

## Chemicals

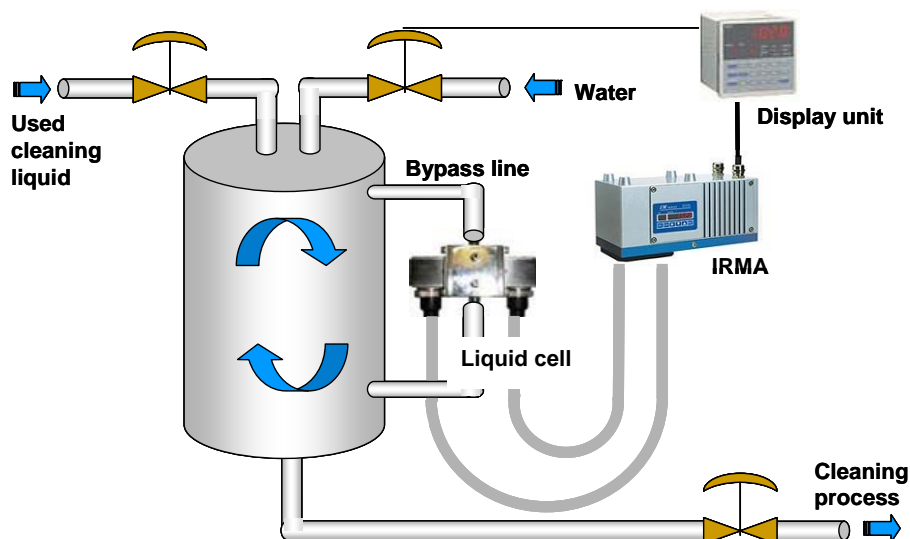
## Application notes

### Moisture in cleaning solution

Instead of using Chlorofluorocarbon, alcohol solution is used for cleaning PCB (printed circuit board), LC(liquid crystal), or solar panel. This solution tend to start fire at low moisture. While excess moisture reduces cleaning ability of the solution. Therefore, moisture control is essential for these solutions.

In most cases, these solutions are reused, and moisture gauge is set along in the process of collecting solution and adding water to it. The gauge can measure 5-15% moisture( $\pm 0.2\%$  accuracy), but electronic devices are not allowed to install in-line, because of fire safety. Liquid Cell and Optical Fiber Cable(2m+ in length) from CHINO IM series can control moisture safely and easily from inside the control room. Optical fiber is made of glass, and contains no materials that carry electronic current. Using optical fiber can be a perfect electric insulator to isolate the measuring area.

IM Series is equipped w/ 4-20mA Analog output which can be easily incorporated with existing process control systems.



Products / Location	Parameter	Range
Cleaning solution	Moisture	5 to 10%

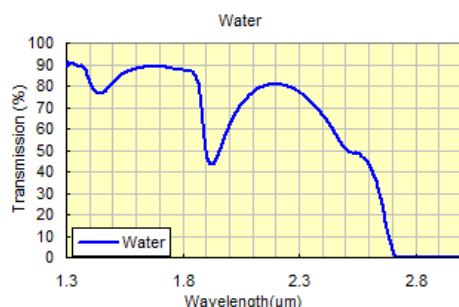
### Recommended model / Item

- \* Liquid cell type moisture unit  
Model : IRMA2100S Qty : 1
- \* liquid cell (2mm gap)  
Model : IR-WCC5201 Qty : 1
- \* Fiber optic cable (5m)  
Model : IR-Fiber005 Qty : 2

### Installation

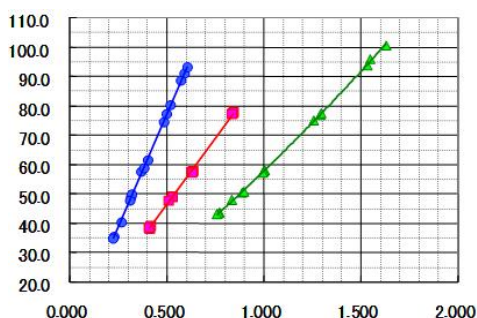
Install Chino's liquid cell on a bypass-line from used cleaning solution line, and after adding-water process. (Usually the cell needs to be cleaned-up every 3 months, so it is necessary to put a valve on both inlet and outlet of the cell for the removing purpose)  
By connecting CHINO's cell and IM series with fiber optic cables, the measuring area can be electrically insulated.

### Absorption characteristic



Moisture(water) has a unique infrared absorption spectrum regions. Water absorbs at wavelength of 1.43, 1.94, and 3 micrometers.

### Calibration curve



Calibration curve is a correlation between moisture determined by customer's reference instrument and IR absorption measured by IRMA.

[Basic sample test for moisture]

1. Prepare samples with various moisture content
  2. Show each sample to IRMA and record absorption level
  3. As conducting step-2, determine moisture level with your reference instrument
  4. Put all data points on a X/Y graph and see if there's a correlation
- Note: Reference instrument may vary depending on the method (by volume or weight).



Mirror type



Fiber type



Liquid cell type



Setting & Display unit

### Contact

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