

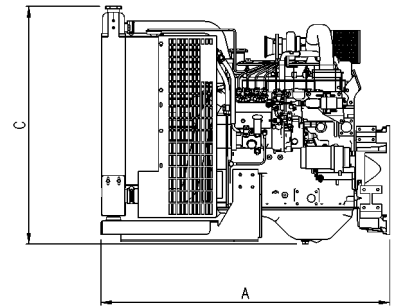
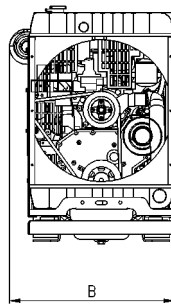
**ژنراتور : Mecc Alte**

**موتور دیزل : Cummins**

| Standby |    | Prime |     |              |
|---------|----|-------|-----|--------------|
| KVA     | KW | KVA   | KW  |              |
| 350     | -  | 320   | 256 | دیزل ژنراتور |



# NT855-G6



## > Specification sheet

Our energy working for you.™



### Description

The Cummins NT-Series engines have been service proven through millions of hours of operation in some of the world's most demanding applications. The 14 litre, six-cylinder NT855 has been engineered to handle higher injection pressures, with redesigned overhead arrangement, pistons, crankshaft and camshaft. A gear train with high contact ratio spur gears also eliminates unwanted thrust loads and reduces noise.



This engine has been built to comply with CE certification.



This engine has been designed in facilities certified to ISO9001 and manufactured in facilities certified to ISO9001 or ISO9002.

### Features

**Cylinder Block** - Alloy cast iron with removable wet liners.

**Cylinder Heads** - Alloy cast iron. Each head serves two cylinders. Drilled fuel supply and return lines. V valve seat inserts are replaceable and corrosion resistant. V valve and crosshead guides are replaceable.

**Cylinder Liners** - Replaceable wet liners dissipate heat faster than dry liners and are easily replaced without reboring the block.

**Fuel System** - Cummins PT™ self adjusting system. Integral dual flyweight governor provides overspeed protection independent of main governor. Camshaft actuated fuel injectors give accurate metering and timing. Dual spin-on fuel filters.

**Coolpac Integrated Design** - products are supplied complete with cooling package and air cleaner kit for a complete power package. Each component has been specifically developed and rigorously tested for G-Drive products, ensuring high performance, durability and reliability.

**Service and Support** - G-Drive products are backed by an uncompromising level of technical support and after sales service, delivered through a world class service network.

### 1500 rpm (50 Hz) Ratings

| Gross Engine Output |         |         | Net Engine Output |         |         | Typical Generator Set Output |     |             |     |            |     |
|---------------------|---------|---------|-------------------|---------|---------|------------------------------|-----|-------------|-----|------------|-----|
| Standby             | Prime   | Base    | Standby           | Prime   | Base    | Standby (ESP)                |     | Prime (PRP) |     | Base (COP) |     |
| kWm/BHP             |         |         | kWm/BHP           |         |         | kWe                          | kVA | kWe         | kVA | kWe        | kVA |
| 310/416             | 280/375 | 231/310 | 310/415           | 280/375 | 231/309 | 280                          | 350 | 256         | 320 | 207        | 259 |

### 1800 rpm (60 Hz) Ratings

| Gross Engine Output |         |         | Net Engine Output |         |         | Typical Generator Set Output |     |             |     |            |     |
|---------------------|---------|---------|-------------------|---------|---------|------------------------------|-----|-------------|-----|------------|-----|
| Standby             | Prime   | Base    | Standby           | Prime   | Base    | Standby (ESP)                |     | Prime (PRP) |     | Base (COP) |     |
| kWm/BHP             |         |         | kWm/BHP           |         |         | kWe                          | kVA | kWe         | kVA | kWe        | kVA |
| 325/436             | 295/396 | 254/341 | 311/417           | 281/377 | 240/322 | 285                          | 356 | 260         | 325 | 222        | 277 |

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**Power  
Generation**

## General Engine Data

|                             |                                           |
|-----------------------------|-------------------------------------------|
| Type                        | 4 cycle, in-line, Turbocharged            |
| Bore mm                     | 140 mm (5.5 in.)                          |
| Stroke mm                   | 152 mm (6.0 in.)                          |
| Displacement Litre          | 14.0 litre (855 in. <sup>3</sup> )        |
| Cylinder Block              | Cast iron, 6 cylinder                     |
| Battery Charging Alternator | 55 amps                                   |
| Starting Voltage            | 24 volt, negative ground                  |
| Fuel System                 | Direct injection                          |
| Fuel Filter                 | Spin-on fuel filters with water separator |
| Lube Oil Filter Type(s)     | Spin-on full flow filter                  |
| Lube Oil Capacity (l)       | 38.6                                      |
| Flywheel Dimensions         | 1/14                                      |

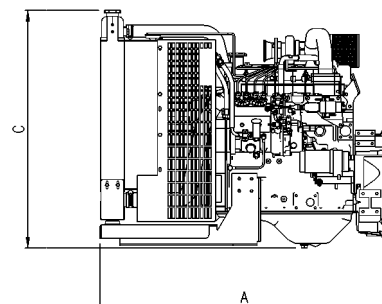
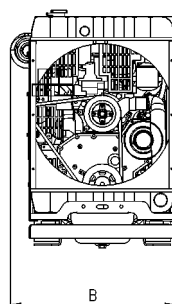
## Coolpac Performance Data

|                                               |                                                    |
|-----------------------------------------------|----------------------------------------------------|
| Cooling System Design                         | Jacket Water                                       |
| Coolant Ratio                                 | 50% ethylene glycol; 50% water                     |
| Coolant Capacity (l)                          | 45.0                                               |
| Limiting Ambient Temp.**                      | 58.0                                               |
| Fan Power                                     | 11.6                                               |
| Cooling system air flow (m <sup>3</sup> /s)** | 7.6                                                |
| Air Cleaner Type                              | Dry replaceable element with restriction indicator |

\*\* @ 13 mm H<sub>2</sub>O

## Weights & Dimension

| Length | Width | Height | Weight (dry) |
|--------|-------|--------|--------------|
| mm     | mm    | mm     | kg           |
| 2055   | 990   | 1535   | 1410         |



## Fuel Consumption 1500 (50 Hz)

| %                       | kWm | BHP | L/ph | US gal/ph |
|-------------------------|-----|-----|------|-----------|
| <b>Standby Power</b>    |     |     |      |           |
| <b>100</b>              | 310 | 416 | 76   | 19.8      |
| <b>Prime Power</b>      |     |     |      |           |
| <b>100</b>              | 280 | 375 | 69   | 17.9      |
| <b>75</b>               | 210 | 282 | 52   | 13.5      |
| <b>50</b>               | 140 | 188 | 36   | 9.4       |
| <b>25</b>               | 70  | 94  | 20   | 5.2       |
| <b>Continuous Power</b> |     |     |      |           |
| <b>100</b>              | 231 | 310 | 57   | 14.8      |

## Fuel Consumption 1800 (60 Hz)

| %                       | kWm | BHP | L/ph | US gal/ph |
|-------------------------|-----|-----|------|-----------|
| <b>Standby Power</b>    |     |     |      |           |
| <b>100</b>              | 325 | 436 | 82   | 21.3      |
| <b>Prime Power</b>      |     |     |      |           |
| <b>100</b>              | 295 | 396 | 74   | 19.2      |
| <b>75</b>               | 221 | 297 | 56   | 14.6      |
| <b>50</b>               | 148 | 198 | 40   | 10.4      |
| <b>25</b>               | 74  | 99  | 23   | 6.0       |
| <b>Continuous Power</b> |     |     |      |           |
| <b>100</b>              | 254 | 341 | 64   | 16.6      |

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## Ratings Definitions

### Emergency Standby Power (ESP):

Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

### Limited-Time Running Power (LTP):

Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

### Prime Power (PRP):

Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten per cent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

### Base Load (Continuous) Power (COP):

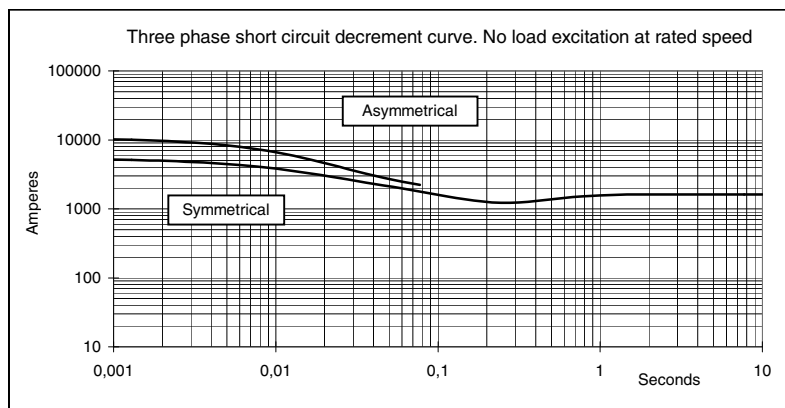
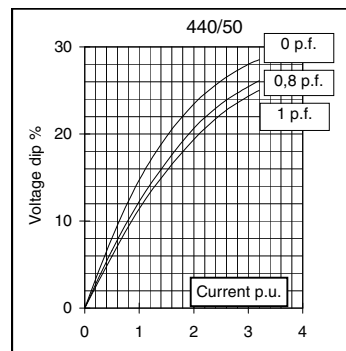
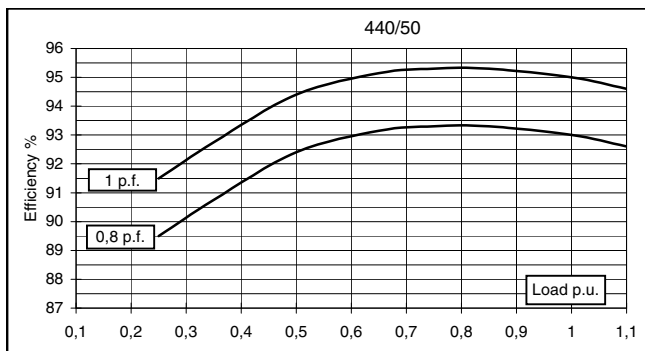
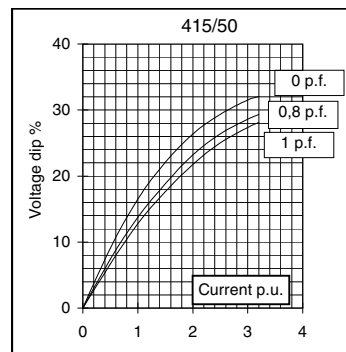
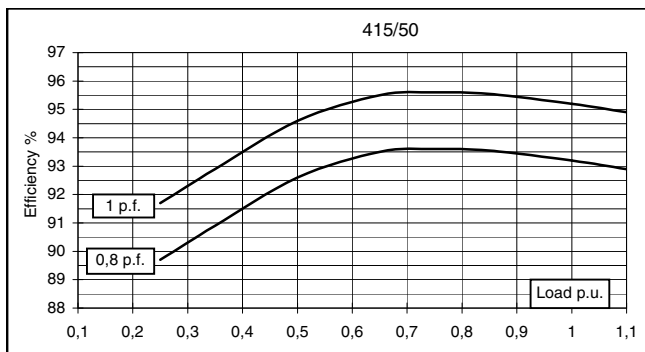
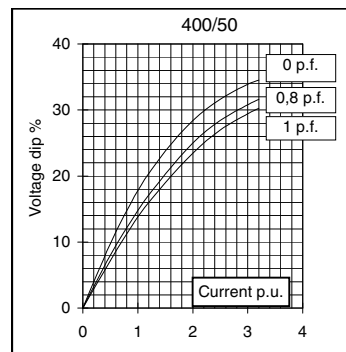
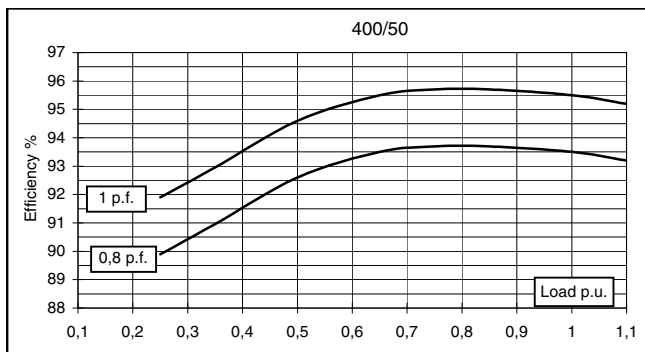
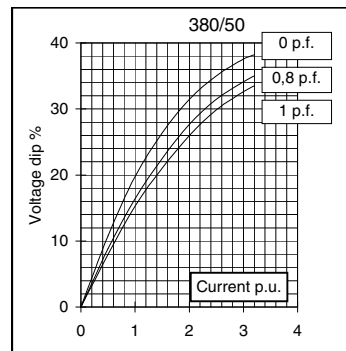
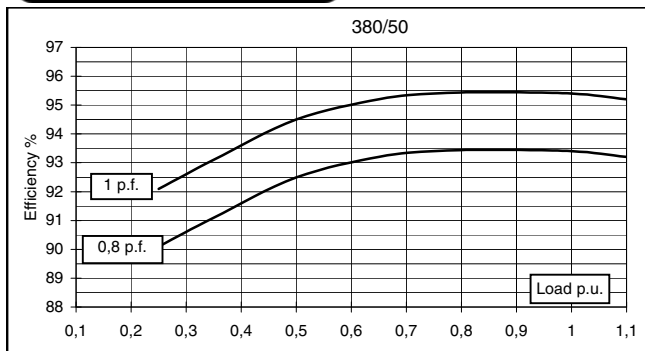
Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

| Electrical Characteristics           |                |                                                                 |                                                                  |       |       |                |       |       |       |      |
|--------------------------------------|----------------|-----------------------------------------------------------------|------------------------------------------------------------------|-------|-------|----------------|-------|-------|-------|------|
| Frequency                            |                | Hz                                                              | 50                                                               |       |       |                | 60    |       |       |      |
| Voltage (series star)                |                | V                                                               | 380                                                              | 400   | 415   | 440            | 415   | 440   | 460   | 480  |
| Rated power class H                  |                | kVA                                                             | 350                                                              | 350   | 350   | 340            | 380   | 420   | 420   | 420  |
|                                      |                | kW                                                              | 280                                                              | 280   | 280   | 272            | 304   | 336   | 336   | 336  |
| Rated power class F                  |                | kVA                                                             | 320                                                              | 320   | 320   | 310            | 350   | 385   | 385   | 385  |
|                                      |                | kW                                                              | 256                                                              | 256   | 256   | 248            | 280   | 308   | 308   | 308  |
| Regulation with DSR                  |                |                                                                 | ±1 % with any power factor and speed variations between -5% +30% |       |       |                |       |       |       |      |
| Insulation class                     |                |                                                                 | H                                                                |       |       |                |       |       |       |      |
| Execution                            |                |                                                                 | Brushless                                                        |       |       |                |       |       |       |      |
| Stator winding                       |                |                                                                 | 12 ends                                                          |       |       |                |       |       |       |      |
| Rotor                                |                |                                                                 | with damping cage                                                |       |       |                |       |       |       |      |
| Efficiencies class H                 | 4/4            | %                                                               | 93,4                                                             | 93,5  | 93,2  | 93             | 93,6  | 94,1  | 94,2  | 94,3 |
| (see graph. for details)             | 3/4            | %                                                               | 93,4                                                             | 93,7  | 93,6  | 93,3           | 93,9  | 94,1  | 94,3  | 94,5 |
|                                      | 2/4            | %                                                               | 92,5                                                             | 92,6  | 92,6  | 92,4           | 93    | 93,1  | 93,2  | 93,3 |
|                                      | 1/4            | %                                                               | 90,1                                                             | 89,9  | 89,7  | 89,5           | 90,6  | 90,6  | 90,6  | 90,4 |
|                                      |                |                                                                 |                                                                  |       |       |                |       |       |       |      |
| Reactances (f. l.cl. F)              | Xd             | %                                                               | 238,2                                                            | 215   | 199,7 | 172,6          | 260,2 | 255,9 | 234,1 | 215  |
|                                      | Xd'            | %                                                               | 19,1                                                             | 17,2  | 16,0  | 13,8           | 20,8  | 20,5  | 18,7  | 17,2 |
|                                      | Xd"            | %                                                               | 10,4                                                             | 9,4   | 8,7   | 7,5            | 11,4  | 11,2  | 10,2  | 9,4  |
|                                      | Xq             | %                                                               | 139,6                                                            | 126   | 117,1 | 101,2          | 152,5 | 150,0 | 137,2 | 126  |
|                                      | Xq'            | %                                                               | 139,6                                                            | 126   | 117,1 | 101,2          | 152,5 | 150,0 | 137,2 | 126  |
|                                      | Xq"            | %                                                               | 22,3                                                             | 20,1  | 18,7  | 16,1           | 24,3  | 23,9  | 21,9  | 20,1 |
|                                      | X <sub>2</sub> | %                                                               | 17,4                                                             | 15,7  | 14,6  | 12,6           | 19,0  | 18,7  | 17,1  | 15,7 |
|                                      | X <sub>0</sub> | %                                                               | 2,4                                                              | 2,2   | 2,0   | 1,8            | 2,7   | 2,6   | 2,4   | 2,2  |
| Short Circuit Ratio                  | Kcc            |                                                                 | 0,37                                                             | 0,42  | 0,57  | 0,92           | 0,24  | 0,32  | 0,37  | 0,42 |
| Time Constants                       | Td'            | sec.                                                            | 0,099                                                            |       |       |                |       |       |       |      |
|                                      | Td"            | sec.                                                            | 0,0127                                                           |       |       |                |       |       |       |      |
|                                      | Tdo'           | sec.                                                            | 1,50                                                             |       |       |                |       |       |       |      |
|                                      | Tα             | sec.                                                            | 0,013                                                            |       |       |                |       |       |       |      |
| Short Circuit Current Capacity       |                | %                                                               | >300                                                             |       |       |                | >350  |       |       |      |
| Excitation at no load                | Amp.           |                                                                 | 0,55                                                             | 0,72  | 0,95  | 1,2            | 0,35  | 0,35  | 0,6   | 0,7  |
| Excitation at full load              | Amp.           |                                                                 | 3,5                                                              | 3,9   | 4,1   | 4,3            | 3,3   | 3,5   | 3,7   | 3,9  |
| Overload (long-term)                 | %              | 1 hour in a 6 hours period 110% rated load                      |                                                                  |       |       |                |       |       |       |      |
| Overload per 20 sec.                 | %              | 300                                                             |                                                                  |       |       |                |       |       |       |      |
| Stator Winding Resistance (20°C)     | Ω              | 0,0042                                                          |                                                                  |       |       |                |       |       |       |      |
| Rotor Winding Resistance (20°C)      | Ω              | 6,780                                                           |                                                                  |       |       |                |       |       |       |      |
| Exciter Resistance (20 °C)           | Ω              | Rotor : 0,685                                                   |                                                                  |       |       | Stator : 15,28 |       |       |       |      |
| Heat dissipation at f.l.cl.H         | W              | 19786                                                           | 19465                                                            | 20429 | 20473 | 20786          | 21067 | 20688 | 20310 |      |
| Telephone Interference               |                | THF < 2%                                                        |                                                                  |       |       | TIF < 40       |       |       |       |      |
| Radio interference                   |                | EN61000-6-3, EN61000-6-2. For others standards apply to factory |                                                                  |       |       |                |       |       |       |      |
| Waveform Distors.(THD) at f. load    | LL/LN %        | 3,1 / 2,9                                                       |                                                                  |       |       |                |       |       |       |      |
| Waveform Distors.(THD) at no load    | LL/LN %        | 2,7 / 2,7                                                       |                                                                  |       |       |                |       |       |       |      |
| Mechanical characteristics           |                |                                                                 |                                                                  |       |       |                |       |       |       |      |
| Protection                           |                | IP 21 (other protection on request )                            |                                                                  |       |       |                |       |       |       |      |
| DE bearing                           |                | 6318.2RS                                                        |                                                                  |       |       |                |       |       |       |      |
| NDE bearing                          |                | 6314.2RS                                                        |                                                                  |       |       |                |       |       |       |      |
| Weight of wound stator assembly      | kg             | 347                                                             |                                                                  |       |       |                |       |       |       |      |
| Weight of wound rotor assembly       | kg             | 230                                                             |                                                                  |       |       |                |       |       |       |      |
| Weight of complete generator         | kg             | 905                                                             |                                                                  |       |       |                |       |       |       |      |
| Maximun overspeed                    | rpm            | 2250                                                            |                                                                  |       |       |                |       |       |       |      |
| Unbalanced magnetic pull at f.l.cl.F | kN/mm          | 6,2                                                             |                                                                  |       |       |                |       |       |       |      |
| Cooling air requirement              | m³/min         | 32                                                              |                                                                  |       |       | 39             |       |       |       |      |
| Inertia Constant (H)                 | sec.           | 0,123                                                           |                                                                  |       |       | 0,147          |       |       |       |      |
| Noise level at 1m/7m                 | dB(A)          | 82 / 69                                                         |                                                                  |       |       | 86 / 73        |       |       |       |      |

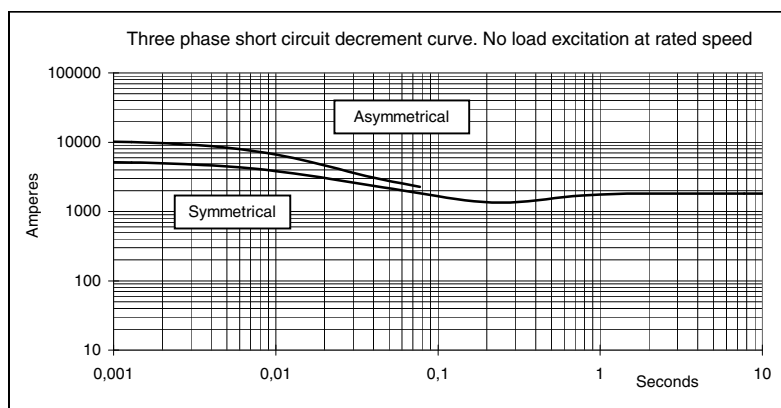
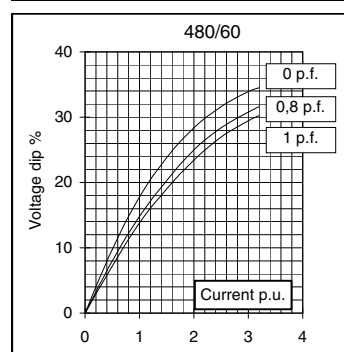
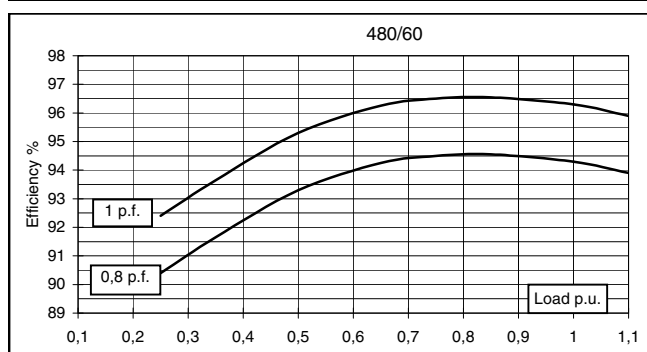
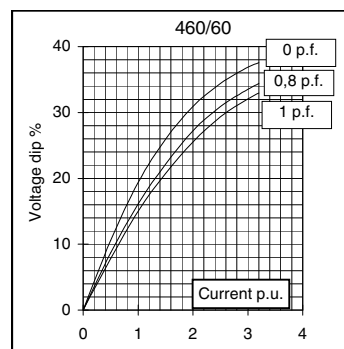
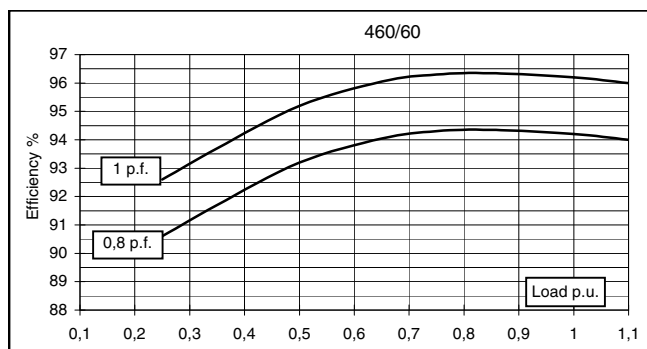
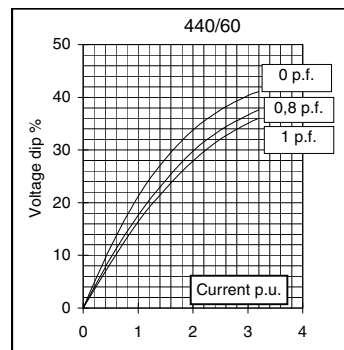
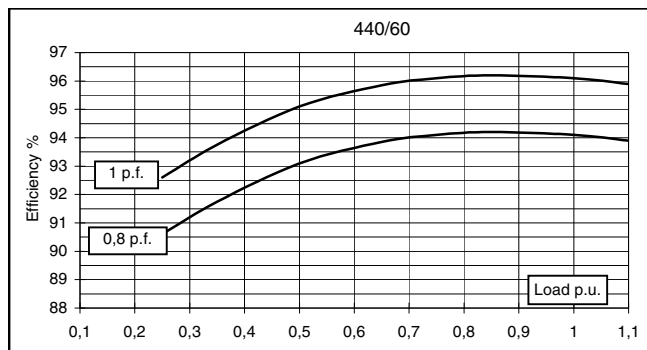
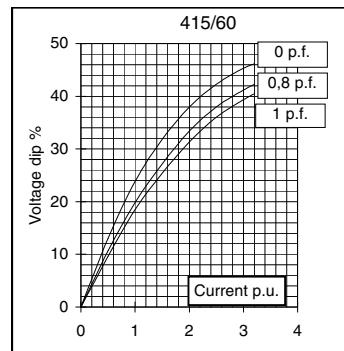
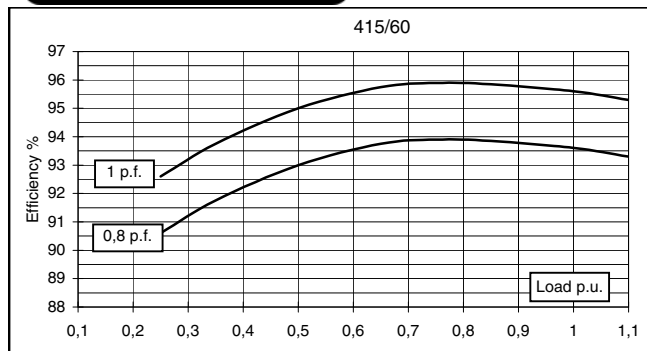
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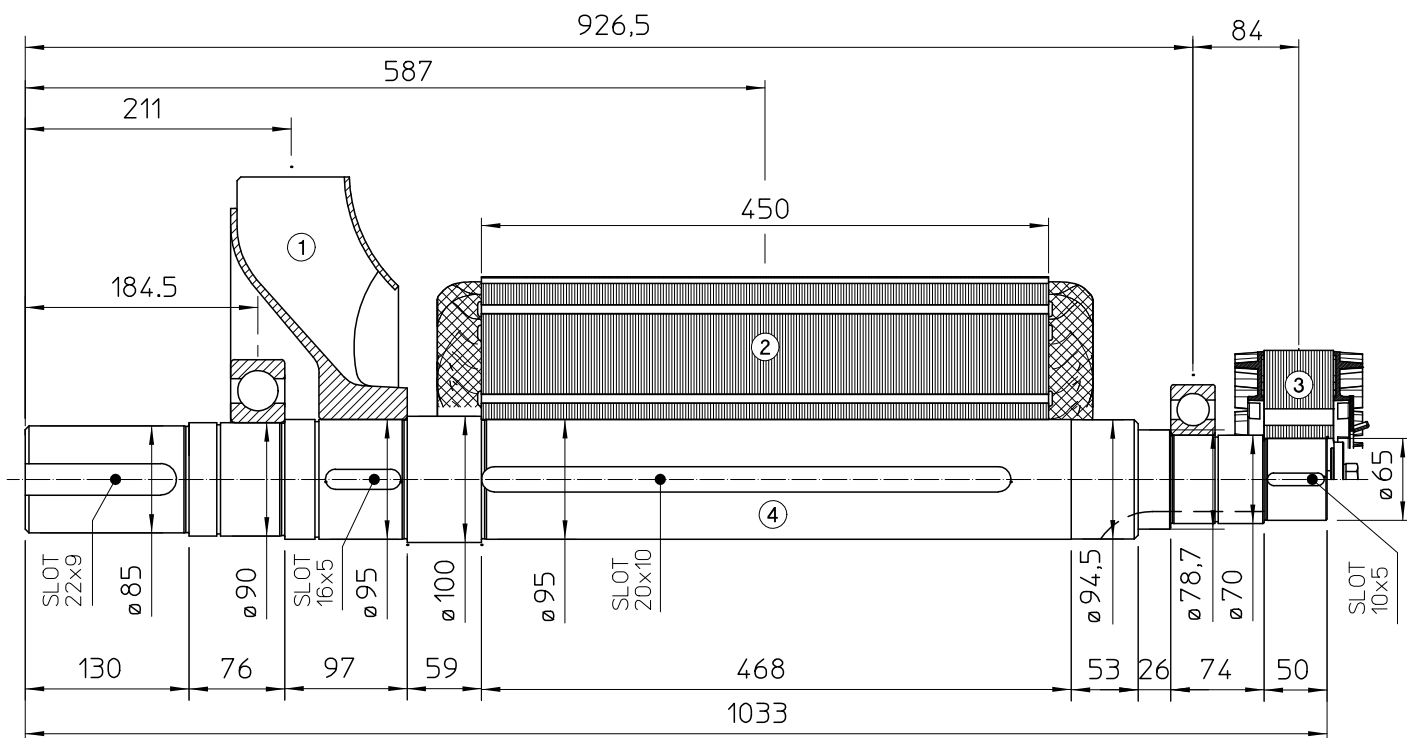
## 50 Hz



## 60 Hz

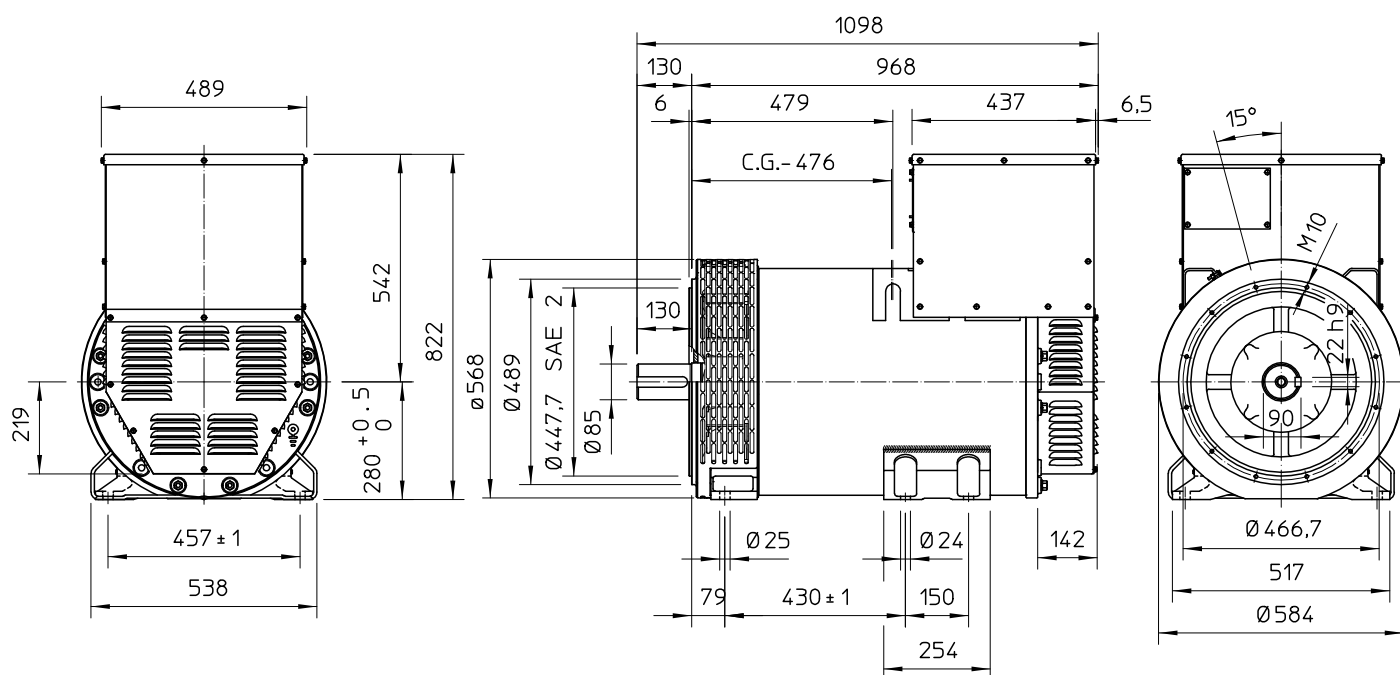


## TWO BEARING MOMENTS OF INERTIA

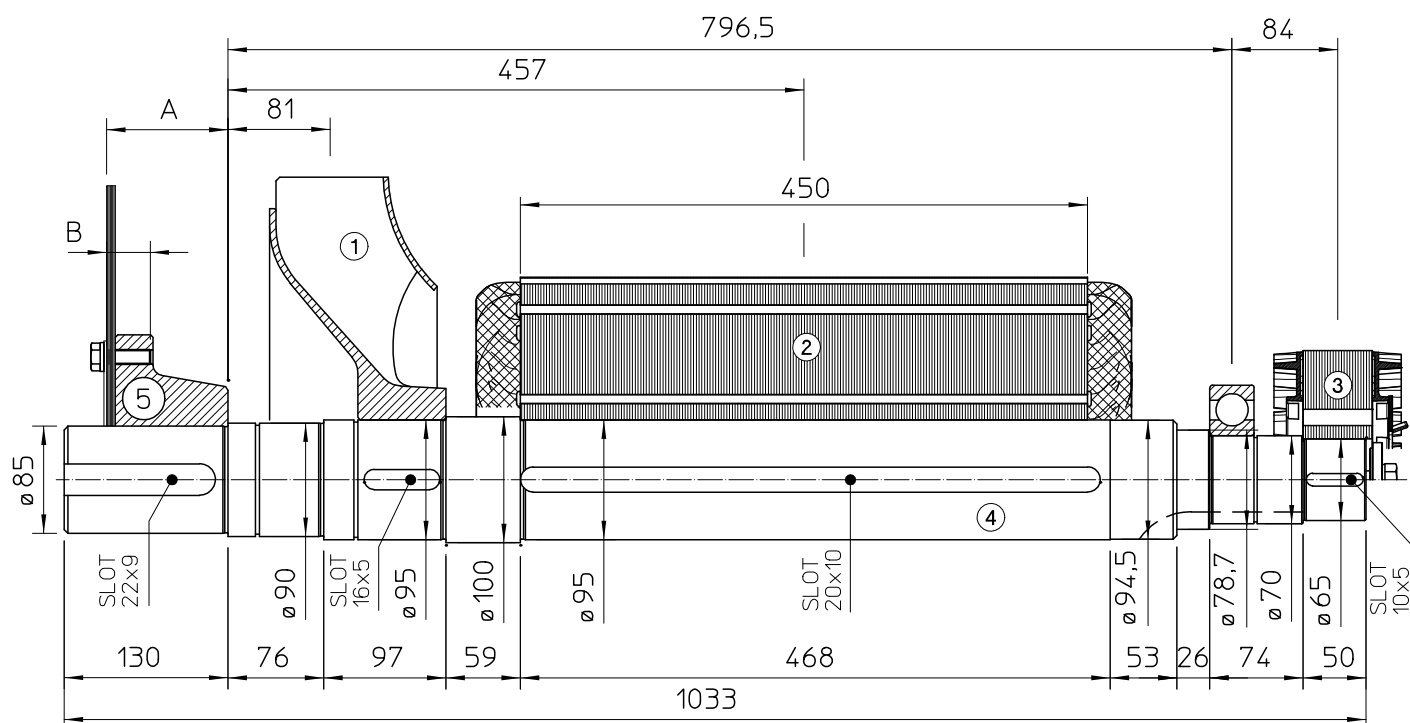


| POS.  | COMPONENT  | WEIGHT (kg) | J (kgm <sup>2</sup> ) |
|-------|------------|-------------|-----------------------|
| 1     | FAN        | 6.1         | 0.1887                |
| 2     | MAIN ROTOR | 230         | 3.1461                |
| 3     | EX. ROTOR  | 14.5        | 0.0874                |
| 4     | SHAFT      | 49.9        | 0.0525                |
| TOTAL |            | 300.5       | 3.4747                |

## TWO BEARING DIMENSIONS



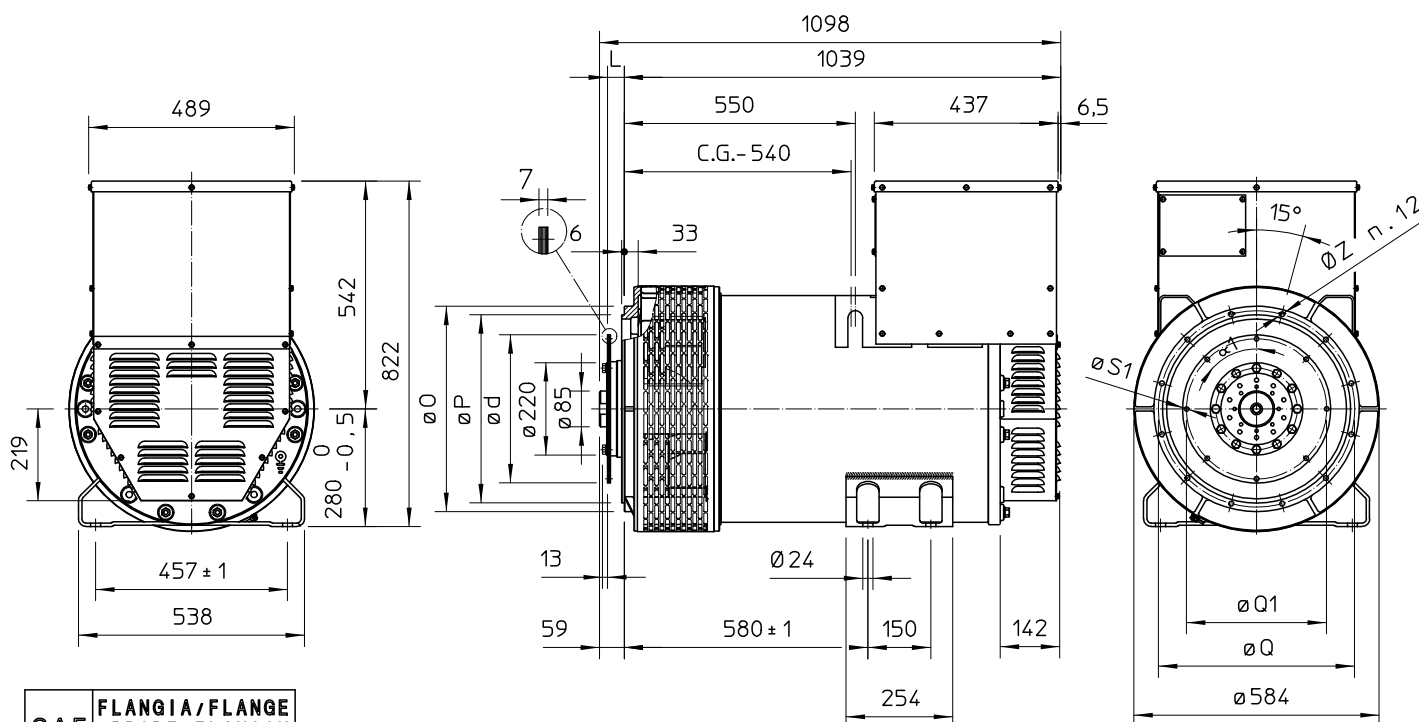
## SINGLE BEARING MOMENTS OF INERTIA



| POS.  | COMPONENT  | WEIGHT (kg) | J (kgm <sup>2</sup> ) |
|-------|------------|-------------|-----------------------|
| 1     | FAN        | 6.1         | 0.1887                |
| 2     | MAIN ROTOR | 230         | 3.1461                |
| 3     | EX. ROTOR  | 14.5        | 0.0874                |
| 4     | SHAFT      | 49.9        | 0.0525                |
| TOTAL |            | 300.5       | 3.4747                |

| SAE<br>N° | 5     | SHAFTS COUPLING FLEX PLATE |           |                    |
|-----------|-------|----------------------------|-----------|--------------------|
|           | A     | B                          | WEIGHT kg | J kgm <sup>2</sup> |
| 11.5      | 110.4 | 41.1                       | 20.5      | 0.174              |
| 14        | 96.4  | 34.7                       | 23.5      | 0.275              |

## SINGLE BEARING DIMENSIONS



| SAE<br>N. | FLANGIA/FLANGE<br>BRIDE/FLANSCH |       |       |
|-----------|---------------------------------|-------|-------|
|           | O                               | P     | Q     |
| 3         | 451                             | 409,6 | 428,6 |
| 2         | 489                             | 447,7 | 466,7 |
| 1         | 552                             | 511,2 | 530,2 |
| 1/2       | 648                             | 584,2 | 619,1 |

| SAE<br>N. | GIUNTI A DISCHI<br>DISC COUPLING<br>DISQUE DE MONOPALIER<br>SCHEIBENKUPPLUNG |        |        |            |    |     |  |
|-----------|------------------------------------------------------------------------------|--------|--------|------------|----|-----|--|
|           | L                                                                            | d      | Q1     | n.<br>fori | S1 | αC1 |  |
| 11 1/2    | 39,6                                                                         | 352,42 | 333,37 | 8          | 11 | 45° |  |
| 14        | 25,4                                                                         | 466,72 | 438,15 | 8          | 14 | 45° |  |

C.G.= GRAVITY CENTER