

# KamLAND Detector Design

- Scintillator

80% Paraffin Oil  
20% pseudocumene  
1.5 g/l PPO

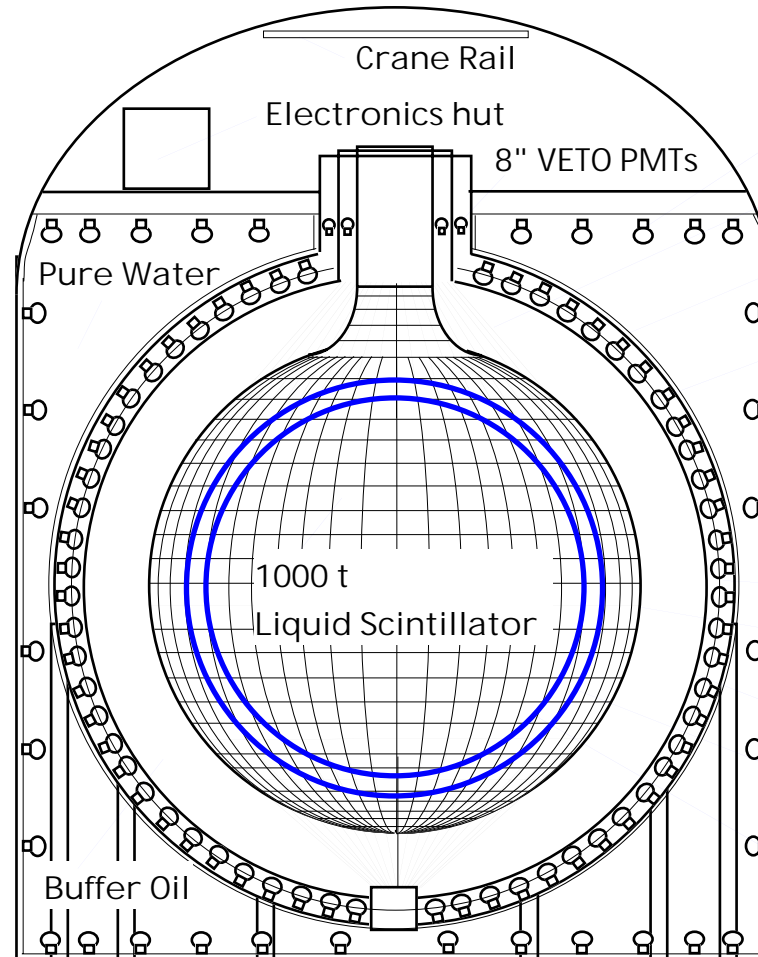
- 30% photocathode coverage

1325 fast 17" PMTs  
544 large area 20" PMTs

- Water Čerenkov veto detector

225 large area 20" PMTs

- Multi-hit, deadtime-less electronics



Anti 20" PMTs  
Kevlar Suspension Rope  
Tyvek Sheet/  
18m Stainless Tank  
17"/20" inner PMTs

Rock Wall/  
PE sheet/  
Radon Blocking Resin/  
Tyvek reflector

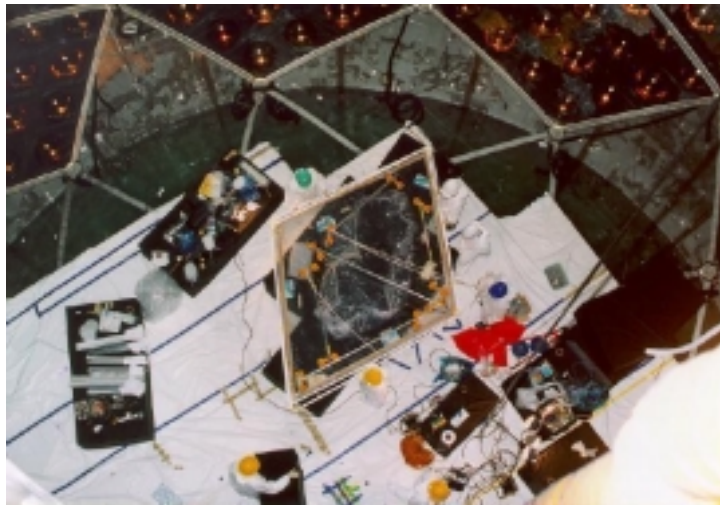
PET Black Sheet  
EVOH/3Nylon/EVOH  
13m Balloon  
Acrylic Sphere (3mm t)  
Fiducial Volume for  
Reactor Neutrinos (600t)  
Fiducial Volume for  
Solar Neutrinos (450t)

# KamLAND Construction: Sphere



Steel Sphere Constructed  
September-October 1999

# KamLAND Construction: ID



ID PMT Installation  
Summer 2000  
Completed September 28