

# Proposal

Krieg Richards  
Application Engineer  
Baldor•Reliance  
6480 Flotilla Street.  
City of Commerce, CA 90040  
323-724-6771  
www.baldor.com

Date: June 7<sup>th</sup>, 2010

Revision (4)

**To: Gary Tofanelli**

Baldor will supply ZD22H420-EL drives per Canada-France-Hawaii Telescope Corporation specification:

Included:

**Enclosure:**

- NEMA 1 Enclosure with Fans & Filters
- NEMA 1 Enclosure (CABINET) Shall be self supporting with legs or other means of support
- The cabinet legs and or base to be fitted with casters or wheels for transportation of the cabinet during integration.
- NEMA 1 Enclosure to be fitted with Main Molded Case Circuit Breaker (MCB) door and or side panel disconnect.

**Control Panel Configuration:**

- Power distribution terminal block on the load side of the main circuit breaker (MCB) for **three (3)** branch circuit **each** with:
- 50 Amp molded case circuit breaker (MCB) for inverse fault protection (loss of line or line short circuit line when drive is regenerating)
- Thermostatically controlled drive input contactor to prevent power up at below -10 deg C
- 3% Input line reactors
- ZD22H420-EL drive
- Output motor load reactors
- Solid state motor overload relay
- Vector motor thermal switch (T'stat) pilot circuit
- Inverter section keypad mounted internally.
- Converter section keypad mounted internally.
- Inverter and Converter keypads labeled for identification purposes
- Master pulse reference cards installed and wired between controls factory wired and programmed for : Arbitrarily chosen one Master drive in bipolar with a command source of +-10 voltsTwo (2) followers to be in process control for torque analog command select for load sharing
- Baldor serial interface expansion card part # EXB001A01 installed on each control for customer use.

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- Drive enclosure pre-warm control circuit for enclosure space heater to raise internal cabinet temperature to -10°C before drive power up.
- Main control power 120VAC transformer
- Door mounted HOA - Selector switch for independent drive operation
- Individual door mounted "Drive Run" pilot lights with on/off selector switches.
- Individual door mounted "Drive Fault" pilot lights with on/off selector switches.
- Top of cabinet mounted warning system horn. (see pendant for operation)
- Connectivity interface for hand held operator pendant allowing for "Hand" manual operation of each control independently.

**Remote Operator Pendant:**

- Speed Command Potentiometer
- Customer to provide +- 10 Volt source for bipolar speed operation for use with potentiometer.
- On / Off e-stop to apply or remove power from selected control for manual operation
- Enable and Disable selector switch – System coasts to a stop
- Forward and Reverse direction bit to be closed when drive is enabled.
- Momentary push button to activate warning system horn
- Lock out key to disable auto or manual operation when pendant is connected.
- 100 Ft cord with panel mating connector

**ARO -Delivery:** 1-2 Weeks for engineering and 4-5 weeks manufacturing after customer approval of engineering documents.



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**Motor:**

**Baldor RPM AC series**

20HP, 1800 RPM, 2500 RPM max, Frame: FL2162C, TEFC, 460 VAC

**Stock motor Catalog # ZDFRPM21204C**

(Special pricing for motor based on package price when purchased with the controls.  
(1) single motor purchase available at package price for use as customers test unit and or spare)

**Spare Control:**

Baldor 22H Series Line Regenerative Control.

**Baldor control catalog # ZD22H420-EL**

**F.O.B Shipping Point**

**1500lbs or more Baldor Electric will prepay and absorb to the first U.S. Mainland destination.**

**Proposal valid for 90 days**

*Krieg Richards*

Krieg Richards  
Application Engineer  
Sales  
Baldor•Reliance

Appendix Q

Kaman Industrial Technologies

EMAILED



Q U O T A T I O N

FROM NUMBER W956082

3269 KOAPAKA STREET

PAGE 1 OF 1 NUMBER W956082

HONOLULU, OAHU HI 96819

T  
O  
CANADA-FRANCE-HAWAII  
65-1238 MAMALAHOA HWY  
KAMUELA HI 96743

SHIP TO

CANADA-FRANCE-HAWAII  
TELESCOPE CORPORATION  
65-1238 MAMALAHOA HWY  
KAMUELA HI 96743

ATTN: ATTN STEVE BAUMAN:

ACCOUNT NO.	SALESMAN	SHIP VIA	SHIP DATE	TAX	BRANCH NO.	PO / TAG ORDER NUMBER	
Z23441	H16	DIRECT	09-JUN-10	NYYY	00851		
SEQ.	ITEM DESCRIPTION	ORDERED	BACK ORDERED	SHIPPED	U/M	PRICE	EXTENSION
1	***** QUOTE ***** ***** QUOTE ***** BAL ZD22H420EL PACKAGE_DRIVE PANEL PACKAGE 0	1	0	0	EA	43860.530	43,860.53
	ATTN STEVE BAUMAN: OUR NEWEST REVISION OF THE DRIVE PACKAGE QUOTE, SPECIFICATIONS ARE AS STATED BY KRIEG RICHARDS SENT TO YOU ON JUNE 7, 2010						
4	BAL ZDFRPM21204C SPECIAL_MOTOR PACKAGE 0	3	0	0	EA	3096.000	9,288.00
	PRICING FOR MOTOR BASED ON PACKAGE PRICE WHEN PURCHASED WITH THE CONTROLS						
6	BAL ZDFRPM21204C SPECIAL_MOTOR PACKAGE 0	1	0	0	EA	3096.000	3,096.00
	SINGLE MOTOR PURCHASE AVAILABLE AT PACKAGE PRICE FOR YOUR TEST UNIT OR SPARE						
8	BAL ZD22H420-EL_AC VECTOR CONTROL 460V 20HP RGN 0	1	0	0	EA	8660.000	8,660.00
	PRICES PLUS FREIGHT AND TAX. ORDER WILL BE NON CANCELLABLE, NON RETURNABLE ONCE APPROVED						
INITIAL: GNT		BUYER: N STEVE BAUMAN		RESALE:		TAX 3,058.30	
QUOTE EXPIRES: 14-JUL-10		CUSTOMER TELEPHONE: (808) 885-7944		BUS: (808) 836-1371 FAX: (808) 833-0538		TOTAL 67,962.83	

TRANSACTION IS SUBJECT TO THE TERMS AND CONDITIONS ON THE ACCOMPANYING EMAILED TERMS AND CONDITIONS DOCUMENT, INCLUDING THE DISCLAIMER OF WARRANTY. MATERIAL MAY NOT BE RETURNED WITHOUT PRIOR AUTHORIZATION. QUOTES ARE SUBJECT TO CREDIT APPROVAL FOR RELIAMARK BRANDED PRODUCTS LIMITED WARRANTY. PLEASE VISIT WWW.RELIAMARK.NET/WARRANTY.

Kaman Industrial Technologies provides innovative solutions to make our customers more productive, competitive and profitable. Material Safety Data Sheet (MSDS) available at <http://www.kamandirect.com/msds.htm>

## Appendix Q

### PROPOSAL CONDITIONS

The prices and terms on this proposal are not subject to verbal changes or any other agreements unless approved in writing by the Home Office of the Seller. All proposals and agreements are contingent upon strikes, accidents, fires, availability of materials, and all other causes beyond our control. Prices in effect at time of shipment shall be applicable.

Stenographic errors are subject to correction. Purchaser assumes liability for patent and copyright infringements when goods are made to Purchaser's specifications.

Conditions not specifically stated herein shall be governed by established trade customs. Terms inconsistent with those stated herein, which may appear on Purchaser's formal order, will not be binding on the Seller.

For ReliaMark branded products limited warranty, please visit [www.reliamark.net/warranty](http://www.reliamark.net/warranty).