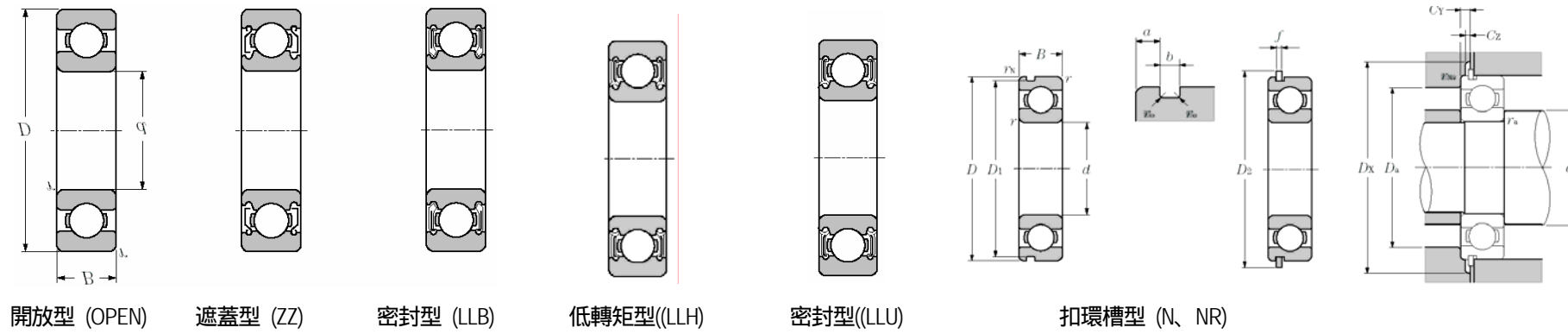


# 單列深溝滾珠軸承

## Single-row Deep Groove Ball Bearings

### Bearings



**Equivalent bearing load**  
dynamic  
 $P_r = X F_r + Y F_a$

| $\frac{F_a}{C_{or}}$ | $e$  | $\frac{F_a}{F_r} \leq e$ |   | $\frac{F_a}{F_r} > e$ |      |
|----------------------|------|--------------------------|---|-----------------------|------|
|                      |      | X                        | Y | X                     | Y    |
| 0.010                | 0.18 |                          |   |                       | 2.46 |
| 0.020                | 0.20 |                          |   |                       | 2.14 |
| 0.040                | 0.24 |                          |   |                       | 1.83 |
| 0.070                | 0.27 |                          |   |                       | 1.61 |
| 0.10                 | 0.29 |                          |   |                       | 1.48 |
| 0.15                 | 0.32 | 1                        | 0 | 0.56                  | 1.35 |
| 0.20                 | 0.35 |                          |   |                       | 1.25 |
| 0.30                 | 0.38 |                          |   |                       | 1.13 |
| 0.40                 | 0.41 |                          |   |                       | 1.05 |
| 0.50                 | 0.44 |                          |   |                       | 1.00 |

**static**  
 $P_{or} = 0.6 F_r + 0.5 F_a$   
When  $P_{or} < F_r$ , use  $P_{or} = F_r$

### d 22~35mm

| 主要尺寸 (mm)                |    |     |                   | 基本額定負荷 (N)             |                 | 容許迴轉速 (rpm)           |       |        |           | 軸承規格類別               |           |                      |                     |                  |                  | 環溝尺寸 (mm)                   |                |        |      | 扣環尺寸 (mm)            |                | 安裝相關尺寸 (mm)                  |                |                |                 |                |                | 重量 (kg)        |                  |               |       |
|--------------------------|----|-----|-------------------|------------------------|-----------------|-----------------------|-------|--------|-----------|----------------------|-----------|----------------------|---------------------|------------------|------------------|-----------------------------|----------------|--------|------|----------------------|----------------|------------------------------|----------------|----------------|-----------------|----------------|----------------|----------------|------------------|---------------|-------|
| Boundary dimensions (mm) |    |     |                   | Basic load ratings (N) |                 | Limiting speeds (rpm) |       |        |           | Bearing numbers Type |           |                      |                     |                  |                  | Snap ring groove dimensions |                |        |      | Snap ring dimensions |                | Abutment and dimensions (mm) |                |                |                 |                |                | Weight (kg)    |                  |               |       |
| 內徑                       | 外徑 | 寬度  | 倒角                | 動額定 dyn.               | 靜額定 stat.       | 滑脂 Grease             |       |        | 潤滑油 Oil   | 開放型                  | 遮蓋型       | 密封型非接觸式              | 低轉矩                 | 密封型接觸式           | 附環溝              | 附扣環                         | 溝底直徑           | 距寬度面尺寸 | 寬度   | 溝底倒角                 | 寬度             | 直徑                           | 軸肩部直徑          | 軸箱肩部直徑         | 倒角              |                |                |                |                  | 開放型 (約)       |       |
| d                        | D  | B   | r <sub>smin</sub> | C <sub>r</sub>         | C <sub>or</sub> | Open Z, ZZ LB, LLB    | LLH   | LU LLU | Open Z LB | Open                 | Shield ZZ | Seal non-contact LLB | Low torque type LLH | Seal contact LLU | Snap ring groove | Snap ring                   | D <sub>1</sub> | a      | b    | r <sub>0</sub>       | D <sub>2</sub> | f                            | d <sub>a</sub> | D <sub>a</sub> | r <sub>as</sub> | D <sub>x</sub> | C <sub>Y</sub> | C <sub>Z</sub> | r <sub>Nas</sub> | Open (Approx) |       |
|                          |    |     |                   |                        |                 |                       |       |        |           |                      |           |                      |                     |                  |                  |                             | max            | max    | min  | max                  | max            | max                          | min            | max            | max             | (approx.)      | max            | max            | max              |               |       |
| 22                       | 44 | 12  | 0.6               | 9400                   | 5050            | 17000                 | 13000 | 10000  | 20000     | 60/22*               | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 41.75          | 2.06   | 1.35 | 0.4                  | 48.3           | 1.12                         | 26             | 26.5           | 40              | 0.6            | 49             | 2.9            | 1.2              | 0.5           | 0.074 |
|                          | 50 | 14  | 1                 | 12900                  | 6800            | 14000                 | 12000 | 9700   | 17000     | 62/22                | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 47.6           | 2.46   | 1.35 | 0.4                  | 55.7           | 1.12                         | 27             | 29.5           | 45              | 1              | 56.5           | 3.3            | 1.2              | 0.5           | 0.117 |
|                          | 56 | 16  | 1.1               | 18400                  | 9250            | 13000                 | 11000 | 9200   | 15000     | 63/22                | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 53.6           | 2.46   | 1.35 | 0.4                  | 61.7           | 1.12                         | 28.5           | 31             | 49.5            | 1              | 62.5           | 3.3            | 1.2              | 0.5           | 0.176 |
| 25                       | 37 | 7   | 0.3               | 4300                   | 2950            | 18000                 | -     | 10000  | 21000     | 6805*                | ZZ        | LLB                  | -                   | LLU              | N                | NR                          | 35.7           | 1.3    | 0.95 | 0.25                 | 39.8           | 0.85                         | 27             | 28             | 35              | 0.3            | 40.5           | 1.9            | 0.9              | 0.3           | 0.022 |
|                          | 42 | 9   | 0.3               | 7050                   | 4550            | 16000                 | -     | 9800   | 19000     | 6905                 | ZZ        | LLB                  | -                   | LLU              | N                | NR                          | 40.7           | 1.7    | 0.95 | 0.25                 | 44.8           | 0.85                         | 27             | 29             | 40              | 0.3            | 45.5           | 2.3            | 0.9              | 0.3           | 0.042 |
|                          | 47 | 8   | 0.3               | 8350                   | 5100            | 15000                 | -     | -      | 18000     | 16005                | -         | -                    | -                   | -                | -                | -                           | -              | -      | -    | -                    | -              | -                            | -              | -              | 45              | 0.3            | -              | -              | -                | -             | 0.060 |
|                          | 47 | 12  | 0.6               | 10100                  | 5850            | 15000                 | 11000 | 9400   | 18000     | 6005                 | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 44.6           | 2.06   | 1.35 | 0.4                  | 52.7           | 1.12                         | 29             | 30.5           | 43              | 0.6            | 53.5           | 2.9            | 1.2              | 0.5           | 0.080 |
|                          | 52 | 15  | 1                 | 14000                  | 7850            | 13000                 | 11000 | 8900   | 15000     | 6205                 | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 49.73          | 2.46   | 1.35 | 0.4                  | 57.9           | 1.12                         | 30             | 32             | 47              | 1              | 58.5           | 3.3            | 1.2              | 0.5           | 0.128 |
|                          | 62 | 17  | 1.1               | 21200                  | 10900           | 12000                 | 9700  | 8100   | 14000     | 6305                 | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 59.61          | 3.28   | 1.9  | 0.6                  | 67.7           | 1.7                          | 31.5           | 35             | 55.5            | 1              | 68.5           | 4.6            | 1.7              | 0.5           | 0.232 |
| 28                       | 52 | 12  | 0.6               | 12500                  | 7400            | 14000                 | 10000 | 8400   | 16000     | 60/28*               | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 49.7           | 2.06   | 1.35 | 0.4                  | 57.9           | 1.12                         | 32             | 34             | 48              | 0.6            | 58.5           | 2.9            | 1.2              | 0.5           | 0.098 |
|                          | 58 | 16  | 1                 | 17900                  | 9750            | 12000                 | 9700  | 8100   | 14000     | 62/28                | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 55.6           | 2.46   | 1.35 | 0.4                  | 63.7           | 1.12                         | 33             | 35.5           | 53              | 1              | 64.5           | 3.3            | 1.2              | 0.5           | 0.171 |
|                          | 68 | 18  | 1.1               | 26700                  | 14000           | 11000                 | 8900  | 7400   | 13000     | 63/28                | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 64.82          | 3.28   | 1.9  | 0.6                  | 74.6           | 1.7                          | 34.5           | 38.5           | 61.5            | 1              | 76             | 4.6            | 1.7              | 0.5           | 0.284 |
| 30                       | 42 | 7   | 0.3               | 4700                   | 3650            | 15000                 | -     | 8800   | 18000     | 6806*                | ZZ        | LLB                  | -                   | LLU              | N                | NR                          | 40.7           | 1.3    | 0.95 | 0.25                 | 44.8           | 0.85                         | 32             | 33             | 40              | 0.3            | 45.5           | 1.9            | 0.9              | 0.3           | 0.026 |
|                          | 47 | 9   | 0.3               | 7250                   | 5000            | 14000                 | -     | 8400   | 17000     | 6906                 | ZZ        | LLB                  | -                   | LLU              | N                | NR                          | 45.7           | 1.7    | 0.95 | 0.25                 | 49.8           | 0.85                         | 32             | 34             | 45              | 0.3            | 50.5           | 2.3            | 0.9              | 0.3           | 0.048 |
|                          | 55 | 9   | 0.3               | 11200                  | 7350            | 13000                 | -     | -      | 15000     | 16006*               | -         | -                    | -                   | -                | -                | -                           | -              | -      | -    | -                    | -              | -                            | -              | -              | 53              | 0.3            | -              | -              | -                | -             | 0.091 |
|                          | 55 | 13  | 1                 | 13200                  | 8300            | 13000                 | 9200  | 7700   | 15000     | 6006                 | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 52.6           | 2.08   | 1.35 | 0.4                  | 60.7           | 1.12                         | 35             | 37             | 50              | 1              | 61.5           | 2.9            | 1.2              | 0.5           | 0.116 |
|                          | 62 | 16  | 1                 | 19500                  | 11300           | 11000                 | 8800  | 7300   | 13000     | 6206                 | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 59.61          | 3.28   | 1.9  | 0.6                  | 67.7           | 1.7                          | 35             | 39             | 57              | 1              | 68.5           | 4.6            | 1.7              | 0.5           | 0.199 |
| 32                       | 72 | 19  | 1.1               | 26700                  | 15000           | 10000                 | 7900  | 6600   | 12000     | 6306                 | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 68.81          | 3.28   | 1.9  | 0.6                  | 78.6           | 1.7                          | 36.5           | 43             | 65.5            | 1              | 80             | 4.6            | 1.7              | 0.5           | 0.360 |
|                          | 58 | 13  | 1                 | 11800                  | 8050            | 12000                 | 8700  | 7200   | 15000     | 60/32                | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 55.6           | 2.08   | 1.35 | 0.4                  | 63.7           | 1.12                         | 37             | 39             | 53              | 1              | 64.5           | 2.9            | 1.2              | 0.5           | 0.129 |
|                          | 65 | 17  | 1                 | 20700                  | 11600           | 11000                 | 8400  | 7100   | 12000     | 62/32                | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 62.6           | 3.28   | 1.9  | 0.6                  | 70.7           | 1.7                          | 37             | 40             | 60              | 1              | 71.5           | 4.6            | 1.7              | 0.5           | 0.226 |
| 35                       | 75 | 20  | 1.1               | 29800                  | 16900           | 9500                  | 7700  | 6500   | 11000     | 63/32*               | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 71.83          | 3.28   | 1.9  | 0.6                  | 81.6           | 1.7                          | 38.5           | 43.5           | 68.5            | 1              | 83             | 4.6            | 1.7              | 0.5           | 0.382 |
|                          | 47 | 7   | 0.3               | 4900                   | 4050            | 13000                 | -     | -      | 16000     | 6807*                | ZZ        | LLB                  | -                   | LLU              | N                | NR                          | 45.7           | 1.3    | 0.95 | 0.25                 | 49.8           | 0.85                         | 37             | 38             | 45              | 0.3            | 50.5           | 1.9            | 0.9              | 0.3           | 0.029 |
|                          | 55 | 10  | 0.6               | 9550                   | 6850            | 12000                 | -     | 7100   | 15000     | 6907*                | ZZ        | LLB                  | -                   | LLU              | N                | NR                          | 53.7           | 1.7    | 0.95 | 0.25                 | 57.8           | 0.85                         | 39             | 40             | 51              | 0.6            | 58.8           | 2.3            | 0.9              | 0.5           | 0.074 |
|                          | 62 | 9   | 0.3               | 11700                  | 8200            | 12000                 | -     | -      | 14000     | 16007*               | -         | -                    | -                   | -                | -                | -                           | -              | -      | -    | -                    | -              | -                            | -              | -              | 60              | 0.3            | -              | -              | -                | -             | 0.110 |
|                          | 62 | 14  | 1                 | 16000                  | 10300           | 12000                 | 8200  | 6800   | 14000     | 6007                 | ZZ        | LLB                  | LLH                 | LLU              | N                | NR                          | 59.61          | 2.08   | 1.9  | 0.6                  | 67.7           | 1.7                          | 40             | 42             | 57              | 1              | 68.5           | 3.4            | 1.7              | 0.5           | 0.155 |
| 72                       | 17 | 1.1 | 25700             | 15300                  | 9800            | 7600                  | 6300  | 11000  | 6207      | ZZ                   | LLB       | LLH                  | LLU                 | N                | NR               | 68.81                       | 3.28           | 1.9    | 0.6  | 78.6                 | 1.7            | 41.5                         | 45             | 65.5           | 1               | 80             | 4.6            | 1.7            | 0.5              | 0.288         |       |
| 80                       | 21 | 1.5 | 33500             | 19100                  | 8800            | 7300                  | 6000  | 10000  | 6307      | ZZ                   | LLB       | LLH                  | LLU                 | N                | NR               | 76.81                       | 3.28           | 1.9    | 0.6  | 86.6                 | 1.7            | 43                           | 47             | 72             | 1.5             | 88             | 4.6            | 1.7            | 0.5              | 0.457         |       |

註：\* 表示該型號雖在 TPI 加工能力範圍內，目前尚未供應，除非有客戶需求。