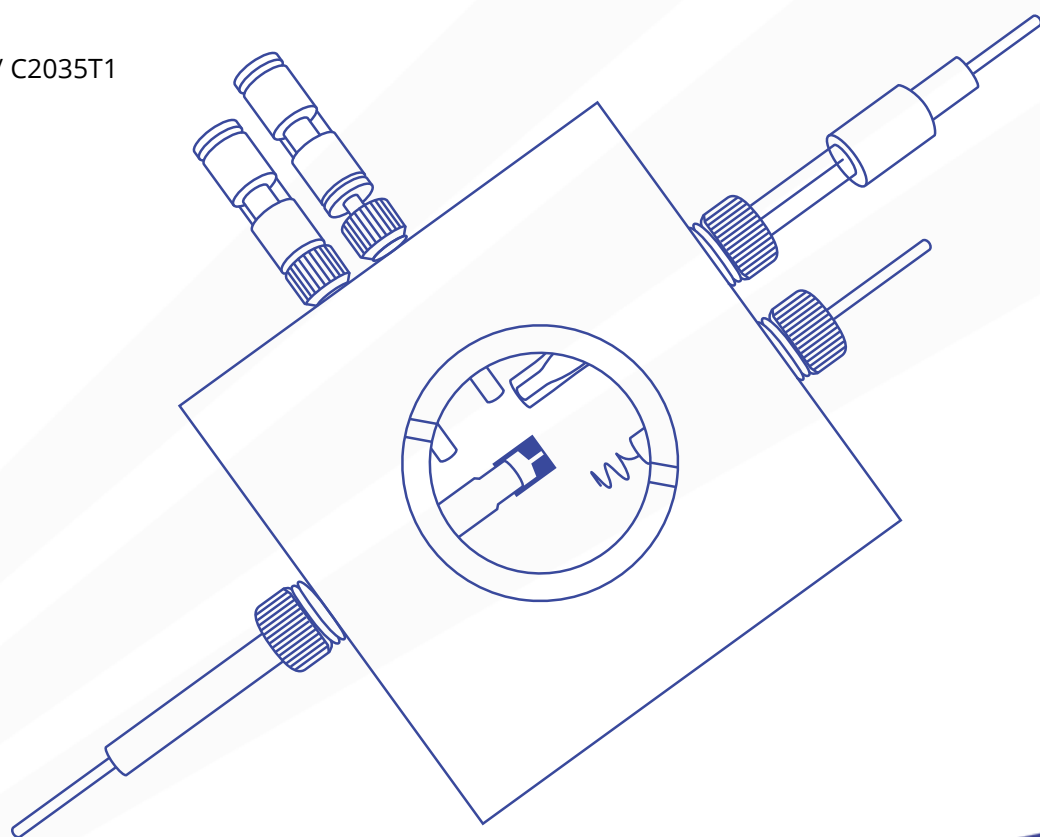


# In-situ Raman Electrochemical Cell

## USER MANUAL

Manual version: 1.0.0

Product code: C2035R1 / C2035T1



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# 1. Packing Lists

## 1.1 Packing List for C2035R1

The standard items included with the C2035R1 In-situ Raman Electrochemical Cell are:

1. Optical Window Fasten Tool x1
2. PTFE cell x1
  - PEEK Electrode Secure Screw x3
3. 6.5mm (Inner Diameter) PEEK Electrode Screws x3 & Fluoroelastomer O-Rings
4.  $\Phi=40*1.0$  mm Gasket Sealing for Optical Window x5
5.  $\Phi=40*1$  mm JS2 Quartz Optical Window x3
6. Tube Cutter x1
7. Screws and Screw Drivers (to attach WE to the electrode holder)
8.  $\Phi=40*0.5$  mm Gasket Sealing for Optical Window x5
9. PTFE Tape x1
10. 3mm (Inner Diameter) PTFE Tubing
11. 3mm (Inner Diameter) PEEK Gas Inlet/Outlet Closed Ports x2 & Fluoroelastomer O-Rings
  - Screwdriver
12.  $\Phi=40*0.2$  mm Gasket Sealing for Optical Window x5
13. PTFE Rod 3mm air inlet/ outlet stopper x4
  - PTFE Rod 6.2mm electrode stopper x3
14.  $\Phi=6$ mm PEEK Electrodes
  - Platinum Electrode Holder x1
  - Ag/AgCl Reference Electrode x1
  - Pt coil Counter/ Auxiliary Electrode x1
  - Suction Holder (for Quartz Window) x1
15. 3mm (Inner Diameter) PEEK Gas Inlet/Outlet Screws x5 & Fluoroelastomer O-Rings
16. Push-Fit Connectors x2



## 1.2 Packing List for C2035T1

The standard items included with the C2035T1 In-situ Raman Electrochemical Cell are:

1.  $\Phi=40*1$  mm JS2 Quartz Optical Window x3
2. Tube Cutter x1
3. PTFE cell x1
  - o PEEK Electrode Secure Screw x3
4. Optical Window Fasten Tool x1
5. Screws and Screw Drivers (to attach WE to the electrode holder)
6. Push-Fit Connectors x2
7. PTFE Rod 3mm air inlet/ outlet stopper x4
  - o PTFE Rod 6.2mm electrode stopper x3
8.  $\Phi=6$ mm PEEK Electrodes
  - o Platinum Electrode Holder x1
  - o Ag/AgCl Reference Electrode x1
  - o Pt coil Counter/ Auxiliary Electrode x1
  - o Suction Holder (for Quartz Window) x1
9. 3mm (Inner Diameter) PEEK Gas Inlet/Outlet Closed Ports x2 & Fluoroelastomer O-Rings
10.  $\Phi=40*0.2$  mm Gasket Sealing for Optical Window x5
11. 6.5mm (Inner Diameter) PEEK Electrode Screws x3 & Fluoroelastomer O-Rings
12.  $\Phi=40*0.5$  mm Gasket Sealing for Optical Window x5
13. PTFE Tape x1
14. 3mm (Inner Diameter) PTFE Tubing
15. 3mm (Inner Diameter) PEEK Gas Inlet/Outlet Screws x5 & Fluoroelastomer O-Rings
16.  $\Phi=40*1.0$  mm Gasket Sealing for Optical Window x5



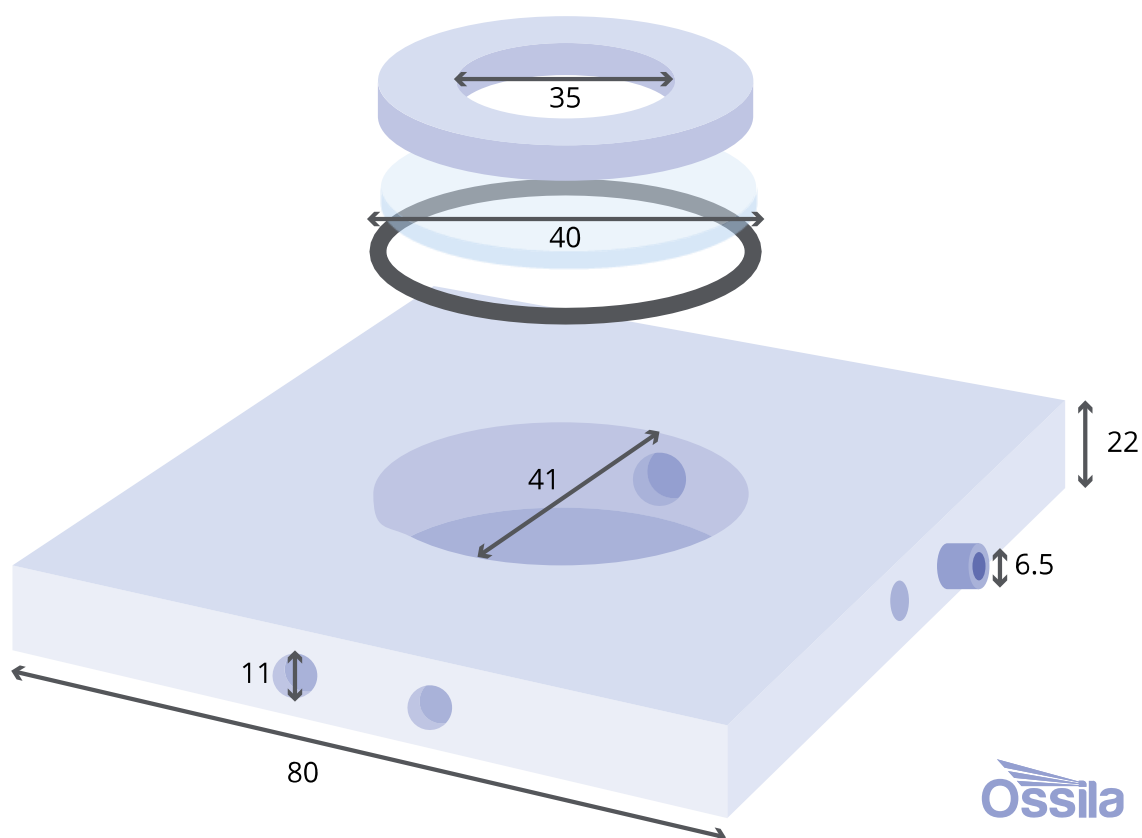
## 2. Specifications

The In-situ Raman Electrochemical Cell specifications are shown below.

### 2.1 C2035R1 In-situ Raman Electrochemical Cell specifications

**Table 2.1.** C2035R1 In-situ Raman Electrochemical Cell specifications.

Width	80 mm
Height	22 mm
Inlet Size	6 mm
Optical Window	35 mm

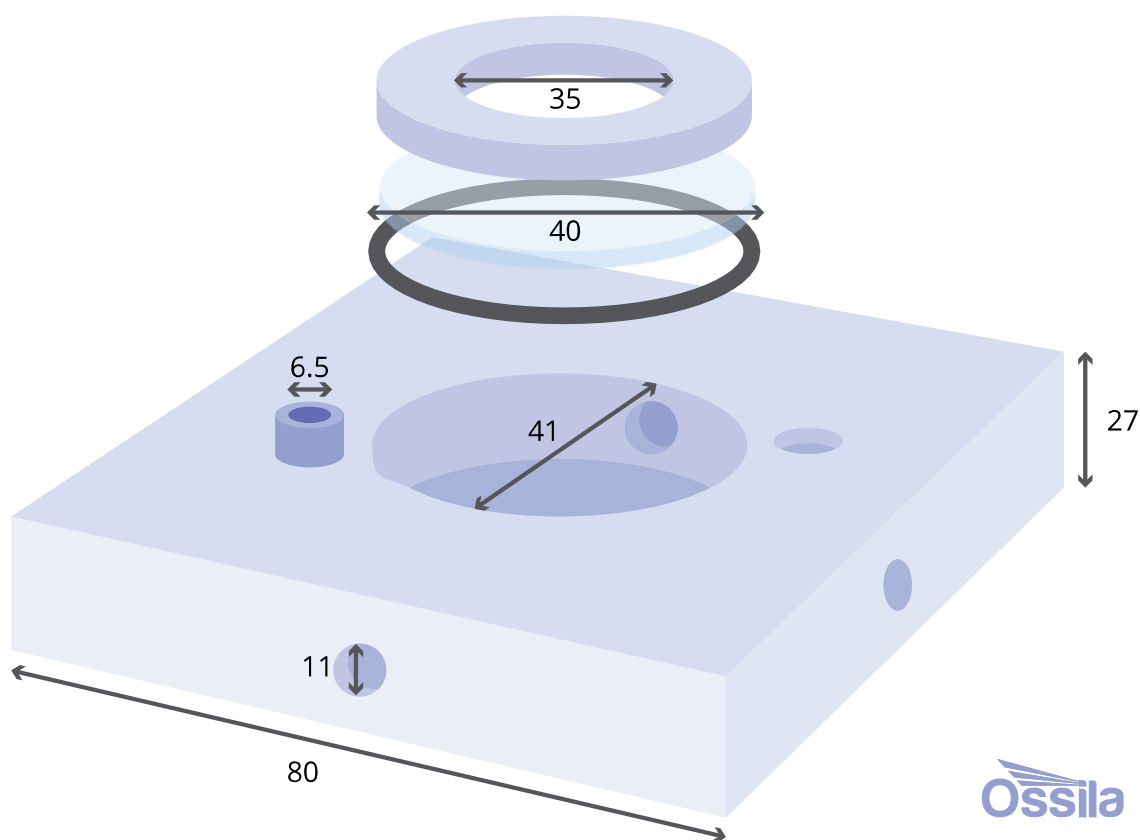


C2035R1 In-situ Raman Electrochemical Cell Dimensions

## 2.2 C2035T1 In-situ Raman Electrochemical Cell specifications

Table 2.2. C2035T1 In-situ Raman Electrochemical Cell specifications.

Width	80 mm
Height	27 mm
Inlet Size	6 mm
Optical Window	35 mm



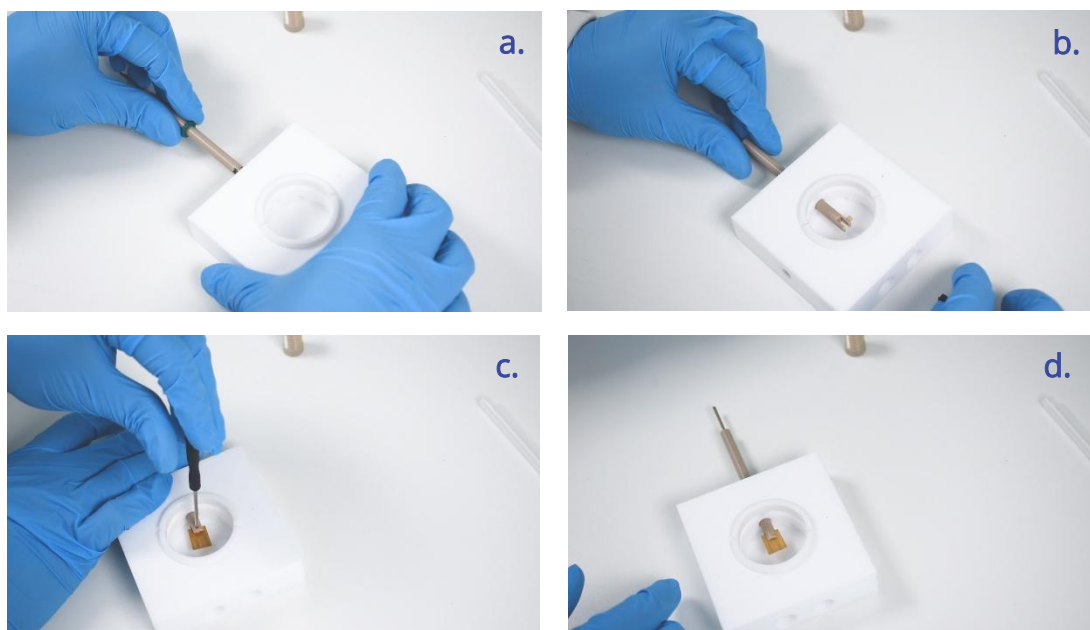
C2035T1 In-situ Raman Electrochemical Cell Dimensions

### 3. Assembly

Video Guidance: [In-situ Raman Electrochemical Cell Assembly](#)

#### Working Electrode Assembly:

- Insert the Working Electrode Holder with the O-ring (to the lone port on 10 ml cell)
- Loosen the Screw
- Attach the Electrode
- Turn the active side towards the Optical Path.



**Specially designed Detachable L-shaped Glassy Carbon will also fit into the cell (Need to Purchase Separately):**

- Insert Electrode Head to the cell and guide the lead through the hole
- Tighten from outside to secure the electric connection. L-shape design helps to reduce distortions by reducing the Gap between the WE and the Window. 8.5 mm and 10.5 mm (C2040A1) [L-Shaped Detachable Glassy Carbon Electrodes](#) are compatible with 10 ml (C2035R1) and 30 ml (C2035T1) In-situ Raman Electrochemical cells, respectively.



**Reference and Counter Electrode Assembly:**

- a. Fix the Reference and Counter/Auxiliary Electrodes and make sure the Reference Electrode is placed closer to the working electrode, and far from the Counter Electrode.
- b. Tip: Position the O-ring to adjust the placement of the Electrode within the Cell.

**Gas Feedthrough Assembly:**

- a. Use 3mm Inner Diameter Gas Inlet/ Outlet Secure Screws to Secure the Gas Line
- b. Inlets are positioned on the side of the Cell
- c. Recommended to use lower port as Gas Inlet (in 10 ml cell), and the upper port as Gas Outlet
- d. Push-fit connectors are provided to extend the gas tubing towards Swagelok fittings or Gas Analysis Chambers

**Optical Window Assembly:**

- a. Remove the PTFE Cap. Use the tool provided if too tight

- b. Place the gasket (Peel off the cover when you do it), and gaskets with 3 different thickness (0.2, 0.5, and 1.0 mm) are provided adding flexibility of adjusting the distance between the Optical Window and the Electrode Surface
- c. Place the 40 mm Optical Window, JS2 Quartz provided
- d. Tighten back the Optical Window Secure Screw. Tip: It's convenient to fill the electrolyte before assembling the Optical Window.



Now you are ready to start your experiment. Additional port is provided on the side. You can use it for sampling, temperature probing, gas purging, etc.

## 4. Related Products



### Potentiostat

Low Price Potentiostat for Cyclic Voltammetry and More

Product code: **T2006A1**



### Standard Electrochemical Cell

High Quality Standard Electrochemical Cell

Product code: **C2012A1**



### Gas Diffusion In-situ Raman Electrochemical Cell

Gas Diffusion In-situ Raman Electrochemical Cell for Raman Spectroscopy and Infrared Microscopes

Product code: **C2037G1**



### L-Shaped Detachable Glassy Carbon Electrode

L-Shaped Glassy Carbon Electrode with a PEEK Body

Product code: **C2040A1, C2040B1**