



### Pump Performance Datasheet

|                       |   |
|-----------------------|---|
| Customer :            | Quote number :                          |
| Customer reference :  | Size : LCR45-07-2                       |
| Item number : Default | Stages : 7                              |
| Service :             | Based on curve number : LCR45-07-2-2-50 |
| Quantity : 1          | Date last saved : 17 Nov 2023 8:13 PM   |

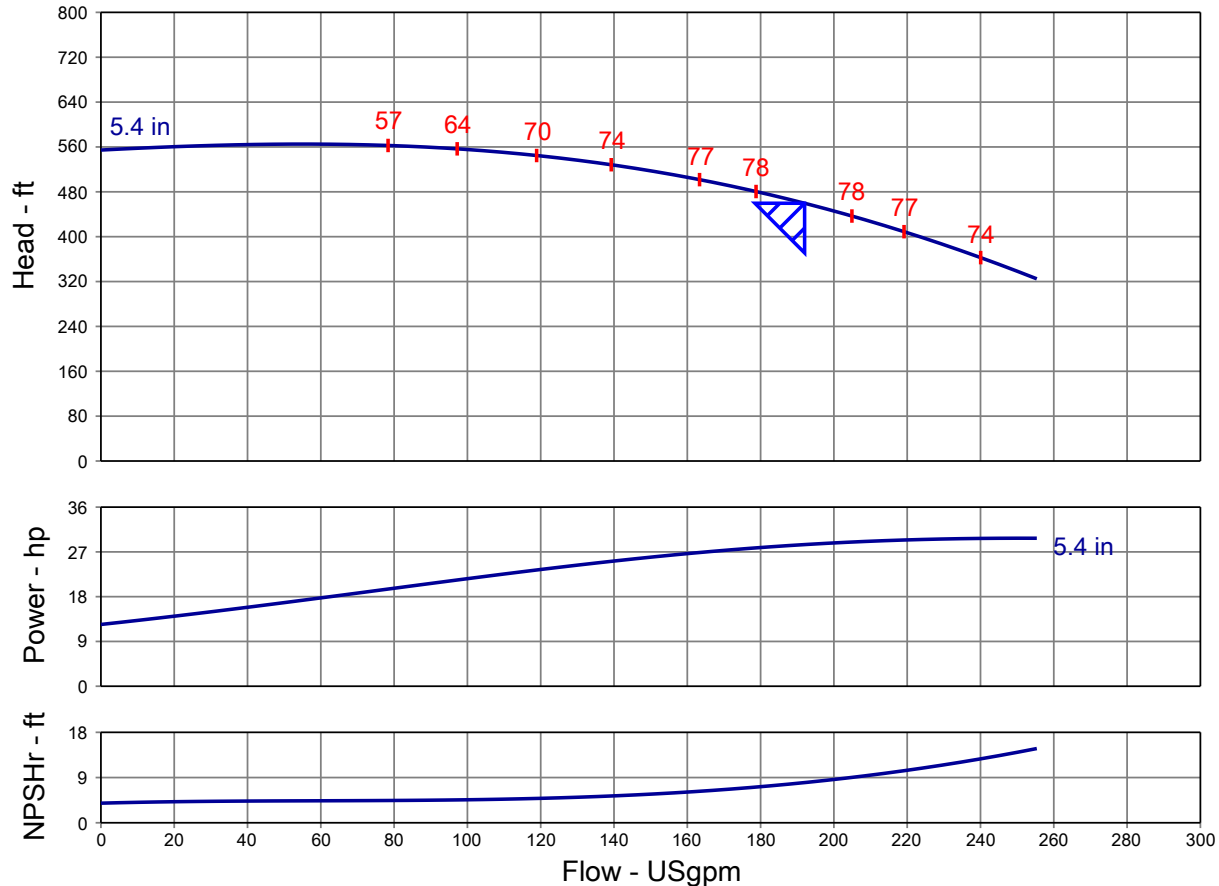
| Operating Conditions          |                     | Liquid                          |                    |
|-------------------------------|---------------------|---------------------------------|--------------------|
| Flow, rated                   | : 192.0 USgpm       | Liquid type                     | : Water            |
| Head, rated (requested)       | : 459.6 ft          | Additional liquid description   | :                  |
| Head, rated (actual)          | : 459.6 ft          | Solids diameter, max            | : 0.0 in           |
| Suction pressure, rated / max | : 0.00 / 0.00 psi.g | Solids concentration, by volume | : 0.00 %           |
| NPSH available                | : Ample             | Temperature                     | : 68.00 deg F      |
| Site Supply Frequency         | : 50 Hz             | Fluid density                   | : 1.000 / 1.000 SG |

| Performance                            |                         | Material          |            |
|--|-------------------------|-------------------|------------|
| Speed criteria                         | : Synchronous           | Material selected | : Standard |
| Speed                                  | : 2900 rpm              |                   |            |
| Impeller dia.                          | : 5.4 in                |                   |            |
| Impeller diameter, maximum             | : 5.4 in                |                   |            |
| Impeller diameter, minimum             | : 5.4 in                |                   |            |
| Efficiency                             | : 78.28 %               |                   |            |
| NPSH required / margin required        | : 8.00 / 0.00 ft        |                   |            |
| nq (imp. eye flow) / S (imp. eye flow) | : 34 / 163 Metric units |                   |            |
| MCSF                                   | : -                     |                   |            |

| Performance                      |                             | Pressure Data                      |               |
|----------------------------------|-----------------------------|------------------------------------|---------------|
| Head max.                        | : 565.1 ft                  | Maximum working pressure           | : 244.6 psi.g |
| Head rise to shutoff             | : 20.64 %                   | Maximum allowable working pressure | : 435.1 psi.g |
| Flow, best eff. point            | : 192.0 USgpm               | Maximum allowable suction pressure | : 217.6 psi.g |
| Flow ratio, rated / BEP          | : 100.00 %                  | Hydrostatic test pressure          | : 652.7 psi.g |
| Diameter ratio (rated / max)     | : 100.00 %                  |                                    |               |
| Head ratio (rated dia / max dia) | : 100.00 %                  |                                    |               |
| Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] | : 1.00 / 1.00 / 1.00 / 1.00 |                                    |               |
| Selection status                 | : Acceptable                |                                    |               |

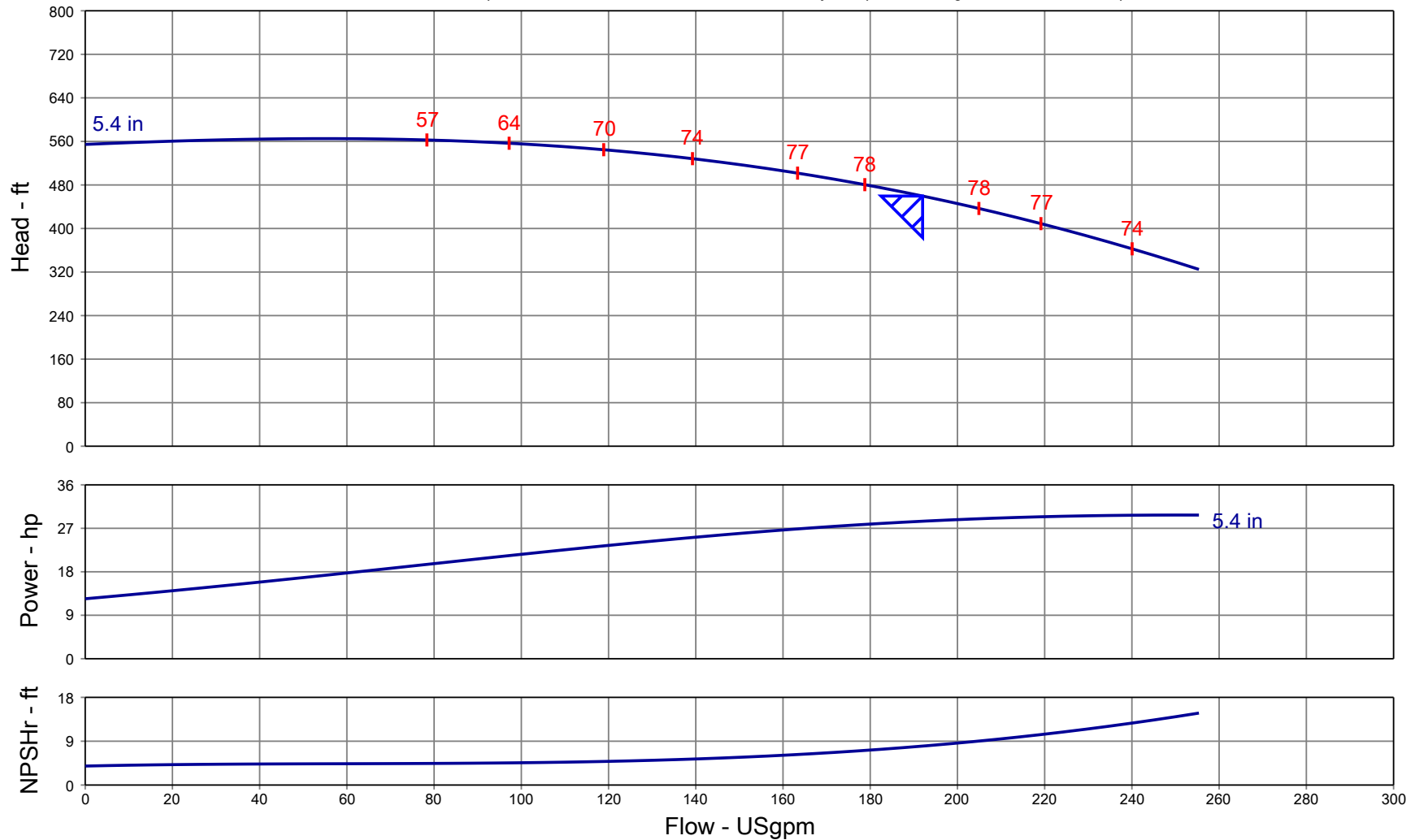
| Performance                      |                             | Driver & Power Data (@Max density) |                       |
|----------------------------------|-----------------------------|------------------------------------|-----------------------|
| Head max.                        | : 565.1 ft                  | Driver sizing specification        | : Maximum power       |
| Head rise to shutoff             | : 20.64 %                   | Margin over specification          | : 0.00 %              |
| Flow, best eff. point            | : 192.0 USgpm               | Service factor                     | : 1.00                |
| Flow ratio, rated / BEP          | : 100.00 %                  | Power, hydraulic                   | : 22.29 hp            |
| Diameter ratio (rated / max)     | : 100.00 %                  | Power, rated                       | : 28.47 hp            |
| Head ratio (rated dia / max dia) | : 100.00 %                  | Power, maximum                     | : 29.75 hp            |
| Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] | : 1.00 / 1.00 / 1.00 / 1.00 | Motor rating                       | : 30.00 hp / 22.37 kW |
| Selection status                 | : Acceptable                |                                    |                       |

Performance based on test acceptance - ISO 9906:2012 3B. Performances are subject to periodic changes due to continuous improvements.



### Pump Performance Curve

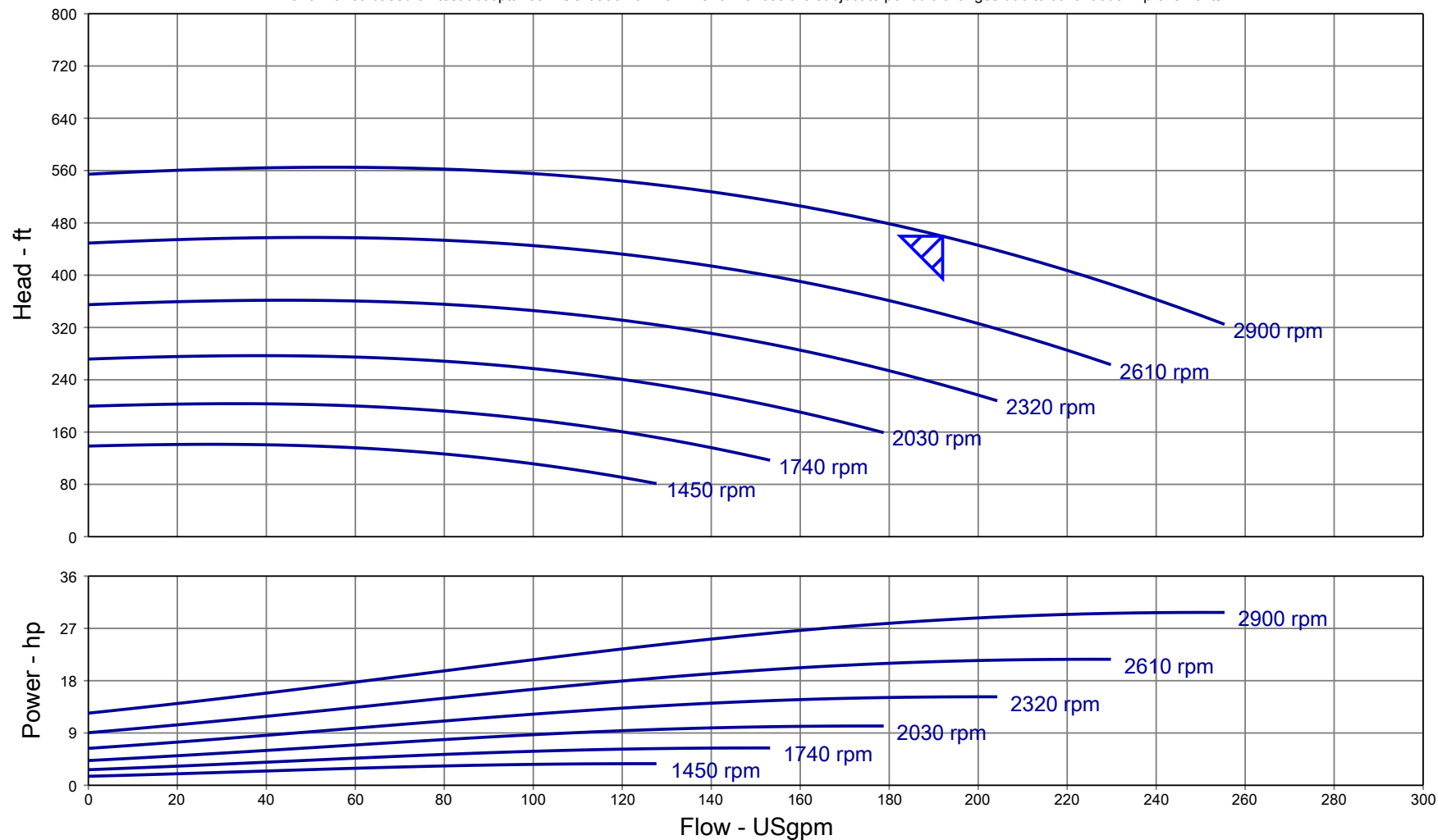
Performance based on test acceptance - ISO 9906:2012 3B. Performances are subject to periodic changes due to continuous improvements.



|                                       |   |  |
|---------------------------------------|---|--|
| Customer :                            | Size : LCR45-07-2                       | Flow, rated : 192.0 USgpm                                    |
| Customer reference :                  | Stages : 7                              | Head, rated : 459.6 ft                                       |
| Item number : Default                 | Speed : 2900 rpm                        | Fluid density : 1.000 / 1.000 SG                             |
| Service :                             | Based on curve number : LCR45-07-2-2-50 | Viscosity : 1.00 cP  |
| Quantity : 1                          | Efficiency : 78.28 %                    | Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] : 1.00 / 1.00 / 1.00 / 1.00 |
| Quote number :                        | Power, rated : 28.47 hp                 |  |
| Date last saved : 17 Nov 2023 8:13 PM | NPSH required : 8.00 ft                 |  |

### Multi-Speed Performance Curve

Performance based on test acceptance - ISO 9906:2012 3B. Performances are subject to periodic changes due to continuous improvements.



|                                       |                               |  |
|---------------------------------------|-------------------------------|--|
| Customer :                            | Stages :                      | Nominal speed :  |
| Customer reference :                  | Based on curve number :       | Flow, rated :  |
| Item number : Default                 | Efficiency : 78.28 %          | Head, rated :  |
| Service :                             | Power, rated : 28.47 hp       | Speed : 2900 rpm   |
| Quantity : 1                          | NPSH required : 8.00 ft       | Impeller dia. : 5.4 in                                       |
| Quote number :                        | Site Supply Frequency : 50 Hz | Fluid density : 1.000 / 1.000 SG                             |
| Date last saved : 17 Nov 2023 8:13 PM |                               | Viscosity : 1.00 cP  |
| Size : LCR45-07-2                     |                               | Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] : 1.00 / 1.00 / 1.00 / 1.00 |

### Life Cycle Cost Datasheet

|                       |                                       |                   |
|-----------------------|---------------------------------------|-------------------|
| Customer :            | Quantity : 1                          | Size : LCR45-07-2 |
| Customer reference :  | Quote number :                        | Stages : 7        |
| Item number : Default | Date last saved : 17 Nov 2023 8:13 PM | Speed : 2900      |
| Service :             |                                       |                   |

### Load Profiles and Energy Costs

| Expected pump life: 20 years            | Load Profile #1 | Load Profile #2 | Load Profile #3 | Load Profile #4 | Load Profile #5 | Total         |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|
| Flow: ( USgpm )                         | 29.06           | -               | -               | -               | -               | -             |
| Operation: ( hours per year )           | 8,760           | -               | -               | -               | -               | 8,760         |
| Energy cost, present value (\$ per kWh) | 0.1             | -               | -               | -               | -               | -             |
| Speed (rpm)                             | 2900            | -               | -               | -               | -               | -             |
| Head (ft)                               | 562.5           | -               | -               | -               | -               | -             |
| Efficiency (%)                          | 27.75           | -               | -               | -               | -               | -             |
| Power, rated (hp)                       | 14.87           | -               | -               | -               | -               | -             |
| Motor efficiency (%)                    | 100.00          | -               | -               | -               | -               | -             |
| Drive/gear efficiency (%)               | 100.00          | -               | -               | -               | -               | -             |
| System curve                            | -               | -               | -               | -               | -               | -             |
| Energy, total (kWh)                     | 1,942,911.9     | -               | -               | -               | -               | 1,942,911.9   |
| Energy cost, per year                   | \$ 9,714.56     | -               | -               | -               | -               | \$ 9,714.56   |
| Energy cost, total present value        | \$ 145,702.64   | -               | -               | -               | -               | \$ 145,702.64 |

### Life Cycle Cost Calculation

| Additional Annual Costs         | Additional One-time Costs, Year 0          | Interest and Inflation Rates             |
|---------------------------------|--|--|
| Routine maintenance cost : 0.00 | Initial investment cost : 0.00             | Interest rate, % : 6.00                  |
| Repair cost : 0.00              | Installation and commissioning cost : 0.00 | Inflation rate, % : 3.00                 |
| Operating cost : 0.00           | Other one-time costs, year 0 : 0.00        | <b>Total Net Present Value Costs</b>     |
| Downtime cost : 0.00            | <b>Additional One-time Costs, Year 20</b>  | Total energy cost : \$ 145,702.64        |
| Environmental cost : 0.00       | Decommissioning cost : 0.00                | Total additional annual cost : \$ 0.00   |
| Other annual costs : 0.00       | Other one-time costs, year 20 : 0.00       | Total additional one-time cost : \$ 0.00 |
| Total, present value : \$ 0.00  | Total, present value : \$ 0.00             | Total life cycle cost : \$ 145,702.64    |

### Pump Performance - Additional Data

|                       |                                       |
|-----------------------|---------------------------------------|
| Customer :            | Quote number :                        |
| Customer reference :  | Size : LCR45-07-2                     |
| Item number : Default | Stages : 7                            |
| Service :             | Speed : 2900 rpm                      |
| Quantity : 1          | Intellicode :                         |
|                       | Date last saved : 17 Nov 2023 8:13 PM |

| Performance Data   | Stage, Speed and Solids Limits        |
|--|---------------------------------------|
| Head, maximum diameter, rated flow : 459.6 ft              | Stages, maximum : 7                   |
| Head, minimum diameter, rated flow : 459.6 ft              | Stages, minimum : 7                   |
| Head max. : 565.1 ft                                       | Pump speed limit, maximum : 2900 rpm  |
| Efficiency adjustment factor, total : 1.00                 | Pump speed limit, minimum : 1200 rpm  |
| Power adjustment, total : 0.00 hp                          | Curve speed limit, maximum : 2900 rpm |
| Head adjustment factor, total : 1.00                       | Curve speed limit, minimum : 1200 rpm |
| Flow adjustment factor, total : 1.00                       | Variable speed limit, maximum : -     |
| Flow adjustment factor, efficiency only (shift BEP) : 1.00 | Variable speed limit, minimum : -     |
| Flow adjustment factor, end-of-curve only, total : 1.00    | Solids size limit : 0.0 in            |
| MCSF adjustment factor : 1.00                              |                                       |
| NPSHR adjustment factor, total : 1.00                      |                                       |
| NPSHR slope correction factor : 1.00                       |                                       |
| User applied performance adjustment comments :             |                                       |
| NPSH margin dictated by pump supplier : 0.00 ft            |                                       |
| NPSH margin dictated by user : 0.00 ft                     |                                       |
| NPSH margin used (added to 'required' values) : 0.00 ft    |                                       |

| Mechanical Limits                                       | Typical Driver Data                 |
|---|-------------------------------------|
| Torque, rated power, rated speed : 0.98 hp/100 rpm      | Driver speed, full load : 2900 rpm  |
| Torque, maximum power, rated speed : 1.03 hp/100 rpm    | Driver speed, rated load : 2900 rpm |
| Torque, driver power, full load speed : 1.03 hp/100 rpm | Driver efficiency, 100% load : N/A  |
| Torque, driver power, rated speed : 1.03 hp/100 rpm     | Driver efficiency, 75% load : N/A   |
| Torque, pump shaft limit : -                            | Driver efficiency, 50% load : N/A   |
| Radial load, worst case : -                             |                                     |
| Radial load limit : -                                   |                                     |
| Impeller peripheral speed, rated : -                    |                                     |
| Impeller peripheral speed limit : -                     |                                     |

| Various Performance Data        | Flow (USgpm) | Head (ft) | Efficiency (%) | NPSHr (ft) | Power (hp) |
|---------------------------------|--------------|-----------|----------------|------------|------------|
| Shutoff, rated diameter         | 0.00         | 554.5     | -              | -          | 12.41      |
| Shutoff, maximum diameter       | 0.00         | 554.5     | -              | -          | 12.41      |
| MCSF                            | -            | -         | -              | -          | -          |
| Rated flow, minimum diameter    | 192.0        | 459.6     | 78.28          | -          | 28.47      |
| Rated flow, maximum diameter    | 192.0        | 459.6     | 78.28          | -          | 28.47      |
| BEP flow, rated diameter        | 192.0        | 459.6     | 78.28          | 8.00       | 28.47      |
| 120% rated flow, rated diameter | 230.4        | 384.8     | 75.63          | 11.57      | 29.60      |
| End of curve, rated diameter    | 255.4        | 324.8     | 70.43          | 14.77      | 29.74      |
| End of curve, minimum diameter  | 255.4        | 324.8     | 70.43          | 14.77      | 29.74      |
| End of curve, maximum diameter  | 255.4        | 324.8     | 70.43          | 14.77      | 29.74      |
| Maximum value, rated diameter   | -            | 565.1     | 78.28          | -          | 29.75      |
| Maximum value, maximum diameter | -            | -         | 78.28          | -          | 29.75      |

| System differential pressure                            | @ Density, rated          |                         | @ Density, max            |                         |
|---|---------------------------|-------------------------|---------------------------|-------------------------|
| Differential pressure, rated flow, rated diameter (psi) | 199.0                     |                         | 199.0                     |                         |
| Differential pressure, shutoff, rated diameter (psi)    | 240.0                     |                         | 240.0                     |                         |
| Differential pressure, shutoff, maximum diameter (psi)  | 240.0                     |                         | 240.0                     |                         |
| Discharge pressure                                      | @ Suction pressure, rated | @ Suction pressure, max | @ Suction pressure, rated | @ Suction pressure, max |
| Discharge pressure, rated flow, rated diameter (psi.g)  | 199.0                     | 199.0                   | 199.0                     | 199.0                   |
| Discharge pressure, shutoff, rated diameter (psi.g)     | 240.0                     | 240.0                   | 240.0                     | 240.0                   |
| Discharge pressure, shutoff, maximum diameter (psi.g)   | 240.0                     | 240.0                   | 240.0                     | 240.0                   |

| Ratios   |  |
|--|--|
| Maximum flow / rated flow, rated diameter : 133.00 % | Head rated diameter / head minimum diameter, rated flow : 100.00 % |



### Pump Performance - Additional Data

#### Construction

|                             |            |                 |  |
|-----------------------------|------------|-----------------|--|
| Orientation                 | : Standard | Curve Tolerance | : ISO 9906:2012 3B.  |
| Construction Specifications | : Standard |                 | Performances are subject to periodic changes due to continuous improvements. |