

# iCelsius<sup>o</sup> RH

Extend your iPhone, sense comfort

- Real-time temperature and humidity measurement
- Temperature range: -40C to 125C
- Humidity range: 0 to 100% RH

A stainless steel tip temperature and relative humidity probe that transforms your iPhone / iPad and iPod touch into a digital meter



## Technical Specifications

### Hardware

Dimensions:	Probe: 25mm, $\varnothing$ 5mm (1", $\varnothing$ 0.20") Cable: 100cm (3.3ft)
Material:	Stainless Steel probe
Weight	26g (0.92oz)
Power requirements	from iPad / iPhone / iPod touch
Measurement range	Temperature: -40°C to +125°C (-40°F to 257° F) Humidity: 0% RH to 100% RH
Accuracy	Temperature: typical $\pm 0.3^{\circ}\text{C}$ (0.54° F) Humidity: typical $\pm 3\%$ RH (see chart on next page)
Response time (to reach 63.2% of value)	Temperature: 5 to 30 sec Humidity: 8 sec typical, air (1 m/s)
Display resolution	0.1°C (0.1°F) 0.1% RH
Sampling period:	1 sec
Operating temperature:	
Probe tip only:	-40°C to +125°C (-40°F to 257°F)
Whole unit:	0°C to +35°C (32°F to 95°F)
Non operating temperature (whole unit):	-20°C to 45°C (-4°F to 113°F)
Relative humidity:	5% to 95% non condensing
Max operating altitude:	3000 m (10,000 feet)
Certifications:	CE, RoHS, MFi (Made for iPod)

### Software

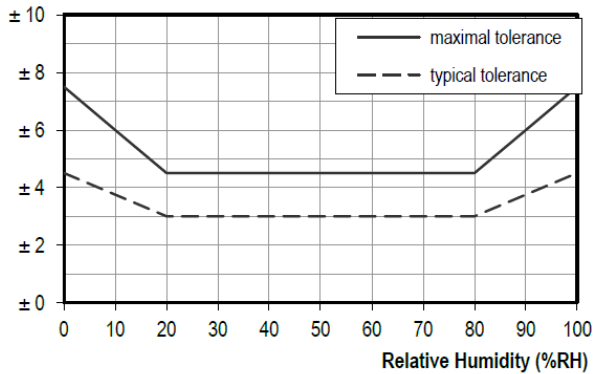
Device support	iPhone 4S, 4, 3GS, 3G new iPad, iPad 2, iPad iPod touch 4 <sup>th</sup> and 3 <sup>rd</sup> generation
iOS Support	Requires iOS 4.2+ or higher
Installation, launch	Automatic installation when probe first inserted Automatic app launch when probe inserted afterwards
Units	Celsius or Fahrenheit
Printing	Print graphs using Airprint
Sharing	Share graphs on Facebook, Twitter
Data export	CSV: email, iTunes, export to Numbers, Dropbox GIF: email, Picture Library
Alarms	Thresholds for min/max limits Sound alarm, call another phone (iPhone only)
Data storage	Constrained by device memory using internal database
Graphs	Pan, zoom touch support Manual date setup
iCelsius API	We provide an API for selected developers willing to integrate our technology into their apps.

## Sensor performance

### Relative Humidity

Parameter	Condition	min	typ	max	Units
Resolution <sup>1</sup>	12 bit		0.04		%RH
	8 bit		0.7		%RH
Accuracy tolerance <sup>2</sup>	typ		±3.0		%RH
	max	see Figure 2			%RH
Repeatability			±0.1		%RH
Hysteresis			±1		%RH
Nonlinearity			<0.1		%RH
Response time <sup>3</sup>	$\tau$ 63%		8		s
Operating Range	extended <sup>4</sup>	0		100	%RH
Long Term Drift <sup>5</sup>	normal		< 0.5		%RH/yr

DRH (%RH)

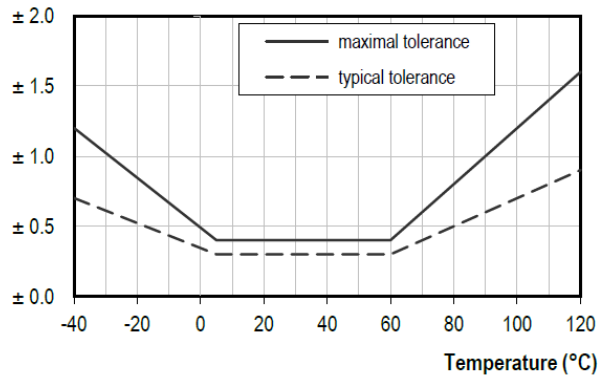


**Figure 2** Typical and maximal tolerance at 25°C for relative humidity. For extensive information see Users Guide, Sect. 1.2.

### Temperature

Parameter	Condition	min	typ	max	Units
Resolution <sup>1</sup>	14 bit		0.01		°C
	12 bit		0.04		°C
Accuracy tolerance <sup>2</sup>	typ		±0.3		°C
	max	see Figure 3			°C
Repeatability			±0.1		°C
Operating Range	extended <sup>4</sup>	-40		125	°C
Response Time <sup>7</sup>	$\tau$ 63%	5		30	s
Long Term Drift			< 0.04		°C/yr

DT (°C)



**Figure 3** Typical and maximal tolerance for temperature sensor in °C.

## More information

The iCelsius is a "Made for iPhone" certified device. The product passed validation tests from Apple Inc.

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Contact us:

### U.S. Office:

Aginova Inc.  
7552 Central Park Blvd  
Mason, OH 45040  
Phone: +1 513 204 5837  
Fax: +1 732 879 0248  
info (at) aginova.com

### European Office:

Aginova Sàrl  
PSE-D, EPFL  
CH-1015 Lausanne, Switzerland  
Phone: +41 21 693 8691  
Fax: +41 21 693 8692  
info-ch (at) aginova.com



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