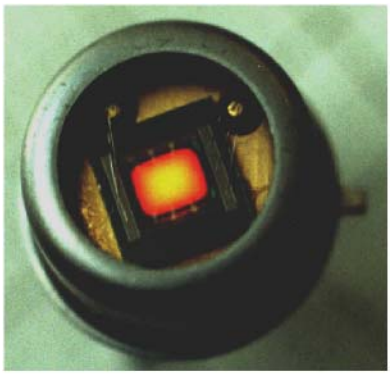
# Pulsed Broadband Infrared Light Source
## MIRL17-900

Intex has developed a series of unique high-intensity pulsed infrared (IR) light sources capable of operating at high frequencies. Modulation of the light output is achieved by modulating the input electrical power, eliminating moving parts. The emission spectrum is that of a black body. The IR sources are based on patented thin membranes (2 microns thick) as thermoresistive elements. High emissivity, high thermal conductivity and low thermal mass of the membranes allow rapid heating and cooling for pulsed operations at high frequencies. The IR light sources are fabricated using MEMS technology.



**Source Characteristics**
- Wide spectral output
- Fast response
- High pulse rate
- High modulation depth
- High efficiency – low power consumption
- Long life and cost effective
- Custom design – many package options

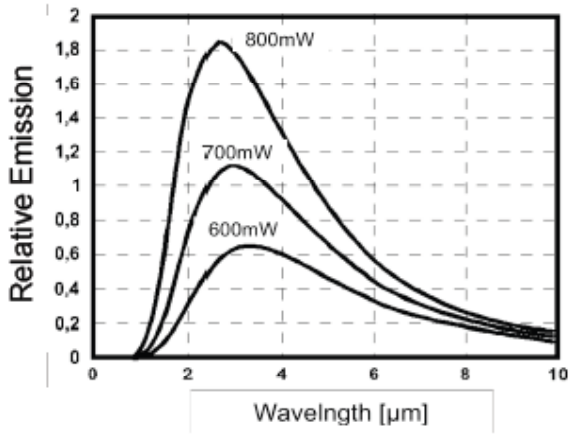
**Applications**
- Infrared spectroscopy
- Explosive gas detection systems (hydrocarbon gases)
- Combustion efficiency and emissions monitoring (CO, $CO_2$)
- Toxic emission systems ($SO_X$, $NO_X$, $NH_3$)
- Air quality and environmental monitoring
- HVAC efficiency; controlling airflow by measuring $CO_2$ concentration
- Patient bedside monitoring systems
- Anesthesia gas monitoring systems
- Noninvasive glucose measurements
- Automotive engine control and exhaust monitoring

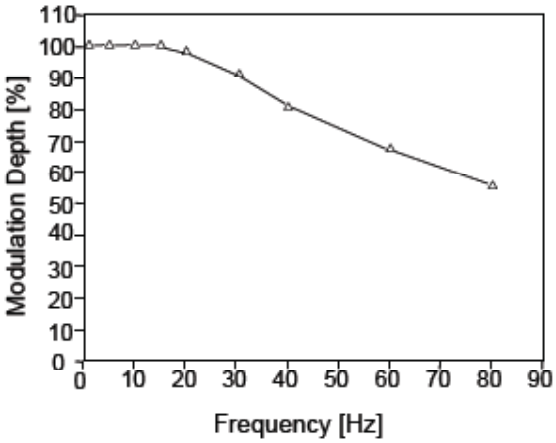
**Electro Optical Components, Inc.**
5460 Skylane Boulevard, Santa Rosa, CA 95403
Phone: (707) 568-1642 • FAX: (707) 568-1652
www.eoc-inc.com

## Specifications

All parameters measured at 10 Hz, 50% duty cycle open to air, at room temperature and atmospheric pressure. For other frequencies, parameters may vary. Packaging in TO-5 or TO-39. The IR emitters can be supplied with $CaF_2$, $BaF_2$, ZnSe, Sapphire or Si windows.

| Parameter | Typical | |
|---|---|---|
| Spectral Output Range | 1.0 – 20 µm | See graph below |
| Emitter Surface Area | 1.7x1.7 $mm^2$ | Custom sizes available |
| Emitter Thickness | 2 microns | Very low thermal mass |
| Resistance | 50 Ω | 45-55Ω |
| Drive Voltage (pulsed, bi-polar or DC) | 6.5 V | 6-7 V |
| Drive Current | 135 mA | 130 – 140 mA |
| Working Temperature | 750 ˚C | |
| Modulation frequency | 0 – 100 Hz | See graph below |
| Maximum Frequency at 50% Modulation | 100 Hz | |
| Power Consumption | 900 mW | 850 - 950 mW |
| Integrated Power Emission | 90 mW | 80 – 100 mW |
| Warm-up Time | <30 msec | |
| Decay time | <5 msec | |
| Lifetime | >5,000 hours at 750˚C<br>>25,000 hours at 600˚C<br>>100,000 hours at 500˚C | |

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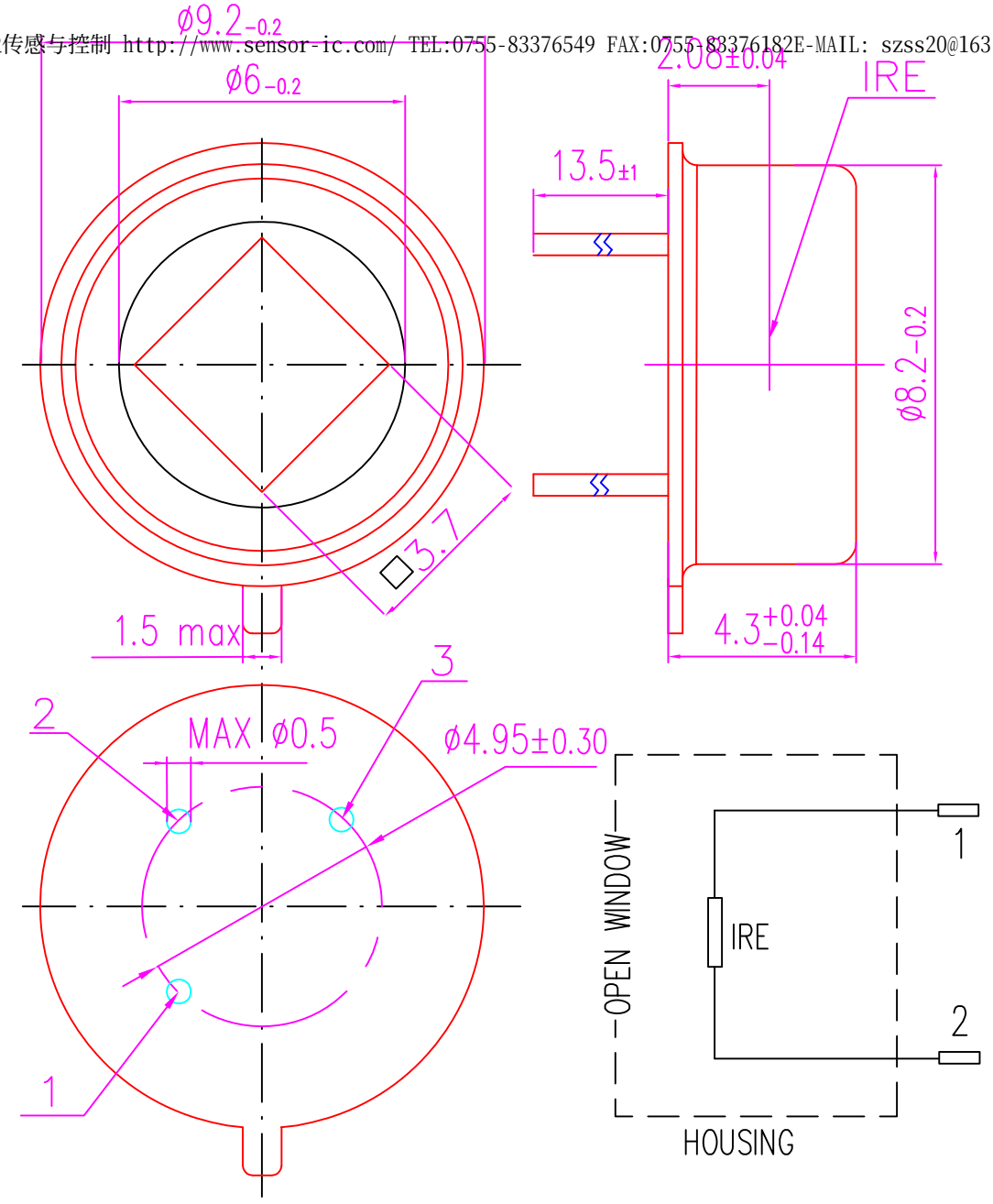


BOTTOM VIEW

| GENERAL TOLERANCES | | | EDGES OF WORKING-PARTS ACC. DIN 6784 | GEOMETRICAL TOLERANCES |
|---|---|---|---|---|
| | DATE | NAME | MATERIAL | intex |
| DRAWN BY | 09.29.06 | Demchenko | | |
| CHECKED BY | 09.29.06 | Kirpilenko | | |
| SCALE 5:1 | TITLE: ELEMENT ORIENTATION AND CONNECTIONS MIRL 17-900 | | | DRAWING NO. 520/476.201 |
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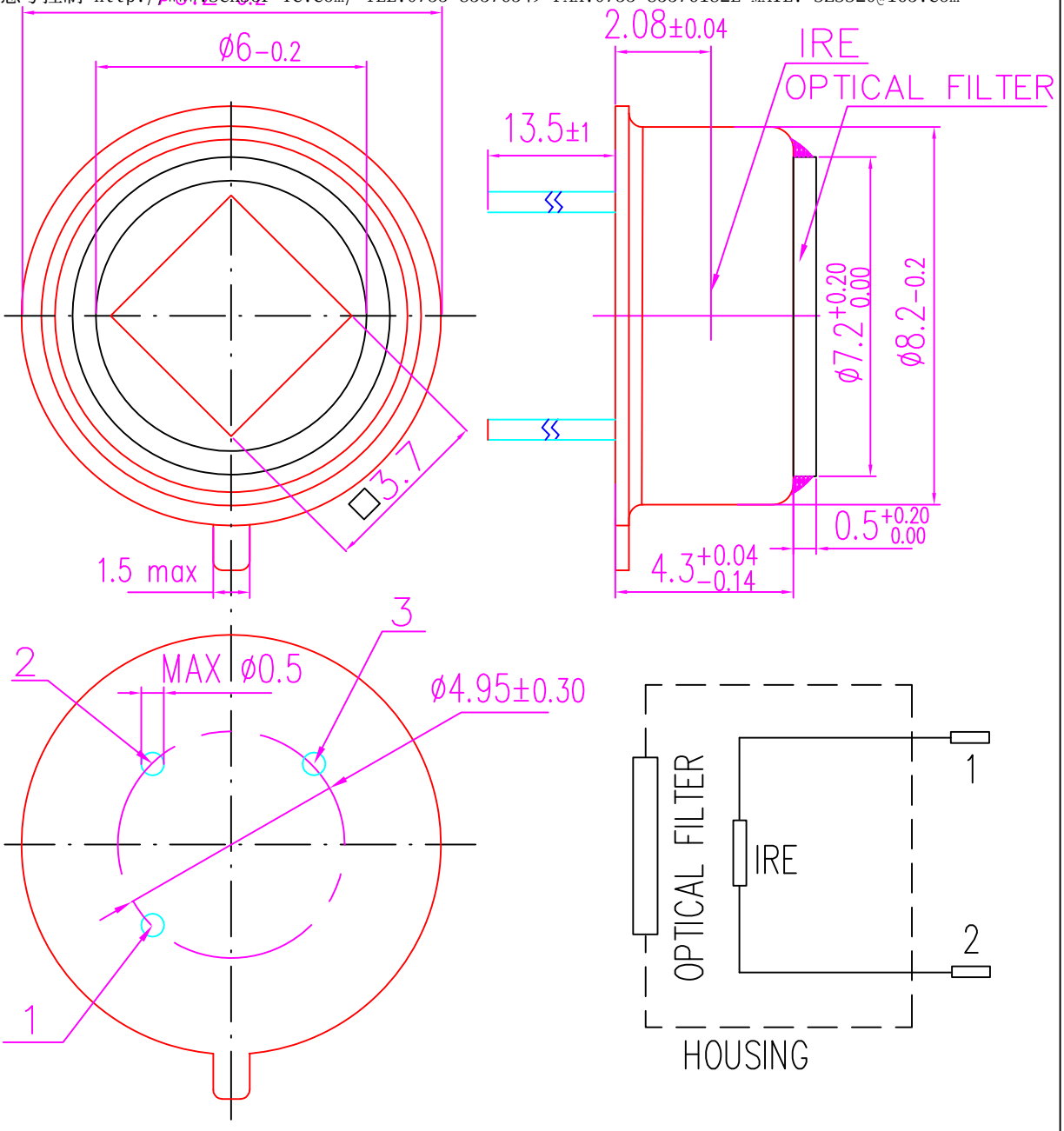


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