The Gurley LP20 series modular encoders represent a versatile range of rotary incremental encoders. Its modular construction provides friction-free operation and the wide selection of disc sizes affords the design engineer great flexibility.

Features/benefits include:

- low profile read head design provides high performance where space is limited
- vacuum compatibility for semiconductor and aerospace applications
- data (A-quad-B), index and commutation tracks available
- minimal adjustment required by customer during installation
- radiation tolerant version optional (call factory for more information)

There are presently two standard systems available, each with A-quad-B, index and two commutations tracks (shown with redundant reads heads; single head versions available)

- 80mm OD x 30mm ID with 2,048 lines or 8,192 counts after quadrature
- 158mm OD x 103mm ID with 8,192 lines or 32,768 counts after quadrature
### SPECIFICATIONS

#### Electrical

| Input Power       | $V_{cc}$: +5VDC 0.25 VDC@ 10 mA  
|                  | $I_{LED}$: +50mA max            |
| Light Source      | Screened and derated infra-red LED |
| Output Signals    | TTL/CMOS compatible Sine, Cosine, full-cycle ungated index pulse and motor commutation signals |

#### Mechanical

| Materials         | Encoder Body  
|                  | Aluminum or stainless steel  
|                  | Disk  
|                  | Vacuum-deposited chrome pattern on glass  
| Weight            | Read Head  
|                  | Depends on final optical diameter/size and hub material  
|                  | Disc/Hub  
|                  | Depends on final optical diameter/size and hub material  

#### Performance

| Frequency Response | dependent on both the line count and speed, call factory |
| Quadrature Error   | ±30° typical (depends on user’s installation) |
| Disc Accuracy      | ±10 arcs  
|                    | ±5 arcs  
| Dia ≤ 3”           |  
| Dia > 3”           |  

#### Environmental

| Operating Temp.    | +5°C to +25°C  
| Non-Operating Temp.| -40°C to +70°C  
| Shock              | 20g RMS, 60G peak  

As part of our continuing product improvement program, all specifications are subject to change without notice.
STANDARD DISC/HUB OPTIONS

Gurley offers two disc hubs as catalog items. We can also mount discs to customer-furnished hubs or provide hubs designed for your specific application. We strongly suggest that you consult with us regarding the proper design of the disc/hub assembly and mounting of the Read Head.

All dimensions are in mm.

Consult factory for other line counts or sizes.
SECTION A-A
SCALE 2 : 3

17 HUB TO HEAD MOUNTING DIMENSION

Ø157.6
Ø101.6
Ø120

5.9

4.7

21.8

1
2X Ø 4.3 THRU ALL

Ø110

Ø132

R66.8

R96.5

6X Ø 4.3 THRU ALL

65.0°

2X 32.0°
SPECIAL CAPABILITIES

For special situations, we can optimize encoders to provide higher frequency response, greater accuracy, wider temperature range, reduced torque, non-standard line counts, or other modified characteristics. In addition, we regularly design and manufacture custom encoders for user-specific requirements. These range from high-volume, low-cost, limited-performance commercial applications to encoders for high-performance, high-reliability conditions. We welcome the opportunity to help you with your special encoder needs.

WARRANTY

Gurley Precision Instruments offers a limited warranty against defects in material and workmanship for a period of one year from the date of shipment.