

Specification for Hybrid Underwater Camera (HUC)

Range	≥ 12 AL (optical attenuation length for roundtrip transmission of laser-target-receiver) and ≥ 60 m for acoustical imager maximum range
Resolution	≥ 2.5 cm @ 60m range ≤ 1.5 ns pulse length ≤ 5 ns range gates, with option to step incrementally at 200ps
Active EO source	532nm, continuously 4 state polarization illumination with rectangular flat top intensity
Power	≥ 45 minutes for continuous operation in self-contained mode (helmet output & onboard recording)
Depth rating	≥ 150 m rated for ROV/standalone operation
Safety	Eye safe laser
Display	Helmet mounted monocular to display integrated laser and acoustical system real-time output, switchable with co-registered FOV
Data storage	Onboard, up to 45 minutes of storage; capable of output via Ethernet link
Control	Diver control via underwater navigator computer system; full control via Ethernet link to ship-based computer
Post-processing	System performance estimation software kit; time-resolved radiative transfer code for laser system point-spread and volumetric scattering computation; data fusion routine between acoustical and optical cameras