

Calorie Answer CA-Hi

- Food calorie measuring equipment -



Joy World Pacific Co., Ltd.



ES France - Département Bio-tests & Industries
127 rue de Buzenval BP 26 - 92380 Garches



Tél. 01 47 95 99 90



e-mail : bio@es-france.com
Site Web : www.es-france.com

What is Calorie Answer?



Measured
parameter

- kcal
- Protein(g)
- Fat(g)
- Carbohydrate(g)
- Moisture(g)
- Alcohol (g/%)

1. Measure standard cell
2. Homogenize and grind sample
3. Put the sample in cell and measure
4. Analysis time is 80 sec.



ES France - Département Bio-tests & Industries
127 rue de Buzenval BP 26 - 92380 Garches



Tél. 01 47 95 99 90



e-mail : bio@es-france.com
Site Web : www.es-france.com

Award

2006 : Launch a **Calorie Answer CA-HN**

2009 : "Energy assessment of food using near-infrared spectroscopy" published in the Journal of the Japanese Society of Nutrition and Food Science

2011 : Launch a **Calorie Answer CA-HM**

2015 1. 6th Mono-tsukuri Nippon Grand Award

2. Tohoku Bureau of Economy, Trade and Industry Director's Award

3. Tohoku Regional Invention Award

4. Minister of Education, Culture, Sports, Science and Technology Invention Encouragement Award

2020 : Minister of Education, Culture, Sports, Science and Technology Award for Science and Technology

2023 : Launch a **Calorie Answer CA-Hi**



ES France - Département Bio-tests & Industries
127 rue de Buzenval BP 26 - 92380 Garches



Tél. 01 47 95 99 90



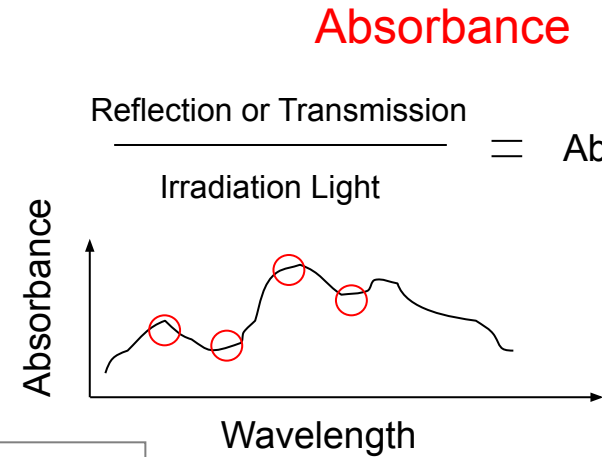
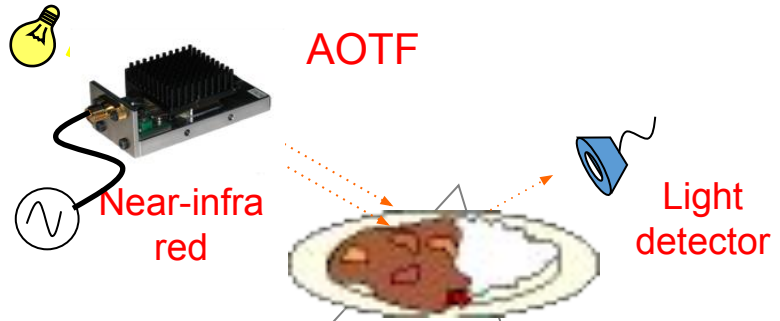
e-mail : bio@es-france.com
Site Web : www.es-france.com

Technology of Calorie Answer

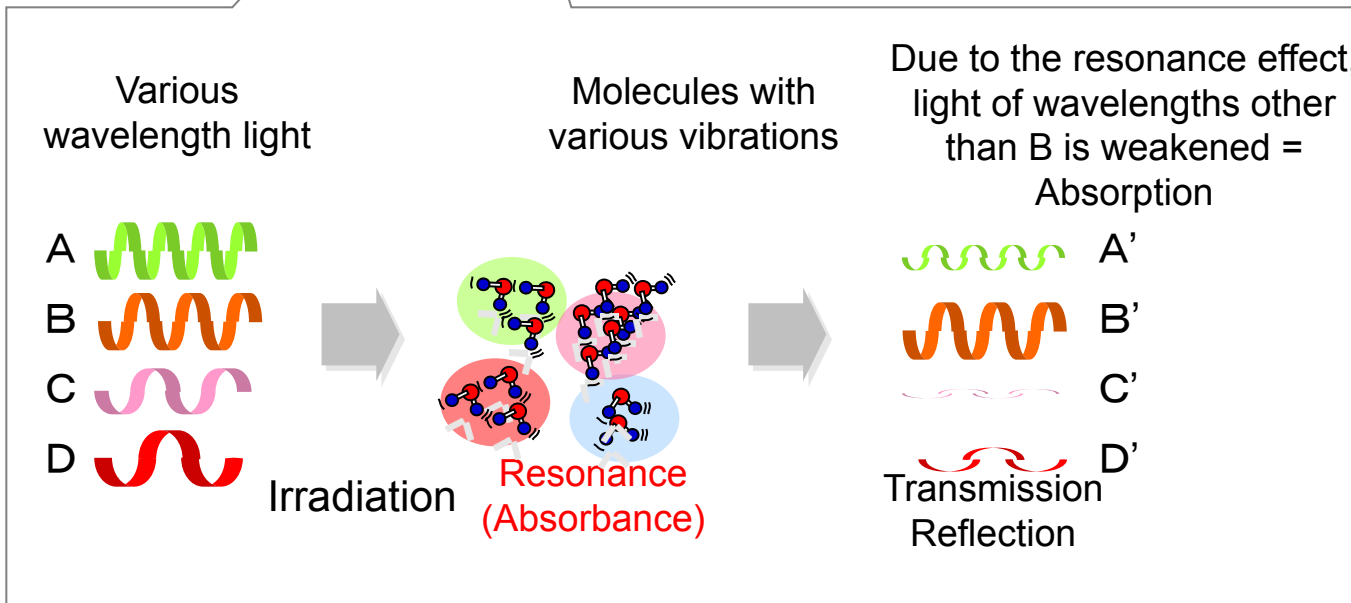
- It uses near-infrared spectroscopy, which uses near-infrared light (NIR) that is separated from light from a white light source using an acousto-optic filter (AOTF).
- Near-infrared light has a wavelength range of 700 to 2,500 nm, but Calorie Answer uses monochromatic light in the wavelength range of 1,100 to 2,200 nm.
- By irradiating the sample with near-infrared light and detecting the degree of absorption of the reflected or transmitted light ("absorbance"), the calorie and nutritional content (protein, fat, carbohydrates, water) of the food are analyzed and quantified.

Near Infrared spectroscopic

- measure absorbance -



The absorbance of the marked **○** wavelengths is combined and used to calculate calories.



Use of NIR

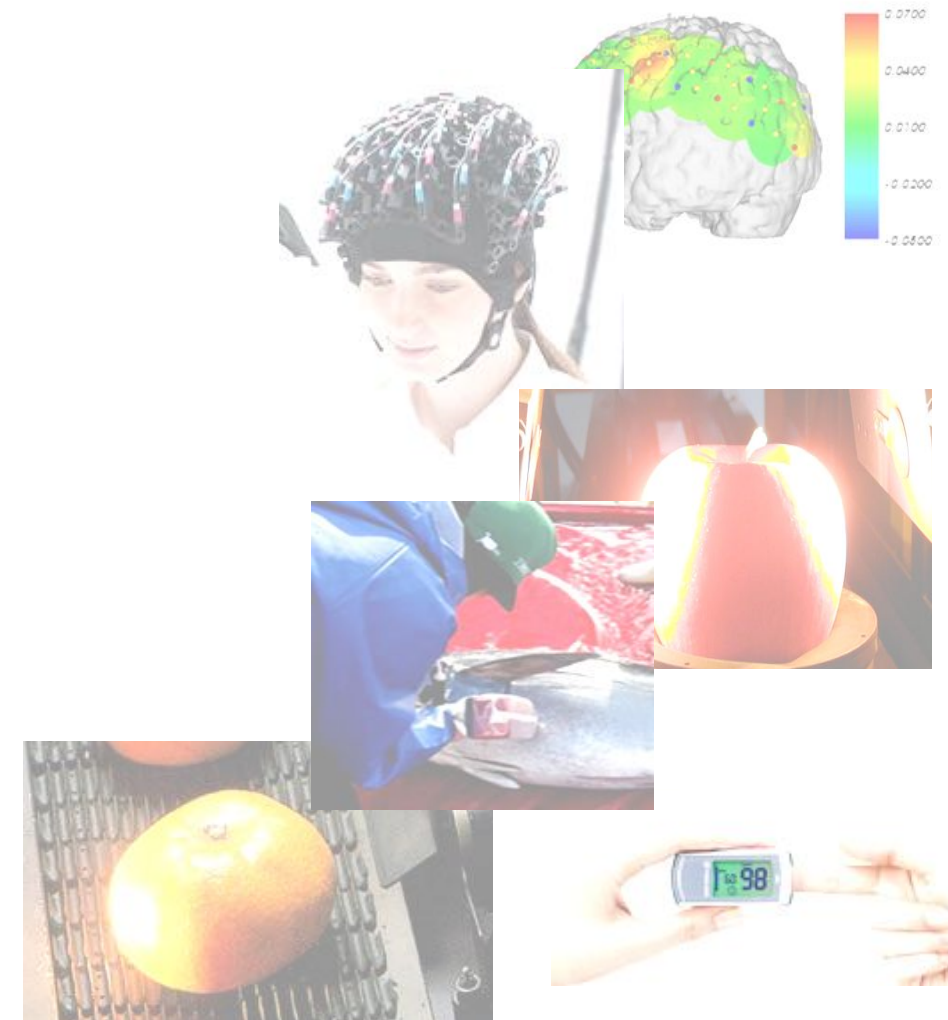
【Agri】 Destructive analysis of fruit(Sugar, Ripeness)
Taste assessment of Rice, Water quality

【Food】 Fat of Tuna, Quality of Peanut

【Pharma】 QC, Quantitative analysis of API

【Petro】 QC, Monitoring of reaction, On-line monitoring

【Fiber】 Fiber type identification



(第33回近赤外講習会 より)



ES France - Département Bio-tests & Industries
127 rue de Buzenval BP 26 - 92380 Garches



Tél. 01 47 95 99 90



e-mail : bio@es-france.com
Site Web : www.es-france.com

Software for creating Calibration Curves

- By using the optional calibration curve creation software, it is possible to create a calibration curve (measurement mode) using Calorie Answer.
- Users can create the measurement mode, performing simulations, checking the measurement waveform etc, which enables you to obtain more information.



Calibration curves creation software

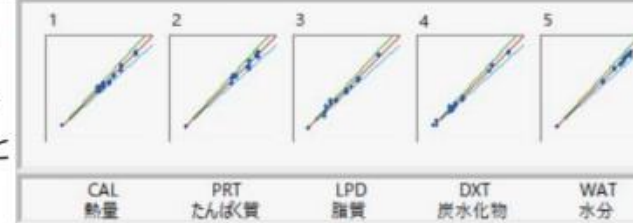


試用版では、測定データを取り込むことにより

3. 波形表示 波形データを見ることが出来ます。

5. 検量線作成 各成分の分布プロットを見ることが出来ます。

7. 測定値 検量線作成を基に、測定値シミュレーションを確認頂くことが出来ます。



Improvement CA-Hi

1. Reference cell measurement

CA-Hi: Only one initial measurement is required.

Total measurement time per sample is reduced.

Measurement time: Approximately 80 seconds for the first reference measurement and approximately 80 seconds for subsequent sample measurements

2. Analysis of Liquid sample

CA-Hi: By adopting the “transmission reflection method” which measures the light that passes through the liquid and is diffusely reflected, liquid leakage into the inside of the device is prevented.

3. Analysis mode

CA-Hi: Conventional models needs to choose 6 pre-installed modes.

But CA-Hi has no limit to the number of measurement modes, and the price can be flexibly set for each mode. It is also possible to sell the main unit plus calibration curve creation software or multiple measurement modes.



User of Calorie Answer

ジャンル別導入比率

Over 400

