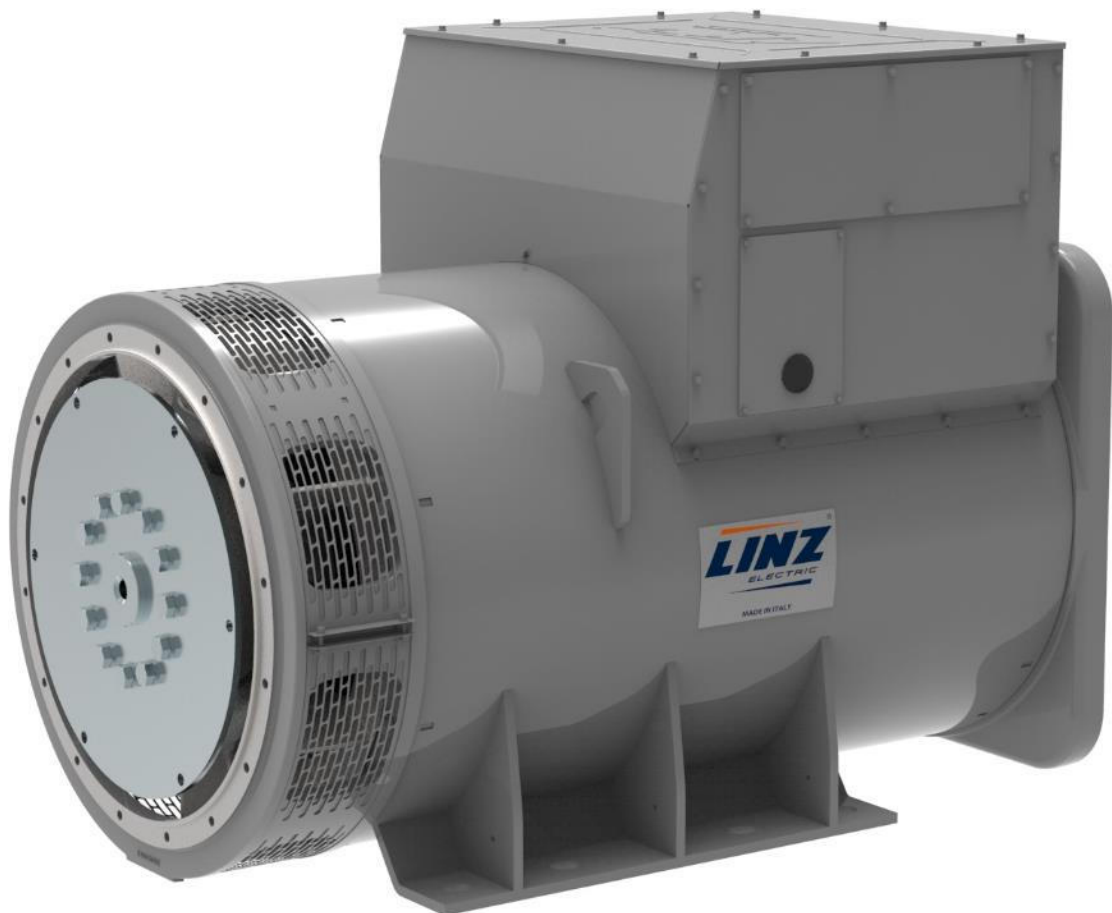


TECHNICAL DATA SHEET



ALTERNATOR PRO40M C/4

Three-Phase brushless synchronous alternator with AVR - 4 poles

PRO40M C/4

COMMON DATA

| | | | |
|----------------------|---------------------|--|-------------|
| Rated Power at 50Hz | kVA | 1150 | |
| Rated Power at 60Hz | kVA | 1400 | |
| Rated Power Factor | | 0,8 | |
| Nominal Temperature | °C | 40 | |
| Control System | | self-excited | |
| Execution | | brushless | |
| Regulation Type | | AVR | |
| Insulation Class | | H | |
| Protection | | IP23 | |
| Maximum Over speed | rpm | 2250 | |
| Overload | | 110% of rated power for one hour in a cycle of 6 hours | |
| Air Flow Requirement | m ³ /min | 94 at 50Hz | 113 at 60Hz |
| R.F.I. Suppression | | Standard EN55011 | |

REGULATION DATA

| | | |
|-------------------------|--|-------------------------|
| AVR | | HVR30 |
| Sensing | | three-phase |
| Voltage Regulation | | ±1% |
| Sustained Short Circuit | | > 300% of rated current |

WINDING DATA

| | | | |
|---------------------------|-----|-------------------------------------|--|
| Stator Winding | | Double layer with auxiliary winding | |
| Rotor Winding | | with damping cage | |
| Winding Pitch | | 2/3 | |
| Number of Leads of Stator | | 6* | |
| Stator Winding Resistance | Ω | 0,0071 at 20°C | |
| Rotor Winding Resistance | Ω | 0,745 at 20°C | |
| Exciter Stator Resistance | Ω | 13,3 at 20°C | |
| Exciter Rotor Resistance | Ω | 0,051 at 20°C | |
| THD at full load | | <3% | |
| THD at no load | | <3% | |
| Excitation at no load | Adc | 0,62 | |
| Excitation at full load | Adc | 2,88 | |

Note (*): 230/400V - 460/800V 50Hz
277/480V - 554/960V 60Hz

STANDARD

| | | |
|------------|--|-----------------------------|
| References | | EN60034-1 ISO8528-3 EN55011 |
|------------|--|-----------------------------|

PRO40M C/4

ELECTRICAL DATA

| Frequency | | 50Hz - 1500rpm | | | | 60Hz - 1800rpm | | | |
|--|-----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Voltage Series Star | V | 380/220 | 400/230 | 415/240 | 440/254 | 415/240 | 440/254 | 460/266 | 480/277 |
| Rated Power in Class H (125°C/40°C) | kVA | 1150 | 1150 | 1150 | 1100 | 1250 | 1350 | 1400 | 1400 |
| | kW | 920 | 920 | 920 | 880 | 1000 | 1080 | 1120 | 1120 |
| Rated Power in Class F (105°C/40°C) | kVA | 1050 | 1050 | 1050 | 1000 | 1150 | 1250 | 1300 | 1300 |
| | kW | 840 | 840 | 840 | 800 | 920 | 1000 | 1040 | 1040 |
| Rated Power Standby (150°C/40°C) | kVA | 1360 | 1360 | 1360 | 1150 | 1300 | 1400 | 1500 | 1500 |
| | kW | 1008 | 1008 | 1008 | 920 | 1040 | 1120 | 1200 | 1200 |
| Rated Power Standby (163°C/27°C) | kVA | 1300 | 1300 | 1300 | 1200 | 1390 | 1500 | 1560 | 1560 |
| | kW | 1040 | 1040 | 1040 | 960 | 1112 | 1200 | 1248 | 1248 |

EFFICIENCY IN CL. H

| | | | | | | | | |
|-----|-------|--|--|--|--|--|--|-------|
| 4/4 | 95,8% | | | | | | | 96,5% |
| 3/4 | 96,1% | | | | | | | 96,7% |
| 2/4 | 95,0% | | | | | | | 95,8% |
| 1/4 | 92,2% | | | | | | | 93,4% |

REACTANCES AND TIME CONSTANTS

| | | | | | | | | | |
|--|--|-------|-------|-------|-------|--------|-------|-------|-------|
| pcc | | 0,33 | | | | | | | |
| X _d - dir. axis synchronous | | 228% | 206% | 191% | 163% | 246% | 236% | 224% | 206% |
| X' _d - dir. axis transient | | 34,7% | 31,3% | 29,1% | 24,7% | 37,4% | 35,9% | 34,1% | 31,3% |
| X'' _d - dir. axis subtransient | | 14,8% | 13,4% | 12,4% | 10,6% | 16,0% | 15,4% | 14,6% | 13,4% |
| X _q - quad. axis reactance | | 121% | 109% | 101% | 86% | 130% | 125% | 119% | 109% |
| T' _{do} - O.C. field time constant | | | | | | 1751ms | | | |
| T' _d - Transient time constant | | | | | | 194ms | | | |
| T'' _d - Sub-transient time constant | | | | | | 20ms | | | |

MECHANICAL DATA

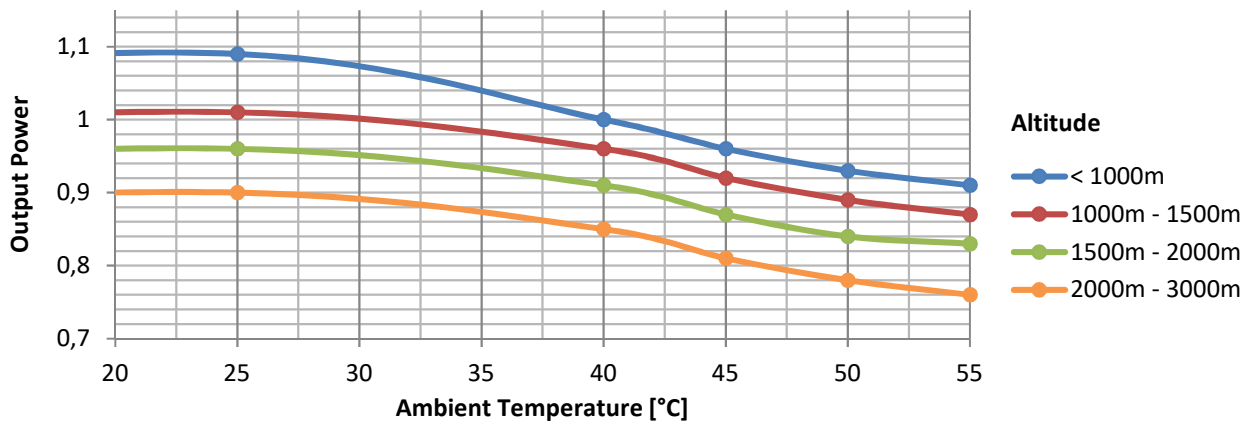
| | | | | |
|---------------------------------|-----------|----|--|--------------|
| Bearing non drive end | | | | 6318-2RS1-C3 |
| Bearing drive end (B3/B14 form) | | | | 6324-C3 |
| Weight of generator | in B2 | kg | | 2252 |
| | in B3/B14 | kg | | 2307 |

PRO40M C/4

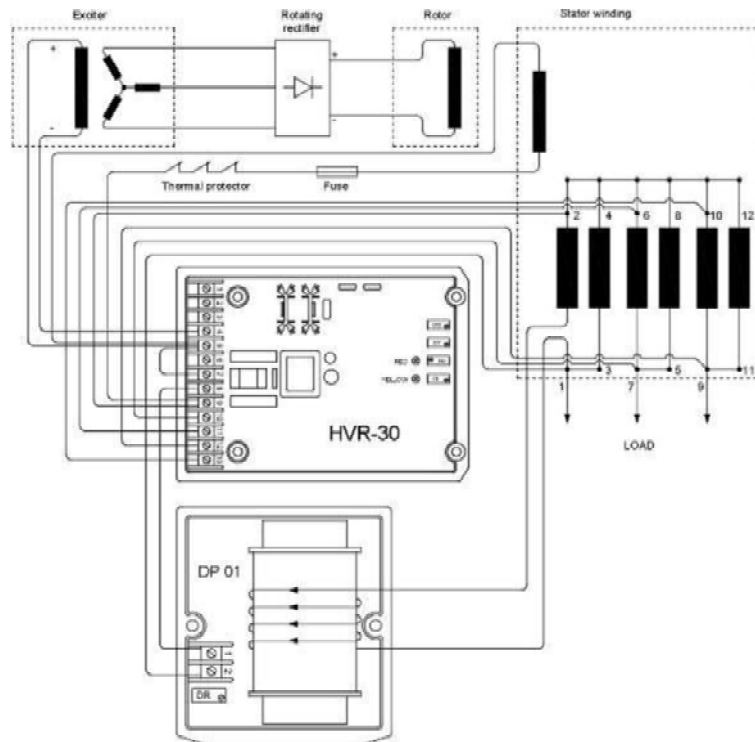
MOMENT OF INERZIA

| | | |
|--------|-------------------|--------|
| SAE 14 | kg·m ² | 20,191 |
| SAE 18 | kg·m ² | 20,584 |
| SAE 21 | kg·m ² | 21,233 |
| B3/B14 | kg·m ² | 19,167 |

DERATING CURVES



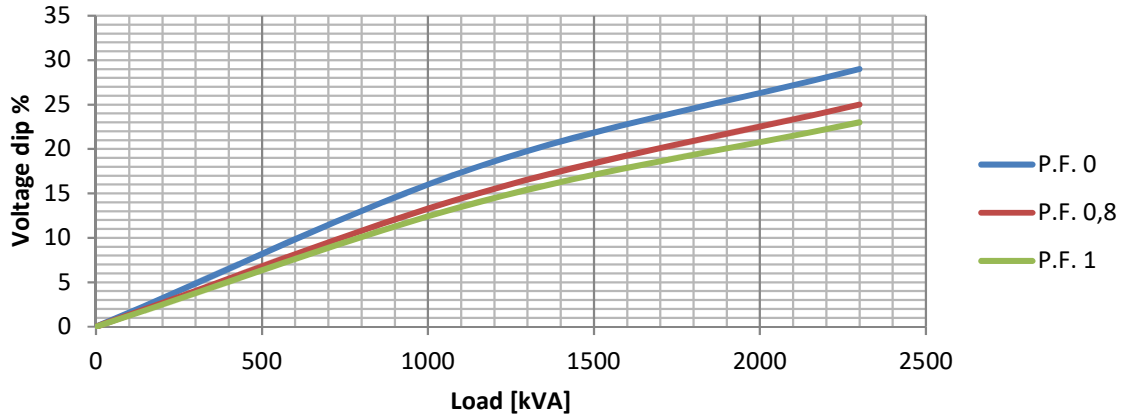
WIRING DIAGRAM



PRO40M C/4

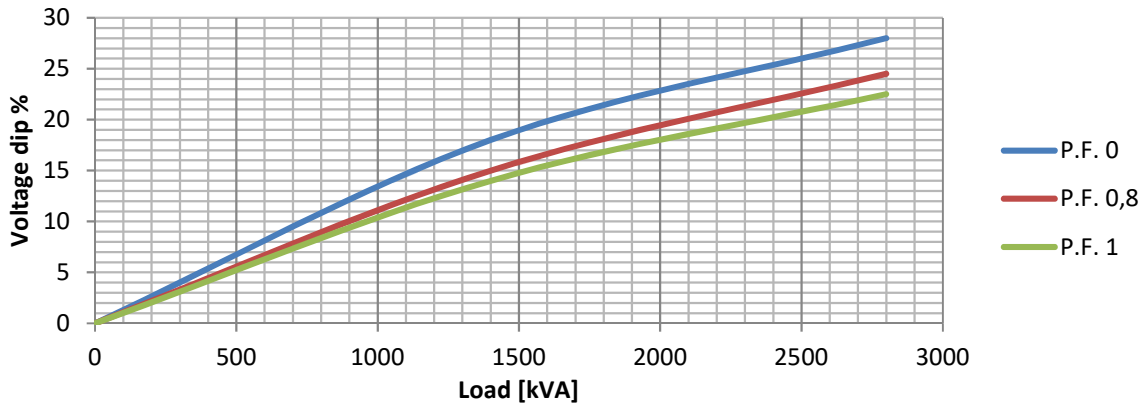
TRANSIENT VOLTAGE VARIATION 50Hz

Transient Voltage Variation @ 50Hz



TRANSIENT VOLTAGE VARIATION 60Hz

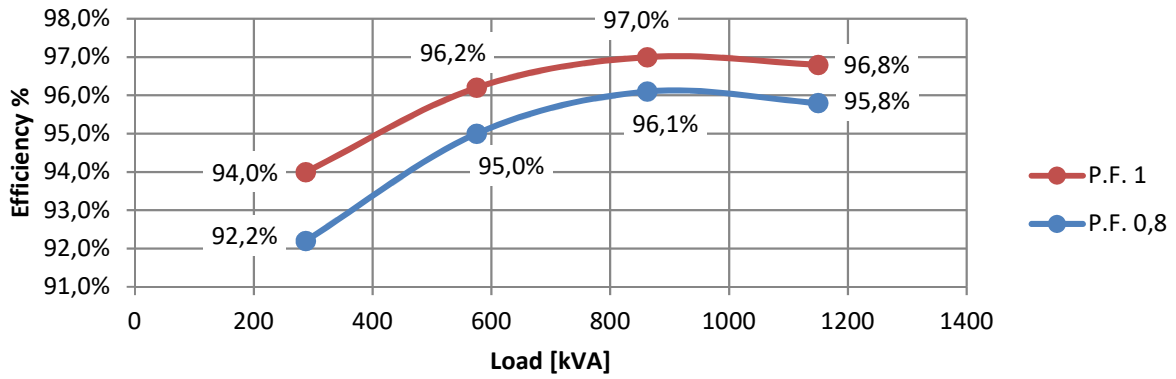
Transient Voltage Variation @ 60Hz



PRO40M C/4

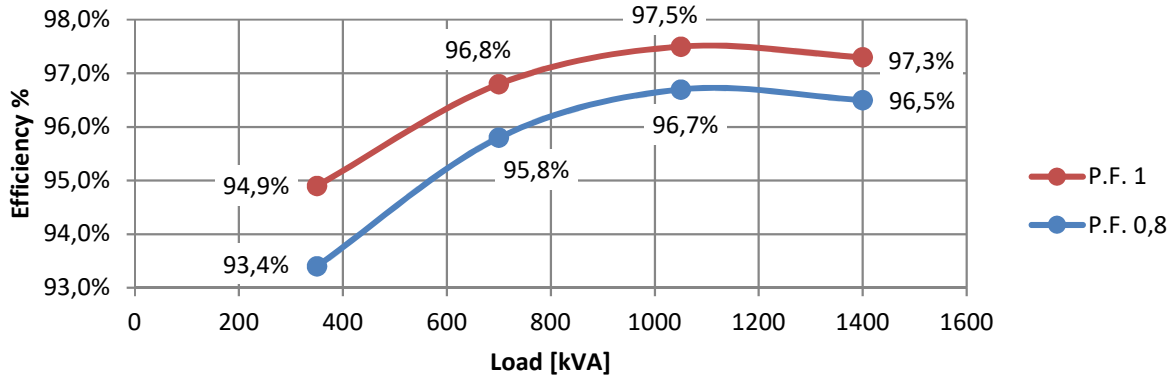
EFFICIENCY 50Hz

Efficiency Curves @ 50Hz



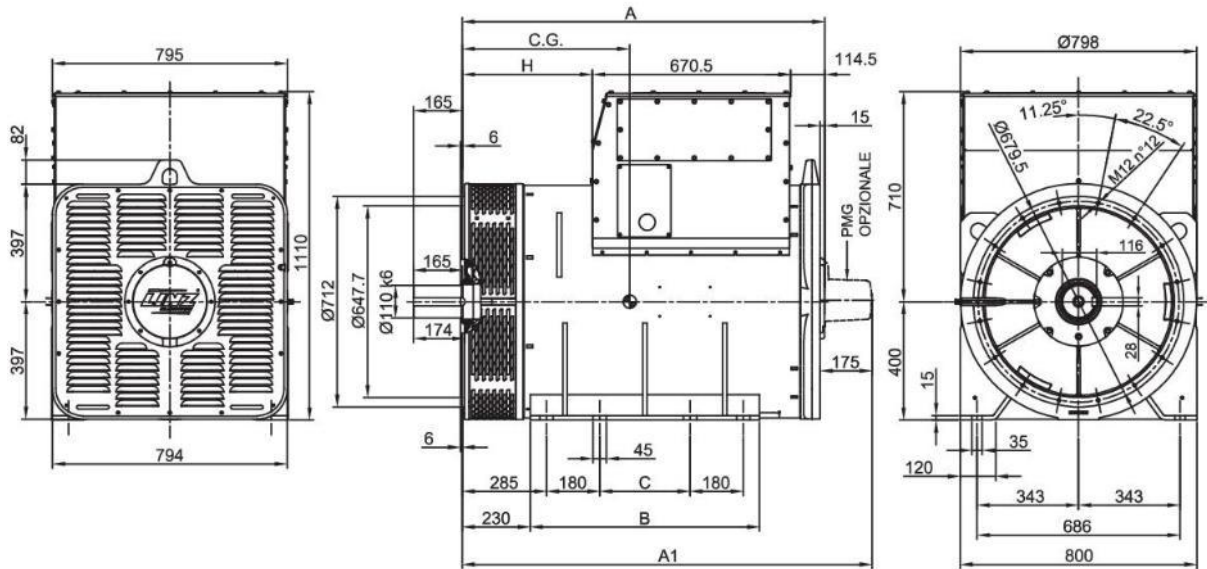
EFFICIENCY 60Hz

Efficiency Curves @ 60Hz

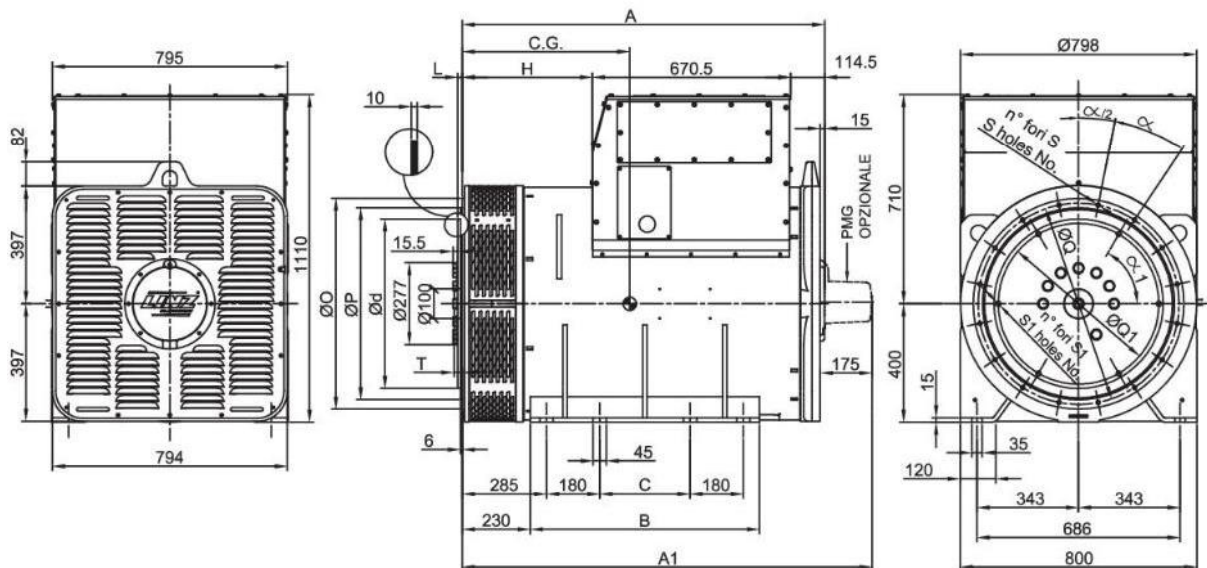


PRO40M C/4

FORMA - FORM B3/B14



FORMA - FORM SAE



| FORMA - FORM | A | H | A1 | B | C | |
|--------------|---------|------|-----|------|-----|-----|
| B3/B14 | PRO40 S | 1225 | 440 | 1385 | 775 | 305 |
| | PRO40 M | 1420 | 635 | 1580 | 775 | 305 |
| | PRO40 L | 1625 | 840 | 1785 | 965 | 495 |
| SAE | PRO40 S | 1225 | 440 | 1385 | 775 | 305 |
| | PRO40 M | 1420 | 635 | 1580 | 775 | 305 |
| | PRO40 L | 1625 | 840 | 1785 | 965 | 495 |

| TIPO - TYPE | C.G. |
|-------------|------|
| PRO40S A/4 | 597 |
| PRO40S B/4 | 597 |
| PRO40M C/4 | 648 |
| PRO40M D/4 | 693 |
| PRO40L E/4 | 795 |

| SAE N. | FLANGIE - FLANGES - BRIDAS | | | | | |
|--------|----------------------------|-------|-------|-------------------|----|-------|
| | ØO | ØP | ØQ | n. fori holes No. | S | α |
| OO | 883 | 787.4 | 850.9 | 16 | 14 | 22.5° |
| O | 710 | 647.7 | 679.5 | 16 | 14 | 22.5° |

| SAE N. | GIUNTI A DISCO - COUPLING DISCS - JUNTAS A DISCOS | | | | | | |
|--------|---|--------|--------|-------------------|----|-----|----|
| | L | Ød | ØQ1 | n. fori holes No. | S1 | α1 | T |
| 14 | 25.4 | 466.72 | 438.15 | 8 | 14 | 45° | 2 |
| 18 | 15.7 | 571.5 | 542.92 | 6 | 17 | 60° | 12 |
| 21 | 0 | 673.1 | 641.35 | 12 | 17 | 30° | 28 |