

Detailed Vessel Requirements R/V KILO MOANA

Vessel Description: General-purpose, “Global Class” research vessel.

Hull Form: SWATH

Length Overall: 186 feet

Beam: 88 feet

Draft: 25 feet

Hull material: Steel

Classification: ABS

Power Plant: Diesel-Electric

Other Capabilities: n/a

More information can be found by going to the following web site:

<http://www.soest.hawaii.edu/UMC/KiloMoana.htm>

Required Equipment: The system designed, fabricated, and delivered, shall include the following components. (EACH ITEM BELOW SHALL BE QUOTED SEPARATELY)

- 1) One (1) Handling Apparatus using the “Aft Deck Arrangement” per drawing C215-003 with the following items and requirements:
 - a. One (1) *Vertical Cast* docking head
 - b. One (1) *Towing* docking head
 - c. Electric deck winch for tensioning forward towing stay.

- 2) If possible, the vessel’s existing DYNACON brand CTD winch (0.322 cable) shall be upgraded to meet the following “Smart Winch” capabilities given in the Functional Requirements:
 - a. “Auto-Tension”
 - b. “Tow-Mode”
 - c. Hydraulic cable cutter

- 3) If possible, the vessel’s existing DYNACON brand CTD winch (0.322 cable) shall be upgraded to meet the following “Smart Winch” capability given in the Functional Requirements:
 - a. “Motion Compensation” via winch pay-in/pay-out

If the Vendor feels the above winch upgrades (Item 2 or 3) are either not feasible, not economical, or otherwise impractical, they should briefly describe the reasons why, and a new “Smart Winch” meeting the Functional Requirements and specific vessel requirements may be proposed.

Pricing for a new winch should include functions listed in Item #2 above, and function in Item #3 should be priced separately as an OPTION.

New winch should have LEBUS shell similarly grooved for 0.322 cable.

Control Station Locations: Three (3) sets of controls for the winch and apparatus as follows:

1. Local control near the winch and apparatus, with control of basic winch & crane functions only for emergency launch and recovery operations (no mo-comp ability).
2. Remote control on the aft control station on the 0-2 deck, which overlooks the main deck, with full mo-comp, auto-tension, crane and winch functions.
3. Remote control via a portable control anywhere on the aft/main deck, with full mo-comp, auto-tension, crane and winch functions.

Mating Foundations: Base of apparatus to mate to the existing crane pedestal as shown in “CranePedestalSpecs-KM.pdf” (See RFP website)

Electrical Service Available: 480 VAC, 3-phase, 60 Hz, 200 Amps.

Hydraulic Service Available: NONE. New handling apparatus to have own dedicated, internal hydraulic power unit (HPU) supplied by the Vendor. Electrical service available to HPU as given above.

Cooling Services Available: Raw sea water (6 GPM).

Alternates: Motion Compensation by “knotting boom” method may be proposed IN ADDITION TO “Winch pay-in/pay-out” as long as it meets the other details of the Functional Requirements and specific vessel requirements – particularly the weight budget. The originally requested method of motion compensation by “Winch pay-in/pay out” must be also quoted.

Other Detailed Requirements: Dimensional, weight, and Safe Working Load (SWL) requirements shall be as given in the table on the following page.

KILO MOANA

			Comments
Lifting Apparatus			
Weight Budget (lbs)		39,100	Existing Crane (34,000 lbs) + 15%
SWL in "Cast" Position (lbs)		12,700	
Minimum SWL in "Recovery" Position (lbs)		6,000	
Winch			
Weight Budget (lbs)		17,900	Existing Winch (16,270 lbs) + 10%. Includes weight of wire (10,000 m of 0.322 = ~5700 lbs) 0.322 conductor cable. Existing Winch <i>If constructed new. May be higher if required for mo-comp.</i> <i>If constructed new. May be higher if required for mo-comp.</i> <i>If constructed new. May be higher if required for mo-comp.</i>
Wire Length (m)		10,000	
SWL (lbs)		4,500	
SWL (lbs)		12,700	
Line Pull at Full Drum (lbs)		6,000	
Line Pull at Bare Drum (lbs)		12,700	
Freeboard	"F"	13'-0"	Not to exceed height Per pedestal drawing
Distance Inboard	"DI"	18'-0"	
Pedestal Height	"H1"	10'-2"	
Base Height	"H2"	21'-2"	
Pedestal Diameter	"PD"	3'-10"	
Slewing Range		270°	300° Rotational Range Preferred
Stowed Height		21'-2"	Not to exceed height
Height Above Surface	"HS"	2'-0"	Minimum
Height Above Deck	"HD"	6'-0"	
Reach at Recovery	"RR"	12'-0"	By Vendor Varies due to slew capability Minimum
Reach at Cast	"RC"	[TBD]	
Reach Inboard	"RI"	[Varies]	
Reach at Launch	"RL"	12'-0"	
Inner Boom Length	"L1"	[TBD]	By Vendor
Outer Boom Length	"L2"	[TBD]	
Length Extended	"L3"	[TBD]	
Total Reach	"L4"	[TBD]	
Inner Diameter	"D1"	24"	For either 12, 24 or 36 bottle rosette
Outer Diameter	"D2"	36"	