**PERFORMANCE**

Maximum Power Requirements  
5.0 VDC, 60 mA max. (50% duty cycle source drive)

Minimum Operating Voltage  
2.0 VDC, 20 mA max. (50% duty cycle source drive)

Source Drive Frequency  
3 Hz

Active Output in N₂ (peak-to-peak)  
4 to 7 mV at 3 Hz, 50% duty cycle

Reference Output in N₂ (peak-to-peak)  
2 to 5 mV at 3 Hz, 50% duty cycle

Response Time (t₉₀)  
< 40 s @ 20°C ambient

Warm-up Time  
To final zero ± 100 ppm: < 30 s @ 20°C  
To specification: < 30 minutes @ 20°C

**LIFETIME**

MTBF  
> 5 years

**KEY SPECIFICATIONS**

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</thead>
<tbody>
<tr>
<td>IAQ</td>
<td>0 to 5000 ppm (IAQ)</td>
<td>1</td>
<td>10</td>
<td>50</td>
<td>± 20</td>
<td>± 50</td>
<td>0.000325</td>
<td>0.9363</td>
<td>4000 ppm</td>
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<tr>
<td></td>
<td>0 to 5% vol (Safety)</td>
<td>1.5</td>
<td>10</td>
<td>100</td>
<td>± 20</td>
<td>± 50</td>
<td>0.5411</td>
<td>0.6716</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>0 to 20 % vol (Combustion)</td>
<td>2.5</td>
<td>10</td>
<td>2000</td>
<td>± 20</td>
<td>± 2500</td>
<td>1.0459</td>
<td>0.2932</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>0 to 100 % vol (Process Control)</td>
<td>tbc</td>
<td>10</td>
<td>tbc</td>
<td>± 20</td>
<td>tbc</td>
<td>tbc</td>
<td>tbc</td>
<td>100%</td>
</tr>
</tbody>
</table>

* When ordering, select ‘IAQ’ or ‘Other’, depending on your application.

**NOTICE:**  
At the end of the product’s life, do not dispose of any electronic sensor, component or instrument in the domestic waste, but contact the instrument manufacturer, Alphasense or its distributor for disposal instructions.

**NOTE:**  
All sensors are tested at ambient environmental conditions, with 47 ohm load resistor, unless otherwise stated. As applications of use are outside our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.
Typical response from 0 to 5000 ppm CO₂.

The fit is very close to the theoretical curve, predicted by the Beer-Lambert Law.

Custom linearisation is not necessary with the IRC-AT. Using universal linearisation constants, repeatability between cells is very good, allowing easy implementation.

For an IAQ application, a zero and then single calibration at 4000 ppm CO₂ gives the error shown above; typically less than ±40 ppm from 0 to 4500 ppm.

Excellent resolution and noise at 1000 ppm CO₂ for the IRC-AT is achieved by better design, not by using more expensive components.

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. For Application Notes visit “www.alphasense.com”.

In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification. The data contained in this document is for guidance only. Alphasense Ltd accepts no liability for any consequential losses, injury or damage resulting from the use of this document or the information contained within. (©ALPHASENSE LTD) Doc. Ref. IRC-AT/NOV13