



WICHITA STATE UNIVERSITY

CONTRACT AWARD

Date of Award: July 12, 2019
Contract Number: W0001566
Procurement Officer: Robby Murray
Telephone: (316)978-5185
E-mail Address: robby.murray@wichita.edu

Item: Strain Gages and Associated Accessories

Department: Wichita State University, NIAR
1845 Fairmount, Campus Box 93
Wichita, KS 67260
Attn: Royal Lovingfoss & Larry Braden
Phone: 316-978-5317 & 316-978-8222
Email: rlovingfoss@niar.wichita.edu & lbraden@niar.wichita.edu

Period of Contract: November 1, 2020 through October 31, 2024,
Final Renewal Period

Table with 2 columns: Contractor: Hottinger Baldwin Measurement, Inc. (HBM) and Contractor: Vishay Measurements Group, Inc., dba Micro-Measurements. Includes contact information for Brian Lovdahl and Jenny Royal.

Pricing for both companies is attached.

HBM

REVISED BID FORM

Composites

Class / Orientation	Manufacturer ID:
Uniaxial - Narrow	CEA-00-250UN-350 (equivalent or better specifications) HBM K-216.31-2040 - NIAR specified gage
Uniaxial - STD	CEA-00-250UW-350 (equivalent or better specifications) HBM K-216.31-2041 - NIAR specified gage
Uniaxial - Custom	CEA-00-61411-350 (equivalent or better specifications) K-216.31-2042 - NIAR specified gage
Biaxial - STD	CEA-00-250UT-350 (equivalent or better specifications) K-216.31-2205 - NIAR specified gage
Biaxial - Shear	EA-00-125TK-350/E (equivalent or better specifications) K-216.31-2205 - NIAR specified gage

Request for Proposal 80001566

Business Procurement Cards, credit cards accepted for all orders

Usage / qtr	Pricing per 100 pieces (BPA)	Minimum Order Qty
≤ 500	\$670.00	MOQ 1 BPA
≈ 2000	\$670.00	MOQ 1 BPA
≈ 1000	\$700.00	MOQ 1 BPA
≈ 1000	\$1,790.00	MOQ 1 BPA
≤ 500	\$1,990.00	MOQ 1 BPA

ASTEC

Class / Orientation	Manufacturer ID
Axial, Narrow	CEA-00-125UN-350 (equivalent or better specifications)
	CEA-05-125UN-350 (equivalent or better specifications)
	CEA-06-125UN-350 (equivalent or better specifications)
	CEA-13-125UN-350 (equivalent or better specifications)
Axial, Narrow	CEA-00-250UN-350 (equivalent or better specifications)
	CEA-00-250UN-350 (equivalent or better specifications)
	CEA-05-250UN-350 (equivalent or better specifications)
	CEA-06-250UN-350 (equivalent or better specifications)
	CEA-13-250UN-350 (equivalent or better specifications)
Axial, Wide	CEA-00-125UW-350 (equivalent or better specifications)
	CEA-05-125UW-350 (equivalent or better specifications)
	CEA-06-125UW-350 (equivalent or better specifications)
	CEA-13-125UW-350 (equivalent or better specifications)
	CEA-00-250UW-350 (equivalent or better specifications)
Axial, Wide	CEA-00-250UW-350 (equivalent or better specifications)
	CEA-05-250UW-350 (equivalent or better specifications)
	CEA-06-250UW-350 (equivalent or better specifications)
	CEA-13-250UW-350 (equivalent or better specifications)
	LY48-8/350
	HBM K-216.31-2041

HBM Gage HBM Webshop	Pricing per package	Pieces per pkg	Minimum Order Qty
1-LY48-8/350	\$60.60	10	MOQ 3 pkg
1-LY47-8/350	\$60.60	10	MOQ 3 pkg
1-LY41-8/350	\$50.40	10	MOQ 1 pkg
1-LY43-8/350	\$50.40	10	MOQ 1 pkg
1-LY46-8/350	\$60.60	10	MOQ 3 pkg
HBM K-216.31-2040	\$670.00	100	MOQ 1 BPA
1-LY47-8/350	\$60.60	10	MOQ 3 pkg
1-LY41-8/350	\$50.40	10	MOQ 1 pkg
1-LY43-8/350	\$50.40	10	MOQ 1 pkg
1-LY46-8/350	\$60.60	10	MOQ 3 pkg
1-LY47-8/350	\$60.60	10	MOQ 3 pkg
1-LY41-8/350	\$50.40	10	MOQ 1 pkg
1-LY43-8/350	\$50.40	10	MOQ 1 pkg
LY48-8/350	\$60.60	10	MOQ 3 pkg
HBM K-216.31-2041	\$670.00	100	MOQ 1 BPA
1-LY47-8/350	\$60.60	10	MOQ 3 pkg
1-LY41-8/350	\$50.40	10	MOQ 1 pkg
1-LY43-8/350	\$50.40	10	MOQ 1 pkg

HBM

Rosette	CEA-08-125UR-350 (equivalent or better specifications)	1-RY88-3/350	\$99.00	5	MOQ 3 pkg
	CEA-05-125UR-350 (equivalent or better specifications)	1-RY87-3/350	\$99.00	5	MOQ 3 pkg
	CEA-06-125UR-350 (equivalent or better specifications)	1-RY81-3/350	\$99.00	5	MOQ 3 pkg
	CEA-13-125UR-350 (equivalent or better specifications)	1-RC83-3/350	\$99.00	5	MOQ 3 pkg
Rosette	CEA-08-250UR-350 (equivalent or better specifications)	1-RY86-6/350	\$103.20	5	MOQ 3 pkg
	CEA-05-250UR-350 (equivalent or better specifications)	1-RY87-6/350	\$103.20	5	MOQ 3 pkg
	CEA-06-250UR-350 (equivalent or better specifications)	1-RY81-6/350	\$84.60	5	MOQ 1 pkg
	CEA-13-250UR-350 (equivalent or better specifications)	1-RY83-6/350	\$103.20	5	MOQ 3 pkg
Bi-axial Rosette	CEA-00-125UT-350 (equivalent or better specifications)	1-XY86-3/350	\$79.80	5	MOQ 3 pkg
	CEA-05-125UT-350 (equivalent or better specifications)	1-XY87-3/350	\$79.80	5	MOQ 3 pkg
	CEA-06-125UT-350 (equivalent or better specifications)	1-XY81-3/350	\$66.60	5	MOQ 1 pkg
	CEA-13-125UT-350 (equivalent or better specifications)	1-XY83-3/350	\$66.60	5	MOQ 1 pkg
Bi-axial Rosette	CEA-00-250UT-350 (equivalent or better specifications)	1-XY86-6/350	\$79.80	5	MOQ 3 pkg
	CEA-05-250UT-350 (equivalent or better specifications)	K-216-31-2205	\$1,790.00	100	MOQ 1 BPA
	CEA-06-250UT-350 (equivalent or better specifications)	1-XY87-6/350	\$79.80	5	MOQ 3 pkg
	CEA-13-250UT-350 (equivalent or better specifications)	1-XY81-6/350	\$66.60	5	MOQ 1 pkg
		1-XY83-6/350	\$66.60	5	MOQ 1 pkg
Fatigue Rated Rosette	WK-00-125RA-350 (equivalent or better specifications)	1-RM86-3/350GE	\$151.20	5	MOQ 3 pkg
	WK-05-125RA-350 (equivalent or better specifications)	1-RM87-3/350GE	\$151.20	5	MOQ 3 pkg
	WK-06-125RA-350 (equivalent or better specifications)	1-RM81-3/350GE	\$132.00	5	MOQ 1 pkg
	WK-13-125RA-350 (equivalent or better specifications)	1-RM83-3/350GE	\$151.20	5	MOQ 3 pkg
Fatigue Rated Rosette	WK-00-250RA-350 (equivalent or better specifications)	1-RM86-6/350GE	\$153.60	5	MOQ 3 pkg
	WK-05-250RA-350 (equivalent or better specifications)	1-RM87-6/350GE	\$153.60	5	MOQ 3 pkg
	WK-06-250RA-350 (equivalent or better specifications)	1-RM81-6/350GE	\$135.00	5	MOQ 1 pkg
	WK-13-250RA-350 (equivalent or better specifications)	1-RM83-6/350GE	\$153.60	5	MOQ 3 pkg
Fatigue Rated Axial	WK-00-125AD-350 (equivalent or better specifications)	1-LM16-3/350GE	\$100.20	10	MOQ 3 pkg
	WK-05-125AD-350 (equivalent or better specifications)	1-LM17-3/350GE	\$100.20	10	MOQ 3 pkg
	WK-06-125AD-350 (equivalent or better specifications)	1-LM11-3/350GE	\$87.00	10	MOQ 1 pkg
	WK-13-125AD-350 (equivalent or better specifications)	1-LM13-3/350GE	\$100.20	10	MOQ 3 pkg
Fatigue Rated Axial	WK-00-250BG-350 (equivalent or better specifications)	1-LM16-6/350GE	\$102.00	10	MOQ 3 pkg
	WK-05-250BG-350 (equivalent or better specifications)	1-LM17-6/350GE	\$102.00	10	MOQ 3 pkg
	WK-06-250BG-350 (equivalent or better specifications)	1-LM11-6/350GE	\$88.80	10	MOQ 1 pkg
	WK-13-250BG-350 (equivalent or better specifications)	1-LM13-6/350GE	\$102.00	10	MOQ 3 pkg
Quick acting adhesive	Quick acting adhesive	1-270			
Cold cure adhesive	2-component adhesive, epoxy, cold curing	1-Y280	\$34.80		
Hot cure adhesive	Discontinued - reference 1-EP310N	1-EP310S	\$104.40		
Hot cure adhesive	2-component adhesive, epoxy, hot curing	1-EP310N	\$104.40		

BID FORM

NIAR Composites Estimated Annual Usage (EAU)

Class / Orientation	Manufacturer ID	≈ Usage / qtr.	Pricing (per package of 5 gages)
Uniaxial – Narrow	CEA-00-250UN-350	≤ 500	\$ 31.29 (package of 5)
Uniaxial – STD	CEA-00-250UW-350	≈ 2000	\$ 34.30 (package of 5)
Uniaxial - Custom	CEA-00-G1411-350	≈ 1000	\$ 35.60 (package of 5)
Biaxial – STD	CEA-00-250UT-350	≈ 1000	\$ 92.61 (package of 5)
Biaxial – Shear	EA-00-125TK-350/E	≤ 500	\$ 64.68 (package of 5)

Micro-Measurements is offering as an alternative the following gages with improved encapsulation withstanding better soaked humidity conditions (see technical test report and datasheet in the technical proposal):

Class / Orientation	Manufacturer ID	≈ Usage / qtr.	Pricing (per package of 5 gages)
Uniaxial – Narrow	C180923A (CEA-00-250UN-350 with improved encapsulation)	≤ 500	\$ 34.42 (package of 5)
Uniaxial – STD	C180925A (CEA-00-250UW-350 with improved encapsulation)	≈ 2000	\$ 37.73 (package of 5)
Uniaxial - Custom	C180930A (CEA-00-G1411-350 with improved encapsulation)	≈ 1000	\$ 39.21 (package of 5)
Biaxial – STD	C180929A (CEA-00-250UT-350 with improved encapsulation)	≈ 1000	\$ 101.92 (package of 5)
Biaxial – Shear	C180930B (EA-00-125TK-350/E with improved encapsulation)	≤ 500	\$ 71.08 (package of 5)

NIAR ASTEC strain gages used include: (XX equals either 00, 05, 06, or 13)

Class/Orientation	Manufacturer ID	Pricing (per Package of 5 gages)
Axial, Narrow	CEA-XX-125UN-350	\$ 25.41 (package of 5)
Axial, Narrow	CEA-XX-250UN-350	\$ 31.29 (package of 5)
Axial, Wide	CEA-XX-125UW-350	\$ 34.30 (package of 5)
Axial, Wide	CEA-XX-250UW-350	\$ 34.30 (package of 5)
Rosette	CEA-XX-125UR-350	\$ 107.31 (package of 5)
Rosette	CEA-XX-250UR-350	\$ 120.19 (package of 5)
Bi-axial Rosette	CEA-XX-125UT-350	\$ 79.10 (package of 5)
Bi-axial Rosette	CEA-XX-250UT-350	\$ 92.61 (package of 5)
Fatigue Rated Rosette	WK-XX-250RA-350	\$ 138.25 (package of 5)
Fatigue Rated Rosette	WK-XX-125AD-350	\$ 166.95 (package of 5)
Fatigue Rated Axial	WK-XX-250BG-350	\$ 57.60 (package of 5)
Fatigue Rated Axial	WK-XX-250BG-350	\$ 84.16 (package of 5)

Micro-Measurements is offering as an alternative the following gages with improved encapsulation withstanding better soaked humidity conditions (see technical test report and datasheet in the technical proposal):

Class/Orientation	Manufacturer ID (Z - STC code, either: A for 00, B for 05, C for 06, D for 13)	Pricing (per Package of 5 gages)
Axial, Narrow	C180922Z (CEA-XX-125UN-350 with improved encapsulation)	\$ 27.95 (package of 5)
Axial, Narrow	C180923Z (CEA-XX-250UN-350 with improved encapsulation)	\$ 34.42 (package of 5)
Axial, Wide	C180924Z (CEA-XX-125UW-350 with improved encapsulation)	\$ 37.73 (package of 5)
Axial, Wide	C180925Z (CEA-XX-250UW-350 with improved encapsulation)	\$ 37.73 (package of 5)
Rosette	C180926Z (CEA-XX-125UR-350 with improved encapsulation)	\$ 117.96 (package of 5)
Rosette	C180927Z (CEA-XX-250UR-350 with improved encapsulation)	\$ 132.21 (package of 5)
Bi-axial Rosette	C180928Z (CEA-XX-125UT-350 with improved encapsulation)	\$ 86.93 (package of 5)
Bi-axial Rosette	C180929Z (CEA-XX-250UT-350 with improved encapsulation)	\$ 101.87 (package of 5)

Other products used include:

Manufacturer part number	Description	Price
MMF006678	M-Bond 200 Kit, 1OZ/28g	\$ 44.80
MMF015578	M-Bond AE-10 Kit	\$ 91.00
MMF006682	M-Bond 610 Kit	\$ 95.60

The NIAR Full Scale Structural Test (ASTEC) groups strain gage usage is not definable on an annual basis. A typical purchase could be up to several hundred gages (\$5,000) at the beginning of a two or three year program, and then a few for maintenance of those programs. It is also not normal to have new large programs starting on any annual basis. There are small programs regularly that use 50 to 100 gages, but like the large programs, those are not consistent enough to define on an annual usage.