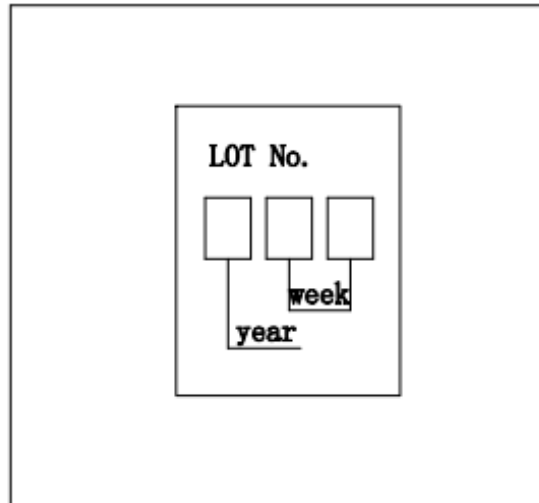
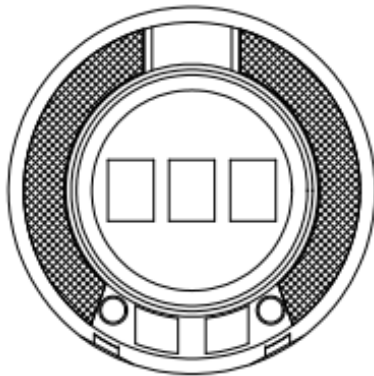
Polarity and binning

Marking: Bin A = Red dot,
Bin B = Blue dot,
Bin C = Black dot.

OLE WOLFF ELEKTRONIK A/S Roedengvej 25 4180 Soroe Denmark TEL: +45 57833830 FAX: +45 57820019	OLE WOLFF ELECTRONICS INC. 1525 McCarthy Blvd, Suite 1093 Milpitas, Ca 95035 USA TEL: +1 408 888 8413	OLEWOLFF ELEKTRONIK GmbH Schulstrasse 15A. DE-25451 Quickborn. Germany TEL: +49 (0) 4106 765900 FAX: +49 (0) 4106 627297	OLEWOLFF ELECTRONICS 3 Bedford Street, Woburn, Bedfordshire MK17 9QB, ENGLAND TEL: +44 (0) 1525 290755 FAX: +44 (0) 1525 290855	OLE WOLFF ELEKTRONIK Yliopistonkatu 26 (P.O.BOX 257) FI-40101 Jyväskylä Finland TEL: +358 14 338 3050 FAX: +358 14 338 3059	OLE WOLFF (ASIA) LTD. Unit B, 19/F, Bold Win Ind. Bldg., No. 16-18 Wah Sing St., Kwai Chung, N.T., H.K. TEL: +852 2424 3274 FAX: +852 2424 2219	OLE WOLFF LTD. Unit 7A08, Block 2, Elite Building, Nanshan Avenue, Nanshan District, Shenzhen, PRC. TEL: +86 755 82612542 TEL: +86 755 26406156
---	---	--	---	--	---	---

	Date	24-Mar-2022	SPECIFICATION	OLE WOLFF
	Page	8 / 9		www.owolff.com
	DK	P/N: OWR-1228T-32B		Revision: 02

9. Marking

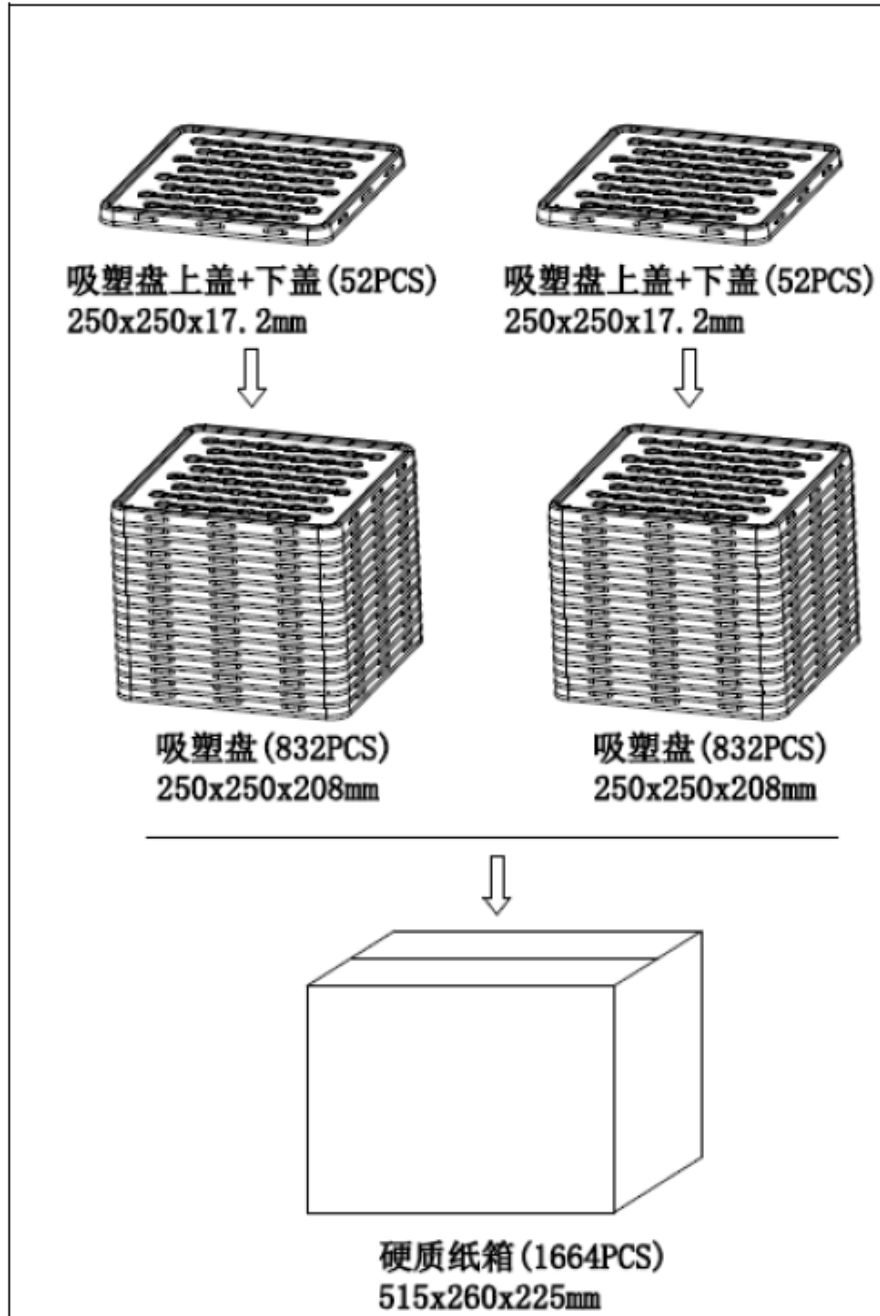


YEAR		WEEK	
year	marking	week	marking
2020	0	1	01
2021	1	2	02
2022	2	3	03
2023	3	↓	↓
		52	52

OLE WOLFF ELEKTRONIK A/S Roedengvej 25 4180 Soroe Denmark TEL: +45 57833830 FAX: +45 57820019	OLE WOLFF ELECTRONICS INC. 1525 McCarthy Blvd, Suite 1093 Milpitas, Ca 95035 USA TEL : +1 408 888 8413	OLEWOLFF ELEKTRONIK GmbH Schulstrasse 15A. DE-25451 Quickborn. Germany TEL: +49 (0) 4106 765900 FAX: +49 (0) 4106 627297	OLEWOLFF ELECTRONICS 3 Bedford Street, Woburn, Bedfordshire MK17 9QB, ENGLAND TEL: +44 (0) 1525 290755 FAX: +44 (0) 1525 290855	OLE WOLFF ELEKTRONIK Yliopistonkatu 26 (P.O.BOX 257) FI-40101 Jyväskylä Finland TEL: +358 14 338 3050 FAX: +358 14 338 3059	OLE WOLFF (ASIA) LTD. Unit B, 19/F., Bold Win Ind. Bldg., No. 16-18 Wah Sing St., Kwai Chung, N.T., H.K. TEL: +852 2424 3274 FAX: +852 2424 2219	OLE WOLFF LTD. Unit 7A08, Block 2, Elite Building, Nanshan Avenue, Nanshan District, Shenzhen, PRC. TEL: +86 755 82612542 TEL: +86 755 26406156
---	--	--	---	--	--	---

	Date	24-Mar-2022	SPECIFICATION	OLE WOLFF
	Page	9 / 9		www.owolff.com
	DK	P/N: OWR-1228T-32B		Revision: 02

10. Packaging



OLE WOLFF ELEKTRONIK A/S Roedengvej 25 4180 Soroe Denmark TEL: +45 57833830 FAX: +45 57820019	OLE WOLFF ELECTRONICS INC. 1525 McCarthy Blvd, Suite 1093 Milpitas, Ca 95035 USA TEL: +1 408 888 8413	OLEWOLFF ELEKTRONIK GmbH Schulstrasse 15A. DE-25451 Quickborn, Germany TEL: +49 (0) 4106 765900 FAX: +49 (0) 4106 627297	OLEWOLFF ELECTRONICS 3 Bedford Street, Woburn, Bedfordshire MK17 9QB, ENGLAND TEL: +44 (0) 1525 290755 FAX: +44 (0) 1525 290855	OLE WOLFF ELEKTRONIK Yliopistonkatu 26 (P.O.BOX 257) FI-40101 Jyväskylä Finland TEL: +358 14 338 3050 FAX: +358 14 338 3059	OLE WOLFF (ASIA) LTD. Unit B, 19/F, Bold Win Ind. Bldg., No. 16-18 Wah Sing St., Kwai Chung, N.T., H.K. TEL: +852 2424 3274 FAX: +852 2424 2219	OLE WOLFF LTD. Unit 7A08, Block 2, Elite Building, Nanshan Avenue, Nanshan District, Shenzhen, PRC. TEL: +86 755 82612542 TEL: +86 755 26406156
---	---	--	---	--	---	---