



PN: DR0029150NM6NFR

DWG #:DB16-030 Rev0.9

# SPECIFICATION

PRODUCT: Dynamic Receiver

STETRON PART NUMBER: DR0029150NM6NFR

DESCRIPTION: 29.7 x 8.4 mm/150ohms/RoHS/Transparent diaphragm

RFQ: QB14172DR-V3

STETRON APPROVALS	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE	<i>RS</i>	<i>CS</i>	
DATE	3-Mar-22	3-Mar-2022	

CUSTOMER APPROVAL	SIGNATURE	DATE

STETRON

90 Broadway, Buffalo, NY USA 14203-1687

2651 John Street, Unit 4, Markham Ontario, L3R 2W5

Phone (USA): + (716) 854-3443

Fax: + (716) 854-3448

Email: [contact@stetron.com](mailto:contact@stetron.com)

Phone (Canada): + (905) 475-6202

Fax: + (905) 475-1926

Website: [www.stetron.com](http://www.stetron.com)

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**REVISION HISTORY**

Rev Level	Date	Description	Page #	Changed By
0.0	4-Apr-2017	Original	All Pages	RS
0.1	10-Jan-2018	Updated HAC	Pg. 3	RS
0.2	13-Jan-2020	Added views without front mesh	Pg. 7	RS
0.3	12-June-2020	Updated SPL definition	Pg. 1	RS
0.4	6-July-2020	Updated frequency response	Pg. 4	RS
0.5	11-Aug-2020	Updated Impedance definition	Pg. 1	RS
0.6	15-Sept-2020	Added Frequency Response Mask	Pg 4	RS
0.7	29-Oct-2020	Added note to FR test condition	Pg. 4	RS
0.8	02-Mar-2022	Added alternative SPL and THD for customer's IQC test	Pgs. 1 and 2	RS
0.9	03-Mar-2022	Update limit table for frequency response	Pg. 5	RS

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### Contents

1. Scope.....	1
2. Environmental Requirements.....	1
3. Environmental Test .....	1
4. Electro - Acoustic Requirements .....	1
5. Response Curves and Test Setup .....	3
6. Reliability .....	6
7. Mechanical Layout and Dimensions .....	8



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**1. Scope**

This document contains the required electrical, acoustic, mechanical and reliability information for a Dynamic Receiver.

**2. Environmental Requirements**

This product including all components, solder joints and glue must be RoHS compliant and meet the customer’s known requirements for banned or restricted substances.

**3. Environmental Test**

	Standard Conditions	Preferred Conditions
Temperature	15 to 35°C	20°C
Humidity	25 to 75%	50%
Air Pressure	86 to 106 KPa	86 to 106 KPa

\*Note: Above test conditions for electro-acoustic parameters

**4. Electro - Acoustic Requirements**

**4.1 Sound Pressure Level**

104 +2/-3dB SPL @ 1 kHz with input of 866mVrms on IEC 711 type 3.2 High Leak coupler @DRP.

**Alternative SPL for Customer’s IQC**

101 +2/-3dB SPL @ 1 kHz with input of 613mVrms on IEC 711 type 3.2 High Leak coupler @DRP.

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<b>4.2 Impedance</b>	150Ω ± 15% @ 1 kHz/1 Vrms
<b>4.3 Rated Power</b>	10mW (RMS)
<b>4.4 Max Power</b>	30mW (RMS)
<b>4.5 Total Harmonic Distortion (THD)</b>	Per THD limits in fig. 4 tested from 170 Hz to 8 kHz with 866mVrms on IEC 711 type 3.2 High Leak coupler.
<b>Alternative THD for Customer's IQC</b>	Per THD limits in fig. 4 tested from 170 Hz to 8 kHz with 613mVrms on IEC 711 type 3.2 High Leak coupler.
<b>4.6 Magnetic Field Intensity</b>	
Axial direction	≥-25dB (0dB=1A/M @ 60mVrms).
Radial Direction	≥-34dB (0dB=1A/M @ 60mVrms).
<b>4.7 Buzz and Rattle</b>	No audible buzz or rattle should occur when a sine wave of 1Vrms from 300 Hz to 5 kHz is applied to the receiver for a period of 1 sec.
<b>4.8 Polarity</b>	Top of the magnet is North pole

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## 5. Response Curves and Test Setup

### 5.1 Test Setup

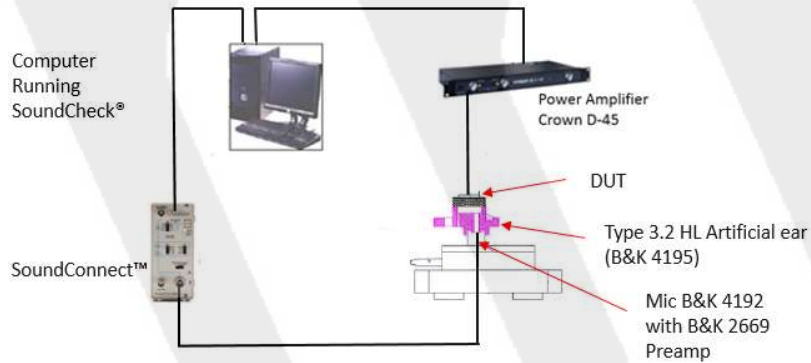


Fig 1. Showing Typical Test Setup

### 5.2 HAC

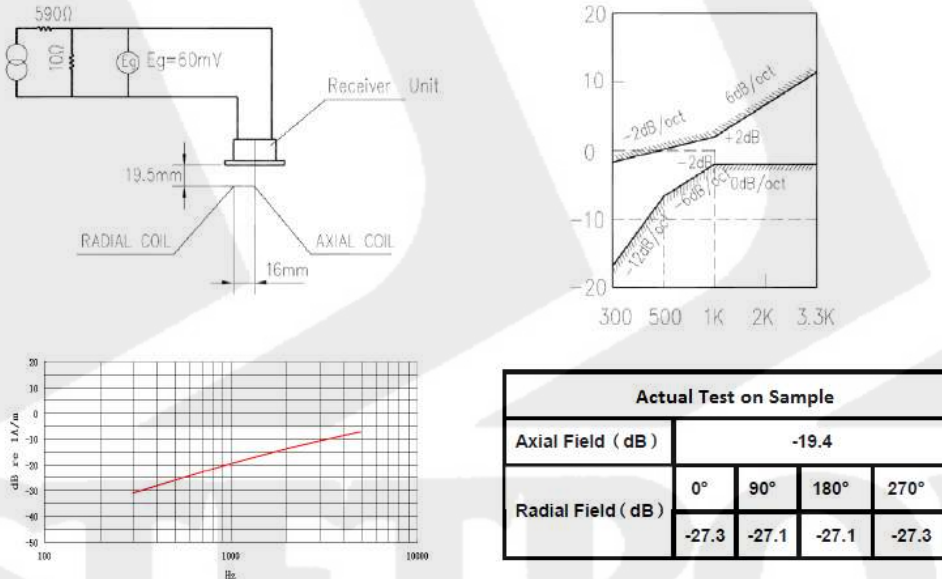


Fig 2. HAC measuring circuit

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5.3 Typical Frequency Response Curve

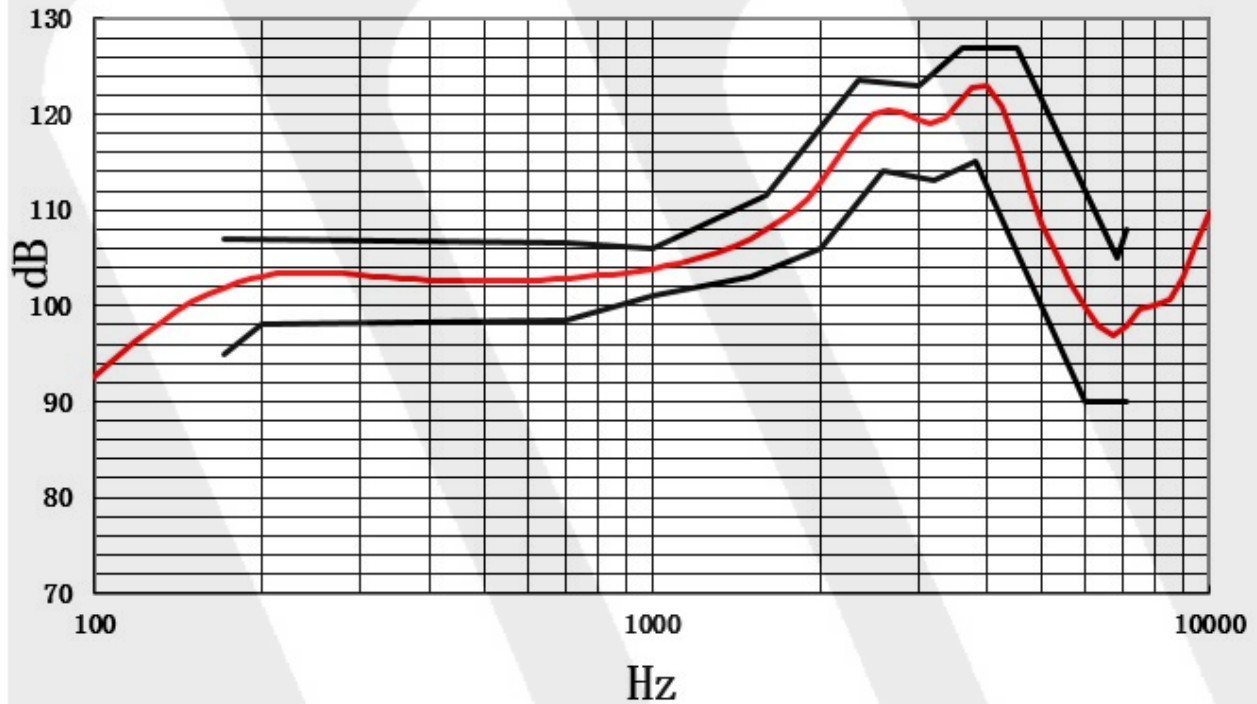


Fig 3. Typical Frequency Response @ 0.866V on IEC 711 type 3.2 HL coupler @ DRP

Limit table

UL (Hz)	170	700	1000	1600	2350	3000	3600	4500	6800	7100	
UL(dBSPL)	107	106.5	106	111.5	123.5	123	127	127	105	108	
LL (Hz)	170	200	700	1000	1500	2000	2600	3200	3800	6000	7100
LL (dBSPL)	95	98	98.5	101	103	106	114	113	115	90	90

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Alternative Limit table with 613mV on IEC 711 Type 3.2 HL coupler @ DRP (only for Customer's IQC)

UL (Hz)	170	700	1000	1600	2350	3000	3600	4500	6800	7100	
UL (dB SPL)	104	103.5	103	108.5	120.5	120	124	124	102	105	
LL (Hz)	170	200	700	1000	1500	2000	2600	3200	3800	6000	7100
LL (dB SPL)	92	95	95.5	98	100	103	111	110	112	87	87

### 5.4 Typical THD Curve

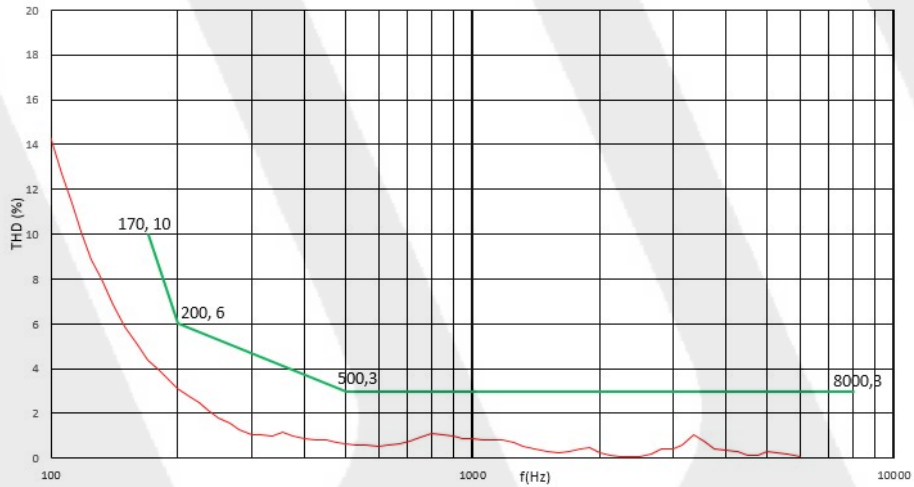


Fig 4. Typical THD Curve @ 0.866V on IEC 711 type 3.2 HL coupler

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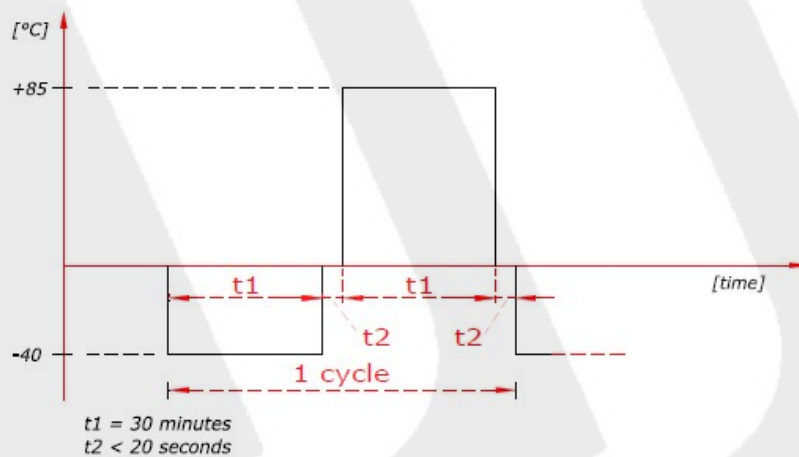


## 6. Reliability

After any of the reliability tests below the DUTs should be removed from the test chamber to lab environment with normal climatic conditions. Unless otherwise stated the recovery period should be at least 2 hours before performance testing. After reliability test all samples must meet the requirements specified in section 4.

### 6.1 Thermal Shock

Test conditions per below (transition < 20s and 10 cycles)



### 6.2 Humidity

Soak DUTs to 85°C with R.H of 85 % for continuous period of 168 Hrs.

### 6.3 Drop Test

DUTs shall be assembled in a 100g fixture and dropped from a height of 1.5m, 3 times in each direction for a total of 18 times.

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**6.4 Rated Power Test**

DUTs shall be tested under specified climatic condition (per section 3) for a continuous period of 100 hrs at rated noise power (10mW). Input shall be a simulated program signal with a peak to rms ratio of 1.8 to 2.2 in rated frequency range.

**6.5 Max. Power Test**

DUTs shall be tested under specified climatic condition (per section 3). Input shall be simulated program signal with a crest factor of 1.8 to 2.2 in rated frequency range for a period of 1 sec at short term max power (30mW). The test shall be repeated 60 times with intervals of 1 min.

**6.6 Operating Temperature**

-20°C to 70°C

**6.7 Storage Temperature**

-40°C to 85°C

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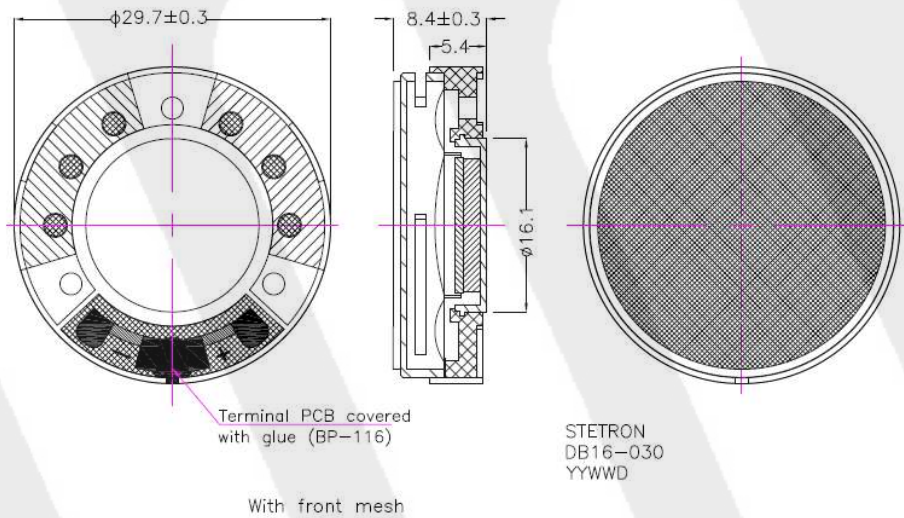
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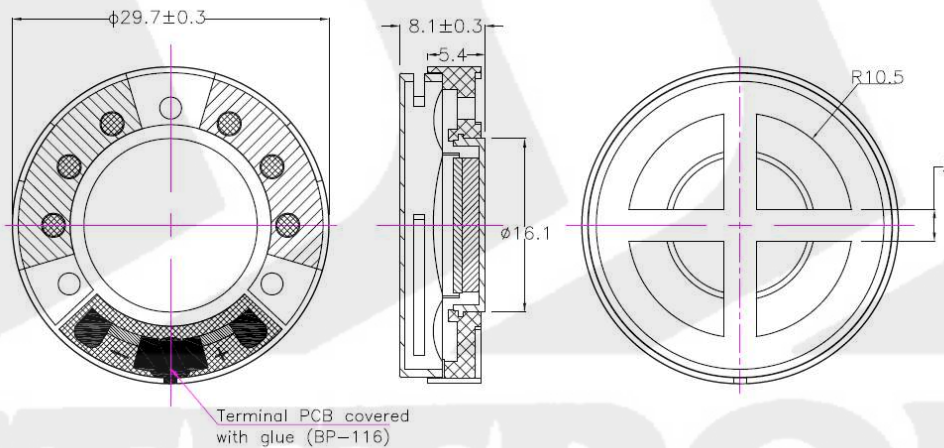
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## 7. Mechanical Layout and Dimensions

### 7.1 Views with front mesh



### 7.2 Views without front mesh



All dimension are in mm  
 Unless otherwise specified tolerance is  $\pm 0.15$ mm  
 Receiver to be supplied with front mesh

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