

## Description:

US Digital offers a wide variety of standard and custom encoder disks and linear strips. These products are available in many different resolutions and diameters. The material used is mylar polyester film. This material is very rugged and virtually unbreakable with a wide temperature range of  $-70^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ . Standard encoder disk sizes are 1" and 2" in diameter. We can design custom resolutions, diameters (up to 12"), and index options to suit your applications. The 3 pieces of information necessary to order this part are: ID (inside hole diameter), OD (outside hole diameter), resolution (CPR) and speed (RPMs). For a linear strip, the length of the strip and resolution (CPI) needs to be specified.

The optical radius for the 1" diameter disk is  $.433"$ , and the optical radius for the 2" diameter disk is  $.920"$ . The optical radius is defined as the distance from the center of the disk to the middle of the quadrature track.

We recommend that the hole in the disk be  $.001"$  to  $.002"$  smaller than the shaft or hub it is designed to fit. This gives an interference fit that ensures disk concentricity. The drawings below represent our standard disks and linear strips.

US Digital warrants its products against defects in materials and workmanship for two years. See complete warranty for details.

With the **EDIVIDE** encoder resolution divider, users are now able to customize resolutions to specific applications. Please see the **EDIVIDE** data sheet for more information.

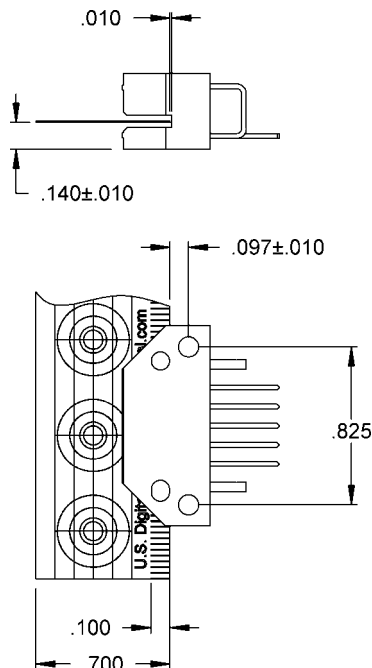
US Digital routinely makes special disks and linear strips to customer specifications. Pricing is affordable and typical lead time for customized products is 1 to 2 weeks. There is no minimum order. For more information please contact the Sales department.

**Standard Disk and Strip Products:** The disks and strips listed on the next page are used in US Digital's standard optical encoders. These disks are also available mounted on a hub. Please contact the Sales department for pricing of hub/disk assemblies, optical modules or more information on ordering custom disks.

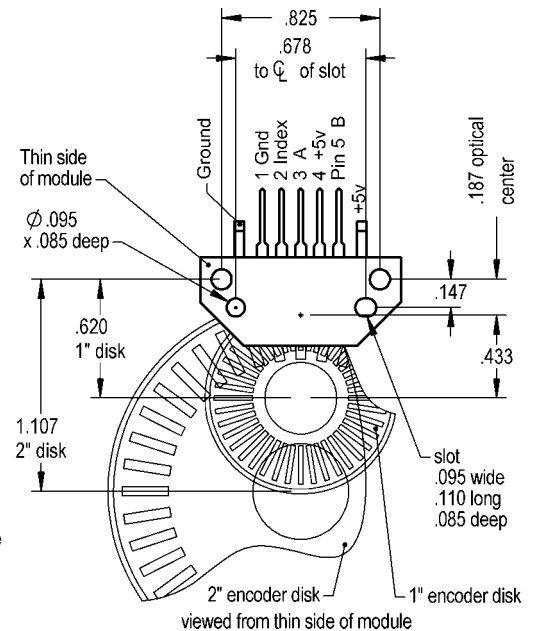
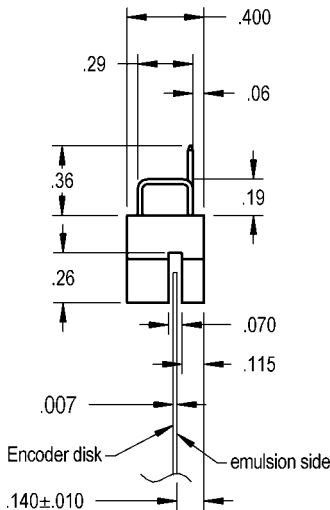
Agilent announced recently that they will discontinue a number of their optical encoder module resolutions and associated encoders. Some of these discontinued resolutions, plus additional resolutions, will be readily available from US Digital. For further information on our own incremental optical encoder module, please see the **EM1** data sheet.

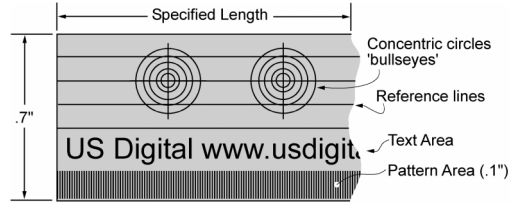
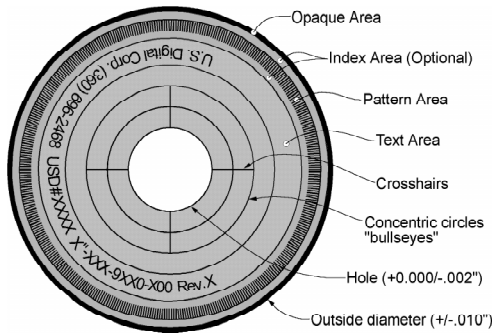
**Attention:** Be sure to keep different diameters, resolutions and options separated. The resolution of the optoelectronic modules and the code wheels and linear strips must match. Index and non-index parts cannot be mixed because the optical patterns are different. An additional identifier is stamped on each optoelectronic module. The 2-channel (non-index) version can be identified by a number 9000, 9100 or 9200. The linear strip versions can be identified by a number 9200. A 9040 or 9140 identifies the 3-channel (index) version. One letter or number stamped on each module specifies the resolution as shown in the tables on the following page.

### Linear Strip Mechanical Specifications:



### Disk Mechanical Specifications:





## 1" Diameter Disks:

These disks are used in our **E2, E5D, E5M, E5S, H1, H5D, H5S, S1, S5D** and **S5S** series encoders.  
 Standard Resolutions: **50, 96, 100, 110\*, 120\*, 192\*, 200, 250, 256, 360, 400, 500, 512, 540\*, 1000\*, 1016\*** and **1024\***.  
 Pricing depends on the inner diameters **.093", .125", .375"** and **.446"**:

### Quantity:

1	10	50	100	500	1000	5000	10000	25000
\$7.00	\$6.00	\$4.75	\$3.75	\$3.05	\$2.50	\$1.75	\$1.00	\$0.70

**Note:** Almost any resolution may be obtained by scaling the size of the disk smaller or larger as a linear proportion.

\* Indicates resolutions not available with index.

**Note:** The ID is made slightly smaller than the ID you specify to provide an interference fit. This eliminates play and helps increase mounting accuracy. Please contact the Sales department for US Digital disk part number.

## 2" Diameter Disks:

These disks are used in our **S2, H3, E3** and **E6M** series encoders.  
 Standard Resolutions: **100, 200, 400\*, 500, 512, 1000, 1024, 2000** and **2048**.  
 Pricing depends on the inner diameter:

### Quantity:

Inner Diameter:	Quantity:						
	1	10	50	100	500	1000	
.093"	\$9.00	\$8.00	\$6.50	\$5.00	\$4.50	\$2.40	
.125"	\$9.00	\$8.00	\$6.50	\$5.00	\$4.50	\$2.40	
.375"	\$9.00	\$8.00	\$6.50	\$5.00	\$4.50	\$2.40	
.446"	\$9.00	\$8.00	\$6.50	\$5.00	\$4.50	\$2.40	
.472"	\$12.00	\$10.50	\$9.00	\$7.00	\$5.00	\$2.50	
.500"	\$12.00	\$10.50	\$9.00	\$7.00	\$5.00	\$2.50	
.551"	\$12.00	\$10.50	\$9.00	\$7.00	\$5.00	\$2.50	
.625"	\$12.00	\$10.50	\$9.00	\$7.00	\$5.00	\$2.50	
.750"	\$14.00	\$12.00	\$10.00	\$7.50	\$5.40	\$2.85	
1.00"	\$14.00	\$12.00	\$10.00	\$7.50	\$5.40	\$2.85	

**Note:** Almost any resolution may be obtained by scaling the size of the disk smaller or larger as a linear proportion.

\* Indicates resolutions not available with index.

**Note:** The ID is made slightly smaller than the ID you specify to provide an interference fit. This eliminates play and helps increase mounting accuracy. Please contact the Sales department for US Digital disk part number.

## Linear Strips:

LIN -  -

**Resolution: (CPI)**

120
125
127
150
180
200
300
360

**Length:**  
(1 to 34 inches)

### Pricing:

(0-7 inches) \$14  
(+7 inches) \$2 per inch

Technical Data, Rev. 04.10.01, April 2001  
 All information subject to change without notice.