

Custom Cable

Supplier:	Cost/ft (USD)	Qty (ft)	Total Cost (USD)	Lead Time
KC Electronics (Via Aerospace Wire and Cable)	\$5.59	400	\$2,236.00	12 Wks (Cable Order + Assembly Combined)
Allied Electronics (Via Alpha-Wire)	\$9.20	400	\$3,680.00	7-8 Wks (Cable Order Only)

Connector Parts (Backshell, pins)

Supplier:	Cost/Cable	Cables	Total Cost	Lead time
In-House Purchase	\$27.55	48	\$1,322.40	In stock/normally stocking parts - immediate
KC Electronics	\$18.00	48	\$864.00	In stock/normally stocking parts - immediate

Assembly/Labor Cost

Supplier:	Cost/Cable	Cables	Total Cost	Lead Time
KC Electronics (Including point-to-point testing)	\$175.00	48	\$8,400.00	12 Wks for Cable Order + Assembly, combined
Sub-Sem (Does not include point to point testing)	\$83.70	48	\$4,017.60	3-4 Wks for Assembly Only

It should be noted that KC Electronics quoted us for the purchase of the cable, all parts, and labor as a package. I'm not sure if his rates will change if we order, e.g. cable only through him, and use Sub-Sem for assembly.

NOTES:

- 1. REMOVE 3" OF JACKET FROM T-BOARD END OF WIRES, STRIP CONDUCTORS 1/4", TIN AND HEATSHRINK LABEL 1 1/2" FROM END.
- 2. CABLES WILL BE 8' LONG +/-1" FROM CONNECTOR TO TIP OF TINNED WIRE.
- 3. QUANTITY REQUIRED: 48

REVISIONS						
REV	ZONE	ECN NO.	DESCRIPTION	BY	DATE	APP

(x) --- DENOTES PAIR NUMBER

P1

T-BBOARD

- LABEL: W44 (1)
- LABEL: W46 (1)
- LABEL: W18 (2)
- LABEL: W19 (2)
- LABEL: W14 (3)
- LABEL: W15 (3)
- LABEL: W10 (4)
- LABEL: W11 (4)
- LABEL: W7 (5)
- LABEL: W9 (5)
- LABEL: W52 (6)
- LABEL: W50 (6)
- LABEL: W54 (7)
- LABEL: W53 (7)
- LABEL: W58 (8)
- LABEL: W57 (8)
- LABEL: W61 (9)
- LABEL: W62 (9)
- LABEL: W20 (10)
- LABEL: W22 (10)
- LABEL: W24 (11)
- LABEL: W26 (11)
- LABEL: W3 (12)
- LABEL: W1 (12)
- LABEL: W16 (13)
- LABEL: W17 (13)
- LABEL: W12 (14)
- LABEL: W13 (14)
- LABEL: W40 (15)
- LABEL: W37 (15)
- LABEL: W36 (16)
- LABEL: W41 (16)

COMPONENT 1: 16 PAIRS
 28 AWG (SOLID)
 0.006" WALL NOM. FEP INSULATION
 16 TWISTS/FOOT PER PAIR
 2 CONDUCTORS PER PAIR

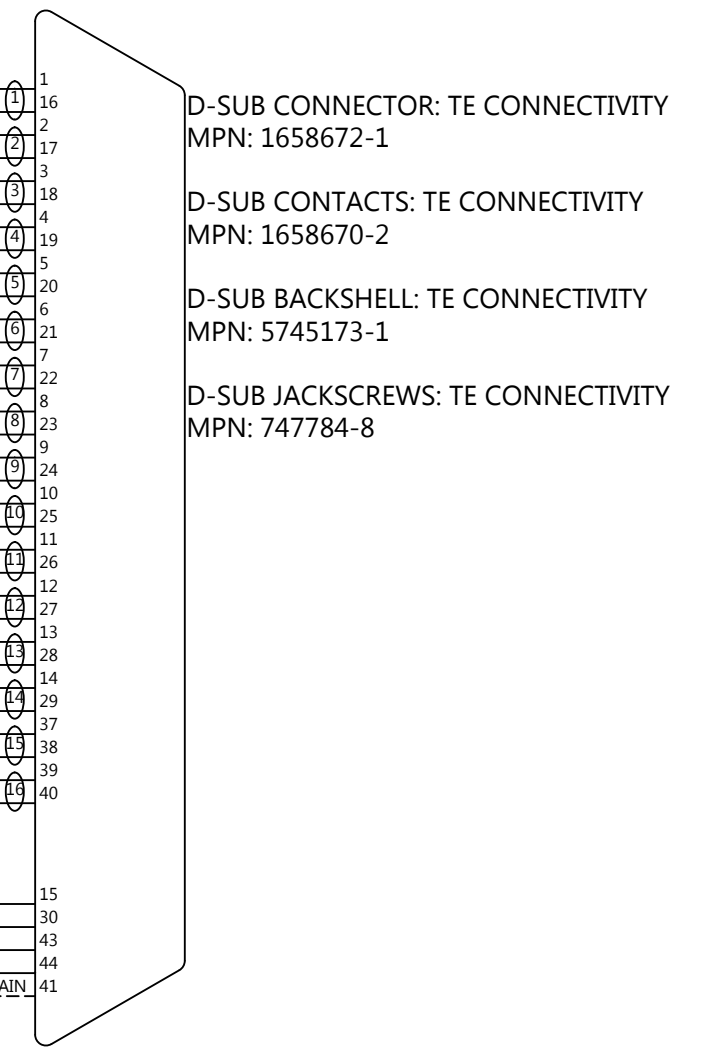
- LABEL: W5
- LABEL: W4
- LABEL: W6
- LABEL: W8
- LABEL: W2 DRAIN

COMPONENT 2: 4 CONDUCTORS
 22 AWG STRANDED (7/30)
 0.010" WALL NOM. FEP INSULATION

CABLE ASSEMBLY:
 (16) 28 AWG PAIRS + 4/C 22 AWG
 BUNCH CABLED

DRAIN: 22 AWG (7/30) T.C. (TOUCHING FOIL)
 SHIELD: ALUMINUM/MYLAR (100% COVERAGE, 25% MIN. OVERLAP, FOIL FACING IN)
 JACKET: VIOLET FEP

REQUIRED RATINGS:
 CMR OR EQUIVALENT TRAY RATING



DRAIN: 22 AWG (7/30) T.C. (TOUCHING FOIL)
 SHIELD: ALUMINUM/MYLAR (100% COVERAGE, 25% MIN. OVERLAP, FOIL FACING IN)
 JACKET: VIOLET FEP

EXPERIMENT	OUTSTANDING ECN NUMBERS	INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989			BROOKHAVEN NATIONAL LABORATORY UPTON, N.Y. 11973			
		UNLESS OTHERWISE SPECIFIED			DRAWN BY: M.CAPOTOSTO DATE: 7/22/2019	TITLE: STAR_FST STAR FST PROPOSED CABLE FOR PRODUCTION		
NA FINISH		DIMENSIONS ARE IN INCHES DECIMAL TOLERANCES .X ± .06 .XX ± .02 .XXX ± .005 ANGULAR TOLERANCE ± 1°	BREAK SHARP EDGES MAX. .03 MIN. .01	DESIGN APPROVAL	SIZE: B	DRAWING NUMBER: FST_PROPOSED_CUSTOM_CABLE		REV. A
	CHECKED BY ENGINEER APPROVAL SUPERVISOR APPROVAL Q.A. APPROVAL APPVL APPVL			Q.A. CATAGORY: NA		SCALE: 1/X	WEIGHT: NA	SHEET 1 OF 1

QUOTE

KC Electronics

186 North Belle Mead Rd
 East Setauket, NY 11733
 PH: 631-689-2200 FX: 689-2434
kevin@kcelectronics.com

Quote# 19-0717A
 DATE July 18, 2019
 CUSTOMER ID
 EXPIRATION DATE 8/17/2019

TO Mike Capotosto
 Brookhaven National Labs

SALESPERSON	JOB	PAYMENT TERMS	DUE DATE
Kevin Rotunno		NET 30	

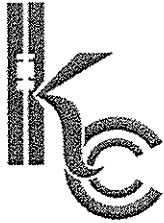
QUANTITY	DESCRIPTION	UNIT PRICE	LINE TOTAL
48.00	CAB-0493 Star FST cable terminated w/ 44 pin D-Sub one end one end stripped and tinned. Point to point continuity test cable (16 pair awg 28/1 TPC + 4 cond awg 22/7 TPC) (overall foil shield w/ drain FEP/FEP Violet)	237.7200	11,410.56
	Breakdown:		
	Custom Cable = \$5.59/ft x 8 = \$44.72		
	1658672 = \$4.00ea		
	1658670-2 = \$.08ea x 50 = \$4.00		
	5745173-2 = \$6.00ea		
	747784-8 = \$4.00ea		
	Labor = \$175.00ea		
	Delivery = 12 weeks		
TOTAL \$			11,410.56

Quotation prepared by: Kevin Rotunno

This is a quotation on the goods named, subject to the conditions noted below:
 (Describe any conditions pertaining to these prices and any additional terms of the agreement.
 You may want to include contingencies that will affect the quotation.)

To accept this quotation, sign here and return: _____

THANK YOU FOR YOUR BUSINESS!



Electronic Distributors, Inc.

186 North Belle Mead Rd
 East Setauket, NY 11733-4046
 Tel: (631)689-2200 · Fax: (631)689-2434

DESCRIPTION

2 Components (4 Conds AWG 22/7 TC, 16 Pairs AWG 28/Solid TC)
 Overall Foil Shield FEP/FEP Violet

PHYSICAL PROPERTIES - COMPONENT 1

Conductors			Insulation			
# Cond.	AWG	Material	Material	Wall	Finished OD	Color Code
4	22/7x30	Tinned Copper	FEP	.010"	.050"	Black / Red / White / Green /

PHYSICAL PROPERTIES - COMPONENT 2

Pairs			Insulation				
# Pair	AWG	Material	Material	Wall	Finished OD	Color Code	Lay
16	28/ Solid	Tinned Copper	FEP	.006"	.025"	Chart 3	0.75" Lay on Pair

Outer Shield Material			Drain Wire	
Layer Type	Material	Coverage	AWG	Material
Overall Foil Shield	Alum / Mylar	100%	22/7x30	Tinned Copper

Outer Jacket Material			Cabling		
Jacket Material	Color	Wall	Overall O.D.	Lay	
FEP	Violet	.010"	.295" Nom. (.320" Max.)	4" Lay on Component 1 & 2 with Clear Mylar	

MECHANICAL PROPERTIES

Operating Temp	Total Weight	Bend Radius
Rated -80C to 200C	55 lbs / m	10 X OD

ELECTRICAL PROPERTIES

Max. Operating Voltage
N.A.

INDUSTRY APPROVALS AND COMPLIANCE

Standards & Environmental Programs
Reach / RoHS Compliant Yes

From: JULIA.KENNA@ALLIEDELEC.COM
To: [Capotosto, Michael \(CONTR\)](#)
Cc: JULIA.KENNA@ALLIEDELEC.COM; Julia.Kenna@alliedelec.com
Subject: Allied Electronics & Automation - Quotation (8152862) - BNL
Date: Wednesday, July 17, 2019 5:09:28 PM

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need help? call (866) 433-5722

Quotation

July 17, 2019

Your quote has not yet been posted online, please review below.

Salesperson Notes: 50DAYS TO BUILD. NCNR/CUSTOM (FRT FREE)

Quote Information

Valid Until: 8/31/2019
Prepared On: 7/17/2019
Prepared By:
Julia Kenna
julia.kenna@alliedelec.com
(732) 846-4271

Billing Information

PO Number: ALPHA
Account Number: 0010001124

Billing Address

Brookhaven Science Associates

Po Box 5000
Upton, NY 11973-5000
US

Contact Information

Requested By: Mike Capotosto
Phone Number: (631) 344-8005
Email: capotosto@bnl.gov


Shipping Information

Ship Method: Pending
Order Type: Quote

Shipping Address

Bnl
98 Rochester St
Upton, NY 11973
US

Special Instructions:

Line #		Qty.	Price Per Unit (USD)	Total (USD)
10	 Generic Generic Item	400	\$9.200	\$3,680.00
	Mfr. Part #: 19-1994 VI199 Allied Stock #: G1003670 Customer Part #: 50DAAYS TO BUILD: NCNR (NO FRT)			

In-Stock*: 0

Unit: Each

Non Cancelable Non Returnable (NCNR) part. Please see [Terms of NCNR](#).

Subtotal†: \$3,680.00



*In Stock quantities reflect available inventory at the time this quote was issued and may change.

†Subtotal is in specified currency and does not include shipping, tax, other handling fees or insurance charges. © Allied Electronics, Inc. 2019 All rights reserved.

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Coast™ Custom Cable

Tel: (908) 925-8000 E-mail: coast@alphawire.com

IP Owner: **Brookhaven National Lab**

End Use Customer: **Brookhaven National Lab**

Distributor Name: **Allied Electronics**

Part Number: **19-1994 VI199**

Revision: **None**

Customer P/N: **N/A**

Customer Revision: **N/A**

Cable Specification

36/C Composite Shielded Cable

CONDUCTORS

Wire Size & Type: 28 AWG Solid Tinned Copper
Nom. Wire Diameter: 0.013
Spark Test: 3000Vac
Insulation Type: FEP
Nom. Ins Thickness: 0.006
Conductor Diameter: **0.025**
Tolerance (+/-): 0.002
Colors: See Twisted Pairs

CONDUCTORS

Wire Size & Type: 22 AWG (7/30) Tinned Copper
Nom. Wire Diameter: 0.030
Spark Test: 3000Vac
Insulation Type: FEP
Nom. Ins Thickness: 0.010
Conductor Diameter: **0.050**
Tolerance (+/-): 0.002
Colors: Black, Brown, Red, Orange

SUB-ASSEMBLY Twisted Pairs

Black Paired With Red	Red Paired With White
Black Paired With White	Red Paired With Blue
Black Paired With Green	Red Paired With Yellow
Black Paired With Blue	Red Paired With Brown
Black Paired With Brown	Red Paired With Orange
Black Paired With Yellow	Green Paired With Blue
Black Paired With Orange	Green Paired With White
Red Paired With Green	Green Paired With Brown

ASSEMBLY

Core Cabling: (16) 28 AWG Pairs + 4/C 22 AWG Bunch Cabled
Filler: As Required
Drain: 22 AWG (7/30) Tinned Copper (Touching Foil)
Shield: Aluminum/Mylar (100% Coverage, 25% Min. Overlap, Foil Facing **IN**)

JACKET

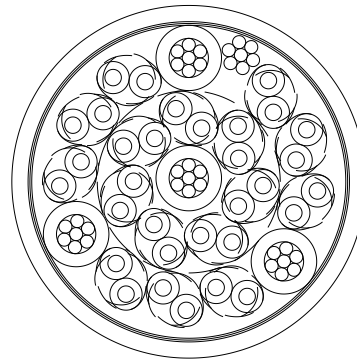
Material Type: Violet FEP (will show convolutions of underlying wire forms)
Nom. Jkt Thickness: 0.013
Cable Diameter: **0.270**
Tolerance (+/-): 0.015

TESTS

Test 1: Continuity
Test 2: Shorts
Test 3: Physical/Dimensional

MISCELLANEOUS

Voltage: 300V_{RMS}
Temperature: -80°C to 150°C
Put Ups: Bulk, May Contain Multiple Lengths Per Reel
Reel: Wood or Plastic
Colors: Munsell® Wire & Cable Limits of Deviation



ENVIRONMENTAL COMPLIANCE

RoHS: European Directive 2011/65/EU (ROHS2) and amending Directive 2015/863/EU
REACH: Regulation (EC 1907/2006)

APPROVALS

Final Product: None

Note: Cable drawing is representative only and may not match the specific configuration of the final product.

Dimensions in inches unless otherwise specified

Prepared By: Mike Cother

Date: 7/10/2019

Customer Approval: _____

Title: _____

Date: _____

PROPRIETARY NOTICE

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QUOTATION

P. O. Box 161 Crystal Lake, IL 60039-0161
PH: 815-459-4139; FX: 815-479-5075; Toll Free: 800-435-6130

COMPANY: **STAR - Brookhaven National Labs.**

SUB-SEM QUOTATION NO: StarBNL190723
DATE: 23-Jul-19
QUOTATION EXPIRATION DATE: 23-Aug-19

ATTENTION: **Mike Capotosto**

Pricing is valid for 30 days. Quotations older than 30 days may require updating due to fluctuating material costs.

Dear Mike,
Sub-Sem is pleased to submit the following quotation.

SALES REPRESENTATIVE: Jackie Farr
Pete Jensen

SUB-SEM NO.	PART NUMBER/DESCRIPTION	QUOTE QUANTITY	MINIMUM RELEASE	STANDARD PACKAGE	PRICE/EA	LEAD TIME
to be assigned	<p>STAR FST custom cable Rev A Custom cable to be supplied by the customer at no charge.</p> <p>*Lead time after receipt of custom cable.</p> <p><i>Assembled in the USA</i></p>	48	48		\$83.70	3-4 wks*

Pricing is valid for 30 days. Quotations older than 30 days may require updating due to fluctuating material costs.

IF YOU HAVE ANY QUESTIONS PLEASE CONTACT ME.
THANK YOU FOR THIS OPPORTUNITY!

SINCERELY,
Pete Jensen
Director of Sales
Sub-Sem Inc.
(414) 975-9932 Cell
(815) 261-3008 Direct Office
pjensen@subsem.com

TERMS AND CONDITIONS:

- Standard Terms are Net 30 days; F.O.B. Shipping point.
- Custom assemblies are not returnable. Cancellation or quantity reductions may be subject to cancellation and/or restocking charges.
- Credit card orders subject to 3% service charge.