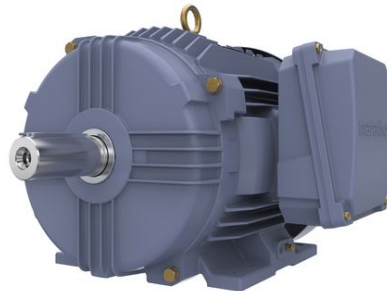


# PRODUCT INFORMATION PACKET

Model No: TCA0043A3113GACD01

Catalog No: TCA0043A3113GACD01

4.0 kW General Purpose Low Voltage IEC Motor, 3 phase, 1000 RPM, 415 V, 132M Frame, TEFC  
Cast Iron IE3 Efficiency Motors



### Nameplate Specifications

|                            |         |                        |                             |
|----------------------------|---------|------------------------|-----------------------------|
| Output HP                  | 5.50 Hp | Output KW              | 4.0 kW                      |
| Frequency                  | 50 Hz   | Voltage                | 415 V                       |
| Current                    | 8.6 A   | Speed                  | 972 rpm                     |
| Service Factor             | 1       | Phase                  | 3                           |
| Efficiency                 | 86.8 %  | Power Factor           | 0.75                        |
| Duty                       | S1      | Insulation Class       | F                           |
| Frame                      | 132M    | Enclosure              | Totally Enclosed Fan Cooled |
| Ambient Temperature        | 50 °C   | Drive End Bearing Size | 6308                        |
| Opp Drive End Bearing Size | 6208    | UL                     | No                          |
| CSA                        | No      | CE                     | Yes                         |
| IP Code                    | 55      |                        |                             |

### Technical Specifications

|                       |               |                       |                |
|-----------------------|---------------|-----------------------|----------------|
| Electrical Type       | Squirrel Cage | Starting Method       | Direct On Line |
| Poles                 | 6             | Rotation              | Bi-Directional |
| Mounting              | B3            | Motor Orientation     | Horizontal     |
| Drive End Bearing     | 2z-C3         | Opp Drive End Bearing | 2z-C3          |
| Frame Material        | Cast Iron     | Shaft Type            | Keyed          |
| Overall Length        | 503 mm        | Frame Length          | 240 mm         |
| Shaft Diameter        | 38 mm         | Shaft Extension       | 80 mm          |
| Assembly/Box Mounting | R Side        |                       |                |
| Outline Drawing       | 0213200966    | Connection Drawing    | 8442000085     |

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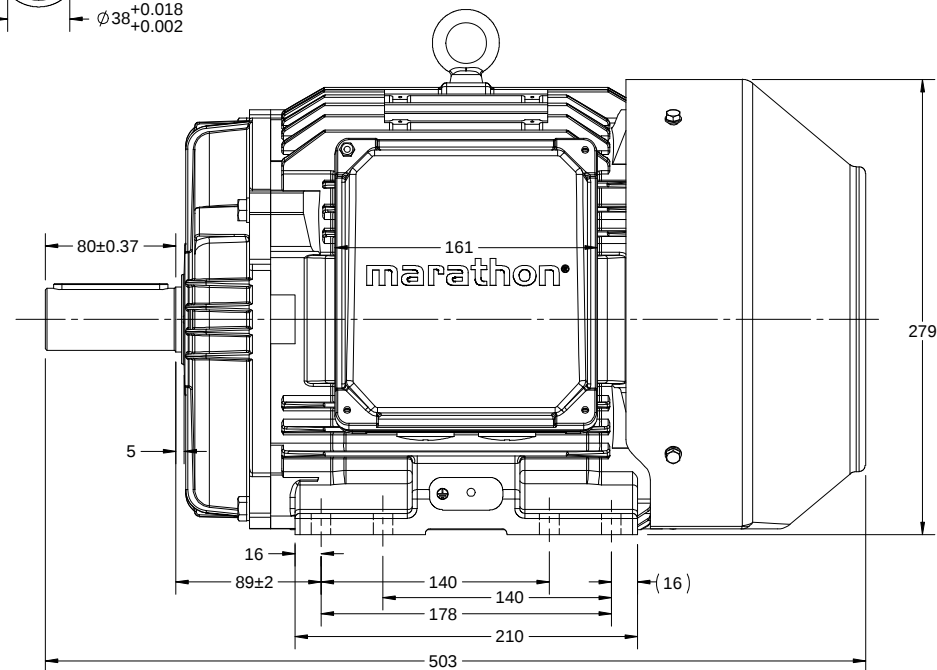
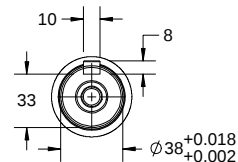
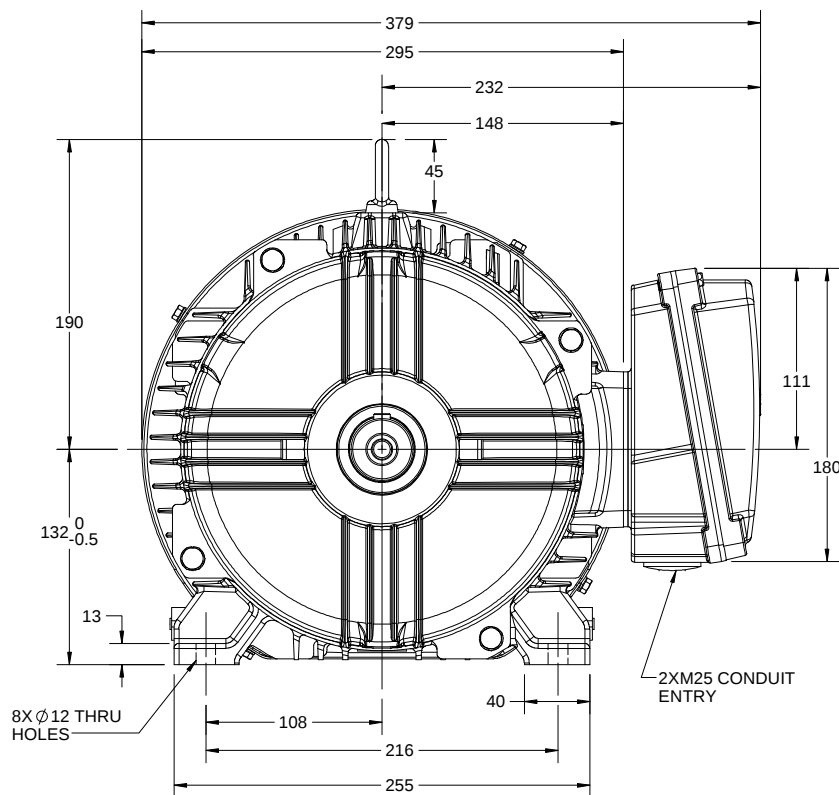
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# OUTLINE



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| DRAWING REVISION<br>B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | REVISION BY<br>BISWA | DATE<br>16/07/2018 |
| ECO<br>ECO-0148344                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | APPROVED BY<br>SBD   | DATE<br>16/07/2018 |
| ECO DESCRIPTION<br>DRAWING UPDATED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |                    |
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|                           |                                                                        |                              |
|---------------------------|------------------------------------------------------------------------|------------------------------|
| DRAWN BY<br>SN            |                                                                        |                              |
| DATE<br>11/08/2016        |                                                                        |                              |
| APPROVED BY<br>SBD        | DESCRIPTION<br><b>OUTLINE</b><br>132M FR- B3 MTG. TYPE: TCA/QCA-RHS TB |                              |
| DATE<br>11/08/2016        |                                                                        |                              |
| REFERENCE                 | MATERIAL                                                               | PROCESS/FINISH               |
| THIRD ANGLE<br>PROJECTION | SIZE<br>B                                                              | DRAWING NUMBER<br>0213200966 |
|                           |                                                                        | SHEET<br>1 OF 1              |

| DRAWING REVISION    | REVISION BY | DATE       |
|---------------------|-------------|------------|
| A                   | SN          | 13/01/2017 |
| ECO-0116390         | APPROVED BY | DATE       |
| ECO DESCRIPTION     | SBD         | 13/01/2017 |
| NEW DRAWING RELEASE |             |            |

| GEOMETRIC TOLERANCE |      |  |
|---------------------|------|--|
| LINEAR DIM          |      |  |
| >0-6                | ±0.1 |  |
| >6-30               | ±0.2 |  |
| >30-120             | ±0.3 |  |



NOTES:

1. PRESSURE-SENSITIVE ADHESIVE COATED PAPER ON THE BACK OF SELF-ADHESIVE.
2. AT THE END OF YELLOW, WORDS, SYMBOLS, LETTERS ARE BLACK, BORDER IS BLACK.
3. THE TOLERANCE OF THE LINEAR SIZE OF THE TOLERANCE WITHOUT THE TOLERANCE BY THE TABLE.

8WD.442.2017

|                            |  |                        |
|----------------------------|--|------------------------|
| DRAWN BY                   |  | SN                     |
| DATE                       |  | 16/12/2016             |
| APPROVED BY                |  | SBD                    |
| DATE                       |  | 16/12/2016             |
| REFERENCE                  |  |                        |
| THIRD ANGLE PROJECTION     |  |                        |
| SIZE                       |  | A                      |
| DRAWING NUMBER             |  | 8442000085             |
| SHEET                      |  | 1 OF 1                 |
| MATERIAL                   |  | PROCESS/FINISH         |
| DESCRIPTION                |  | CONN DIAGRAM-NAMEPLATE |
| Regal Beloit America, Inc. |  |                        |

**Model No.** TCA0043A3113GACD01

| U<br>(V) | Δ / Y<br>Conn | f<br>(Hz) | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[RPM] | T<br>[Nm] | IE<br>Class | % EFF at __ load |    |       |       | PF at __ load |       |       | I <sub>a</sub> /I <sub>N</sub><br>[pu] | T <sub>a</sub> /T <sub>N</sub><br>[pu] | T <sub>b</sub> /T <sub>N</sub><br>[pu] |
|----------|---------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|----|-------|-------|---------------|-------|-------|----------------------------------------|----------------------------------------|----------------------------------------|
| 415      | Δ             | 50        | 4         | 5.5       | 8.5      | 972        | 40.36     | IE3         | 5/4FL            | FL | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL | 5.6                                    | 2.0                                    | 2.5                                    |
|          |               |           |           |           |          |            |           |             |                  |    |       |       |               |       |       |                                        |                                        |                                        |

|                                  |                            |                                           |                                            |
|----------------------------------|----------------------------|-------------------------------------------|--------------------------------------------|
| Motor type                       | TCA                        | Degree of protection                      | IP 55                                      |
| Enclosure                        | TEFC                       | Mounting type                             | IM B3                                      |
| Frame Material                   | Cast Iron                  | Cooling method                            | IC 411                                     |
| Frame size                       | 132M                       | Motor weight - approx.                    | 74 kg                                      |
| Duty                             | S1                         | Gross weight - approx.                    | 77 kg                                      |
| Voltage variation *              | ± 10%                      | Motor inertia                             | 0.0494 kgm <sup>2</sup>                    |
| Frequency variation *            | ± 5%                       | Load inertia                              | Customer to Provide                        |
| Combined variation *             | 10%                        | Vibration level                           | 1.6 mm/s                                   |
| Design                           | N                          | Noise level ( 1meter distance from motor) | 59 dB(A)                                   |
| Service factor                   | 1.0                        | No. of starts hot/cold/Equally spread     | 2/3/4                                      |
| Insulation class                 | F                          | Starting method                           | DOL                                        |
| Ambient temperature              | -20 to +50 °C              | Type of coupling                          | Direct                                     |
| Temperature rise (by resistance) | 70 [ Class B ] K           | LR withstand time (hot/cold)              | 15/30 s                                    |
| Altitude above sea level         | 1000 meter                 | Direction of rotation                     | Bi-directional                             |
| Hazardous area classification    | NA                         | Standard rotation                         | Clockwise form DE                          |
| Zone classification              | NA                         | Paint shade                               | RAL 5014                                   |
| Gas group                        | NA                         | Accessories                               |                                            |
| Temperature class                | NA                         | Accessory - 1                             | -                                          |
| Rotor type                       | Aluminum Die cast          | Accessory - 2                             | -                                          |
| Bearing type                     | Anti-friction ball bearing | Accessory - 3                             | -                                          |
| DE / NDE bearing                 | 6308-2Z / 6208-2Z          | Terminal box position                     | RHS                                        |
| Lubrication method               | Greased for life           | Maximum cable size/conduit size           | 1R x 3C x 16mm <sup>2</sup> /2 x M25 x 1.5 |
| Type of grease                   | NA                         | Auxiliary terminal box                    | NA                                         |

I<sub>a</sub>/I<sub>N</sub> - Locked Rotor Current / Rated CurrentT<sub>b</sub>/T<sub>N</sub> - Breakdown Torque / Rated TorqueT<sub>a</sub>/T<sub>N</sub> - Locked Rotor Torque / Rated Torque**NOTE**

All performance values at rated voltage and frequency.

All performance parameters are subjected to standard tolerance as per IEC 60034-1

\* Voltage, Frequency and combine variation are as per IEC60034-1

Technical data are subject to change. There may be discrepancies between calculated and name plate values.

| Efficiency Standards | Europe | China | India           | Aus/Nz | Brazil | Global IEC |
|----------------------|--------|-------|-----------------|--------|--------|------------|
|                      | -      | -     | IS 12615 : 2018 | -      | -      | -          |



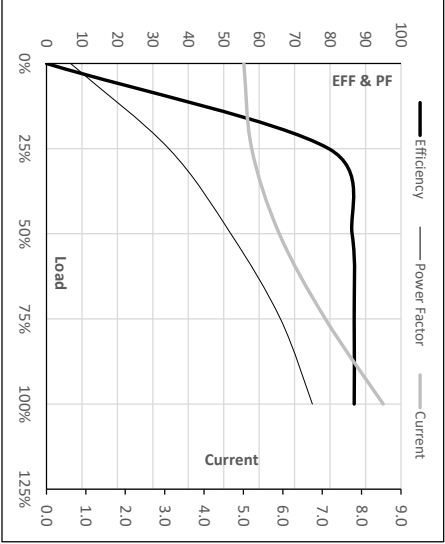
Model No. TCA0043A3113GACD01

| Enclosure | U<br>[V] | $\Delta$ / Y<br>Com | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[RPM] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg·m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|---------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TFC       | 415      | $\Delta$            | 50        | 4         | 5.5       | 8.5      | 972        | 4.12       | 40.36     | IE3         | 50          | S1   | 1000             | 0.0494                          | 74             |

Motor Load Data

| Load Point   | NL    | 1/4FL | 1/2FL | 3/4FL | FL   | 5/4FL |
|--------------|-------|-------|-------|-------|------|-------|
| Current      | A     | 5.0   | 5.2   | 5.9   | 7.1  | 8.5   |
| Torque       | Nm    | 0.0   | 9.9   | 19.9  | 30.0 | 40.4  |
| Speed        | r/min | 1000  | 993   | 987   | 980  | 972   |
| Efficiency   | %     | 0.0   | 79.6  | 86.2  | 86.8 | 86.8  |
| Power Factor | %     | 6.8   | 34.5  | 52.0  | 66.0 | 75.0  |

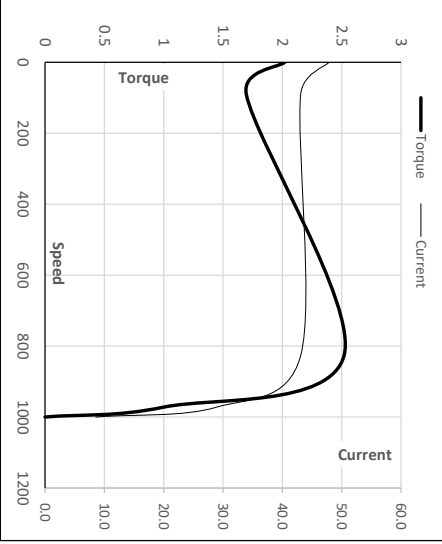
Performance vs Load Chart



Motor Speed Torque Data

| Load Point | LR    | P-Up | BD   | Rated | NL  |      |
|------------|-------|------|------|-------|-----|------|
| Speed      | r/min | 0    | 91   | 827   | 972 | 1000 |
| Current    | A     | 47.9 | 43.1 | 28.9  | 8.5 | 5.0  |
| Torque     | pu    | 2.0  | 1.7  | 2.5   | 1   | 0    |

Starting Characteristics Chart



NOTE Refer data sheet for applicable standard and tolerances on performance parameters

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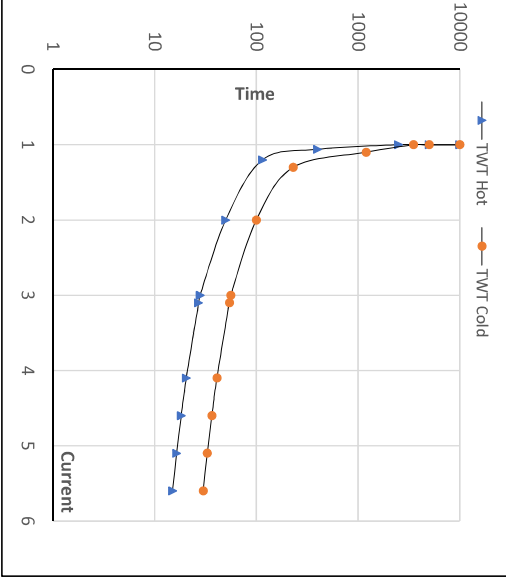
**Model No.** TCA0043A3113GACD01

| Enclosure | U<br>(V) | Δ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[rpm] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg·m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 415      | Δ             | 50        | 4         | 5.5       | 8.5      | 972        | 4.11       | 40.36     | IE3         | 50          | S1   | 1000             | 0.0494                          | 74             |

**Motor Speed Torque Data**

| Load     | FL | I <sub>1</sub> | I <sub>2</sub> | I <sub>3</sub> | I <sub>4</sub> | I <sub>5</sub> | LR  |     |
|----------|----|----------------|----------------|----------------|----------------|----------------|-----|-----|
| TWT Hot  | s  | 10000          | 50             | 28             | 21             | 17             | 16  | 15  |
| TWT Cold | s  | 10000          | 100            | 56             | 42             | 34             | 31  | 30  |
| Current  | pu | 1              | 2              | 3              | 4              | 5              | 5.5 | 5.6 |

**Thermal Characteristics Chart**



**NOTE** Refer data sheet for applicable standard and tolerances on performance parameters

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