

DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH
(DECLARATION OF PERFORMANCE)

Nr (No.) **NDWU/1/TUBUS 2/2021**

| 1. Niepowtarzalny kod identyfikacyjny typu wyrobu (Unique identification code of the product-type): TUBUS 2 | | |
|--|---|--|
| 2. Zamierzone zastosowanie lub zastosowania: W instalacjach grzewczych w budynkach (Intended use/es: In heating systems in buildings) | | |
| 3. Producent (Manufacturer): INSTAL PROJEKT sp. z o. o., ul. Jana Pawła II 12 A, Nowa Wieś k/Włocławka, 87-853 Kruszyn, Polska (INSTAL PROJEKT sp. z o. o., Jana Pawła II 12 A str., Nowa Wieś near Włocławka, 87-853 Kruszyn, Poland.) | | |
| 4. System(-y) oceny i weryfikacji stałości właściwości użytkowych (System/s of AVCP): System 3 | | |
| 5. Norma zharmonizowana (Harmonised standard): EN 442-1:2014 | | |
| 6. Jednostka lub jednostki notyfikowane (Notified body/ies): INSTYTUT ENERGETYKI. Numer jednostki notyfikowanej (Notification no.): 1452. | | |
| 7. Deklarowane właściwości użytkowe (Declared performance/s): | | |
| Zasadnicze charakterystyki | Właściwości użytkowe | Zharmonizowana specyfikacja techniczna |
| Essential characteristics | Performance | Harmonised technical specification |
| Reakcja na ogień (Reaction to fire) | A1 | EN 442-1:2014 |
| Uwalnianie substancji niebezpiecznych (Release of dangerous substances) | Nie ma (None) | |
| Szczelność pod działaniem ciśnienia (Pressure tightness) | Brak przecieku przy ciśnieniu 1,3 krotnie większym od maksymalnego ciśnienia [kPa] (No leakage at 1,3 x maximum operating pressure [kPa]) | |
| Temperatura powierzchni (Surface temperature) | Maksymalnie 95 °C (Maximum 95 °C) | |
| Odporność na działanie ciśnienia (Resistance to pressure) | Brak pęknięć przy ciśnieniu 1,69 krotnie większym od maksymalnego dopuszczalnego ciśnienia roboczego [kPa]. (No breakage at 1,69 x maximum operating pressure [kPa]) | |
| | Maksymalne dopuszczalne ciśnienie robocze: 1000 [kPa] (Maximum operating pressure) | |
| Nominalna moc cieplna (Φ 50 , Φ 30) (Rated thermal output) (Φ 50 , Φ 30) | Patrz Tabela nr.1 (See Table No.1) | |
| Moc cieplna w różnych warunkach eksploatacyjnych (charakterystyka) (Thermal output in different operating conditions (characteristic curve)) | Patrz Tabela nr.1 (See Table No.1) | |
| Odporność na korozję (Resistance against corrosion) | Brak korozji po 100 h w wilgoci (No corrosion after 100 h humidity) | |
| Odporność na słabe uderzenia (Resistance against minor impact) | Klasa 0 (Class 0) | |
| 8. Właściwości użytkowe określonego powyżej wyrobu są zgodne z zestawem deklarowanych właściwości użytkowych. Niniejsza deklaracja właściwości użytkowych wydana zostaje zgodnie z rozporządzeniem (UE) nr 305/2011 na wyłączną odpowiedzialność producenta określonego powyżej. (The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.) | | |

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Tabela nr 1

(Table no. 1)

| Model grzejnika | Normalna moc cieplna [W] (75/65/20°C) $\phi 50$ | Moc cieplna [W] (55/45/20°C) $\phi 30$ | Wykładnik n | ΔT | K_M | Moc cieplna w różnych warunkach eksploatacji | | | |
|-----------------|--|--|------------------|------------|---------|---|---------|--------------|--------|
| Radiator model | Rated thermal output (75/65/20°C) $\phi 50$ | Rated thermal output (55/45/20°C) $\phi 30$ | Index exponent n | ΔT | K_M | Thermal output in different operating conditions (characteristic curve) | | | |
| TUB2-020/02 | 24 | 13 | 1,2611 | 50 | 0,17284 | $\phi =$ | 0,17284 | x ΔT | 1,2611 |
| TUB2-020/03 | 37 | 19 | 1,2611 | 50 | 0,26646 | $\phi =$ | 0,26646 | x ΔT | 1,2611 |
| TUB2-020/04 | 49 | 26 | 1,2611 | 50 | 0,35288 | $\phi =$ | 0,35288 | x ΔT | 1,2611 |
| TUB2-020/05 | 61 | 32 | 1,2611 | 50 | 0,43930 | $\phi =$ | 0,43930 | x ΔT | 1,2611 |
| TUB2-020/06 | 73 | 38 | 1,2611 | 50 | 0,52572 | $\phi =$ | 0,52572 | x ΔT | 1,2611 |
| TUB2-020/07 | 85 | 45 | 1,2611 | 50 | 0,61214 | $\phi =$ | 0,61214 | x ΔT | 1,2611 |
| TUB2-020/08 | 98 | 51 | 1,2611 | 50 | 0,70576 | $\phi =$ | 0,70576 | x ΔT | 1,2611 |
| TUB2-020/09 | 110 | 58 | 1,2611 | 50 | 0,79218 | $\phi =$ | 0,79218 | x ΔT | 1,2611 |
| TUB2-020/10 | 122 | 64 | 1,2611 | 50 | 0,87860 | $\phi =$ | 0,87860 | x ΔT | 1,2611 |
| TUB2-020/11 | 134 | 70 | 1,2611 | 50 | 0,96501 | $\phi =$ | 0,96501 | x ΔT | 1,2611 |
| TUB2-020/12 | 146 | 77 | 1,2611 | 50 | 1,05143 | $\phi =$ | 1,05143 | x ΔT | 1,2611 |
| TUB2-020/13 | 159 | 83 | 1,2611 | 50 | 1,14505 | $\phi =$ | 1,14505 | x ΔT | 1,2611 |
| TUB2-020/14 | 171 | 90 | 1,2611 | 50 | 1,23147 | $\phi =$ | 1,23147 | x ΔT | 1,2611 |
| TUB2-020/15 | 183 | 96 | 1,2611 | 50 | 1,31789 | $\phi =$ | 1,31789 | x ΔT | 1,2611 |
| TUB2-020/16 | 195 | 102 | 1,2611 | 50 | 1,40431 | $\phi =$ | 1,40431 | x ΔT | 1,2611 |
| TUB2-020/17 | 207 | 109 | 1,2611 | 50 | 1,49073 | $\phi =$ | 1,49073 | x ΔT | 1,2611 |
| TUB2-020/18 | 220 | 116 | 1,2611 | 50 | 1,58435 | $\phi =$ | 1,58435 | x ΔT | 1,2611 |
| TUB2-020/19 | 232 | 122 | 1,2611 | 50 | 1,67077 | $\phi =$ | 1,67077 | x ΔT | 1,2611 |
| TUB2-020/20 | 244 | 128 | 1,2611 | 50 | 1,75719 | $\phi =$ | 1,75719 | x ΔT | 1,2611 |
| TUB2-020/21 | 256 | 134 | 1,2611 | 50 | 1,84361 | $\phi =$ | 1,84361 | x ΔT | 1,2611 |
| TUB2-020/22 | 268 | 141 | 1,2611 | 50 | 1,93003 | $\phi =$ | 1,93003 | x ΔT | 1,2611 |
| TUB2-020/23 | 281 | 148 | 1,2611 | 50 | 2,02365 | $\phi =$ | 2,02365 | x ΔT | 1,2611 |
| TUB2-020/24 | 293 | 154 | 1,2611 | 50 | 2,11007 | $\phi =$ | 2,11007 | x ΔT | 1,2611 |
| TUB2-020/25 | 305 | 160 | 1,2611 | 50 | 2,19649 | $\phi =$ | 2,19649 | x ΔT | 1,2611 |
| TUB2-020/26 | 317 | 166 | 1,2611 | 50 | 2,28291 | $\phi =$ | 2,28291 | x ΔT | 1,2611 |
| TUB2-020/27 | 329 | 173 | 1,2611 | 50 | 2,36933 | $\phi =$ | 2,36933 | x ΔT | 1,2611 |
| TUB2-020/28 | 342 | 180 | 1,2611 | 50 | 2,46295 | $\phi =$ | 2,46295 | x ΔT | 1,2611 |
| TUB2-020/29 | 354 | 186 | 1,2611 | 50 | 2,54937 | $\phi =$ | 2,54937 | x ΔT | 1,2611 |
| TUB2-020/30 | 366 | 192 | 1,2611 | 50 | 2,63579 | $\phi =$ | 2,63579 | x ΔT | 1,2611 |
| TUB2-020/31 | 378 | 198 | 1,2611 | 50 | 2,72220 | $\phi =$ | 2,72220 | x ΔT | 1,2611 |
| TUB2-020/32 | 390 | 205 | 1,2611 | 50 | 2,80862 | $\phi =$ | 2,80862 | x ΔT | 1,2611 |
| TUB2-020/33 | 403 | 212 | 1,2611 | 50 | 2,90224 | $\phi =$ | 2,90224 | x ΔT | 1,2611 |
| TUB2-020/34 | 415 | 218 | 1,2611 | 50 | 2,98866 | $\phi =$ | 2,98866 | x ΔT | 1,2611 |
| TUB2-020/35 | 427 | 224 | 1,2611 | 50 | 3,07508 | $\phi =$ | 3,07508 | x ΔT | 1,2611 |
| TUB2-020/36 | 439 | 231 | 1,2611 | 50 | 3,16150 | $\phi =$ | 3,16150 | x ΔT | 1,2611 |
| TUB2-020/37 | 451 | 237 | 1,2611 | 50 | 3,24792 | $\phi =$ | 3,24792 | x ΔT | 1,2611 |
| TUB2-020/38 | 464 | 244 | 1,2611 | 50 | 3,34154 | $\phi =$ | 3,34154 | x ΔT | 1,2611 |
| TUB2-020/39 | 476 | 250 | 1,2611 | 50 | 3,42796 | $\phi =$ | 3,42796 | x ΔT | 1,2611 |
| TUB2-020/40 | 488 | 256 | 1,2611 | 50 | 3,51438 | $\phi =$ | 3,51438 | x ΔT | 1,2611 |
| TUB2-020/41 | 500 | 263 | 1,2611 | 50 | 3,60080 | $\phi =$ | 3,60080 | x ΔT | 1,2611 |
| TUB2-020/42 | 512 | 269 | 1,2611 | 50 | 3,68722 | $\phi =$ | 3,68722 | x ΔT | 1,2611 |
| TUB2-020/43 | 525 | 276 | 1,2611 | 50 | 3,78084 | $\phi =$ | 3,78084 | x ΔT | 1,2611 |
| TUB2-020/44 | 537 | 282 | 1,2611 | 50 | 3,86726 | $\phi =$ | 3,86726 | x ΔT | 1,2611 |
| TUB2-020/45 | 549 | 288 | 1,2611 | 50 | 3,95368 | $\phi =$ | 3,95368 | x ΔT | 1,2611 |
| TUB2-030/02 | 40 | 21 | 1,2613 | 50 | 0,28784 | $\phi =$ | 0,28784 | x ΔT | 1,2613 |
| TUB2-030/03 | 59 | 31 | 1,2613 | 50 | 0,42456 | $\phi =$ | 0,42456 | x ΔT | 1,2613 |
| TUB2-030/04 | 79 | 41 | 1,2613 | 50 | 0,56848 | $\phi =$ | 0,56848 | x ΔT | 1,2613 |
| TUB2-030/05 | 99 | 52 | 1,2613 | 50 | 0,71240 | $\phi =$ | 0,71240 | x ΔT | 1,2613 |
| TUB2-030/06 | 119 | 62 | 1,2613 | 50 | 0,85632 | $\phi =$ | 0,85632 | x ΔT | 1,2613 |
| TUB2-030/07 | 139 | 73 | 1,2613 | 50 | 1,00024 | $\phi =$ | 1,00024 | x ΔT | 1,2613 |
| TUB2-030/08 | 158 | 83 | 1,2613 | 50 | 1,13696 | $\phi =$ | 1,13696 | x ΔT | 1,2613 |
| TUB2-030/09 | 178 | 93 | 1,2613 | 50 | 1,28088 | $\phi =$ | 1,28088 | x ΔT | 1,2613 |
| TUB2-030/10 | 198 | 104 | 1,2613 | 50 | 1,42480 | $\phi =$ | 1,42480 | x ΔT | 1,2613 |
| TUB2-030/11 | 218 | 114 | 1,2613 | 50 | 1,56872 | $\phi =$ | 1,56872 | x ΔT | 1,2613 |
| TUB2-030/12 | 238 | 125 | 1,2613 | 50 | 1,71264 | $\phi =$ | 1,71264 | x ΔT | 1,2613 |
| TUB2-030/13 | 257 | 135 | 1,2613 | 50 | 1,84936 | $\phi =$ | 1,84936 | x ΔT | 1,2613 |
| TUB2-030/14 | 277 | 145 | 1,2613 | 50 | 1,99328 | $\phi =$ | 1,99328 | x ΔT | 1,2613 |
| TUB2-030/15 | 297 | 156 | 1,2613 | 50 | 2,13720 | $\phi =$ | 2,13720 | x ΔT | 1,2613 |
| TUB2-030/16 | 317 | 166 | 1,2613 | 50 | 2,28112 | $\phi =$ | 2,28112 | x ΔT | 1,2613 |

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|-------------|------|-----|--------|----|---------|----------|---------|-------------------|--------|
| TUB2-030/17 | 337 | 177 | 1,2613 | 50 | 2,42504 | $\phi =$ | 2,42504 | $\times \Delta T$ | 1,2613 |
| TUB2-030/18 | 356 | 187 | 1,2613 | 50 | 2,56176 | $\phi =$ | 2,56176 | $\times \Delta T$ | 1,2613 |
| TUB2-030/19 | 376 | 197 | 1,2613 | 50 | 2,70568 | $\phi =$ | 2,70568 | $\times \Delta T$ | 1,2613 |
| TUB2-030/20 | 396 | 208 | 1,2613 | 50 | 2,84960 | $\phi =$ | 2,84960 | $\times \Delta T$ | 1,2613 |
| TUB2-030/21 | 416 | 218 | 1,2613 | 50 | 2,99352 | $\phi =$ | 2,99352 | $\times \Delta T$ | 1,2613 |
| TUB2-030/22 | 436 | 229 | 1,2613 | 50 | 3,13744 | $\phi =$ | 3,13744 | $\times \Delta T$ | 1,2613 |
| TUB2-030/23 | 455 | 239 | 1,2613 | 50 | 3,27416 | $\phi =$ | 3,27416 | $\times \Delta T$ | 1,2613 |
| TUB2-030/24 | 475 | 249 | 1,2613 | 50 | 3,41808 | $\phi =$ | 3,41808 | $\times \Delta T$ | 1,2613 |
| TUB2-030/25 | 495 | 260 | 1,2613 | 50 | 3,56200 | $\phi =$ | 3,56200 | $\times \Delta T$ | 1,2613 |
| TUB2-030/26 | 515 | 270 | 1,2613 | 50 | 3,70592 | $\phi =$ | 3,70592 | $\times \Delta T$ | 1,2613 |
| TUB2-030/27 | 535 | 281 | 1,2613 | 50 | 3,84984 | $\phi =$ | 3,84984 | $\times \Delta T$ | 1,2613 |
| TUB2-030/28 | 554 | 291 | 1,2613 | 50 | 3,98657 | $\phi =$ | 3,98657 | $\times \Delta T$ | 1,2613 |
| TUB2-030/29 | 574 | 301 | 1,2613 | 50 | 4,13048 | $\phi =$ | 4,13048 | $\times \Delta T$ | 1,2613 |
| TUB2-030/30 | 594 | 312 | 1,2613 | 50 | 4,27440 | $\phi =$ | 4,27440 | $\times \Delta T$ | 1,2613 |
| TUB2-030/31 | 614 | 322 | 1,2613 | 50 | 4,41832 | $\phi =$ | 4,41832 | $\times \Delta T$ | 1,2613 |
| TUB2-030/32 | 634 | 333 | 1,2613 | 50 | 4,56224 | $\phi =$ | 4,56224 | $\times \Delta T$ | 1,2613 |
| TUB2-030/33 | 653 | 343 | 1,2613 | 50 | 4,69897 | $\phi =$ | 4,69897 | $\times \Delta T$ | 1,2613 |
| TUB2-030/34 | 673 | 353 | 1,2613 | 50 | 4,84289 | $\phi =$ | 4,84289 | $\times \Delta T$ | 1,2613 |
| TUB2-030/35 | 693 | 364 | 1,2613 | 50 | 4,98680 | $\phi =$ | 4,98680 | $\times \Delta T$ | 1,2613 |
| TUB2-030/36 | 713 | 374 | 1,2613 | 50 | 5,13072 | $\phi =$ | 5,13072 | $\times \Delta T$ | 1,2613 |
| TUB2-030/37 | 733 | 385 | 1,2613 | 50 | 5,27464 | $\phi =$ | 5,27464 | $\times \Delta T$ | 1,2613 |
| TUB2-030/38 | 752 | 395 | 1,2613 | 50 | 5,41137 | $\phi =$ | 5,41137 | $\times \Delta T$ | 1,2613 |
| TUB2-030/39 | 772 | 405 | 1,2613 | 50 | 5,55529 | $\phi =$ | 5,55529 | $\times \Delta T$ | 1,2613 |
| TUB2-030/40 | 792 | 416 | 1,2613 | 50 | 5,69921 | $\phi =$ | 5,69921 | $\times \Delta T$ | 1,2613 |
| TUB2-030/41 | 812 | 426 | 1,2613 | 50 | 5,84312 | $\phi =$ | 5,84312 | $\times \Delta T$ | 1,2613 |
| TUB2-030/42 | 832 | 437 | 1,2613 | 50 | 5,98704 | $\phi =$ | 5,98704 | $\times \Delta T$ | 1,2613 |
| TUB2-030/43 | 851 | 447 | 1,2613 | 50 | 6,12377 | $\phi =$ | 6,12377 | $\times \Delta T$ | 1,2613 |
| TUB2-030/44 | 871 | 457 | 1,2613 | 50 | 6,26769 | $\phi =$ | 6,26769 | $\times \Delta T$ | 1,2613 |
| TUB2-030/45 | 891 | 468 | 1,2613 | 50 | 6,41161 | $\phi =$ | 6,41161 | $\times \Delta T$ | 1,2613 |
| TUB2-040/02 | 55 | 29 | 1,2616 | 50 | 0,39531 | $\phi =$ | 0,39531 | $\times \Delta T$ | 1,2616 |
| TUB2-040/03 | 83 | 44 | 1,2616 | 50 | 0,59656 | $\phi =$ | 0,59656 | $\times \Delta T$ | 1,2616 |
| TUB2-040/04 | 110 | 58 | 1,2616 | 50 | 0,79063 | $\phi =$ | 0,79063 | $\times \Delta T$ | 1,2616 |
| TUB2-040/05 | 138 | 72 | 1,2616 | 50 | 0,99188 | $\phi =$ | 0,99188 | $\times \Delta T$ | 1,2616 |
| TUB2-040/06 | 166 | 87 | 1,2616 | 50 | 1,19313 | $\phi =$ | 1,19313 | $\times \Delta T$ | 1,2616 |
| TUB2-040/07 | 193 | 101 | 1,2616 | 50 | 1,38719 | $\phi =$ | 1,38719 | $\times \Delta T$ | 1,2616 |
| TUB2-040/08 | 221 | 116 | 1,2616 | 50 | 1,58844 | $\phi =$ | 1,58844 | $\times \Delta T$ | 1,2616 |
| TUB2-040/09 | 248 | 130 | 1,2616 | 50 | 1,78251 | $\phi =$ | 1,78251 | $\times \Delta T$ | 1,2616 |
| TUB2-040/10 | 276 | 145 | 1,2616 | 50 | 1,98376 | $\phi =$ | 1,98376 | $\times \Delta T$ | 1,2616 |
| TUB2-040/11 | 304 | 160 | 1,2616 | 50 | 2,18501 | $\phi =$ | 2,18501 | $\times \Delta T$ | 1,2616 |
| TUB2-040/12 | 331 | 174 | 1,2616 | 50 | 2,37907 | $\phi =$ | 2,37907 | $\times \Delta T$ | 1,2616 |
| TUB2-040/13 | 359 | 188 | 1,2616 | 50 | 2,58032 | $\phi =$ | 2,58032 | $\times \Delta T$ | 1,2616 |
| TUB2-040/14 | 386 | 203 | 1,2616 | 50 | 2,77726 | $\phi =$ | 2,77726 | $\times \Delta T$ | 1,2616 |
| TUB2-040/15 | 414 | 217 | 1,2616 | 50 | 2,97564 | $\phi =$ | 2,97564 | $\times \Delta T$ | 1,2616 |
| TUB2-040/16 | 442 | 232 | 1,2616 | 50 | 3,17401 | $\phi =$ | 3,17401 | $\times \Delta T$ | 1,2616 |
| TUB2-040/17 | 469 | 246 | 1,2616 | 50 | 3,37239 | $\phi =$ | 3,37239 | $\times \Delta T$ | 1,2616 |
| TUB2-040/18 | 497 | 261 | 1,2616 | 50 | 3,57076 | $\phi =$ | 3,57076 | $\times \Delta T$ | 1,2616 |
| TUB2-040/19 | 524 | 275 | 1,2616 | 50 | 3,76914 | $\phi =$ | 3,76914 | $\times \Delta T$ | 1,2616 |
| TUB2-040/20 | 552 | 290 | 1,2616 | 50 | 3,96751 | $\phi =$ | 3,96751 | $\times \Delta T$ | 1,2616 |
| TUB2-040/21 | 580 | 304 | 1,2616 | 50 | 4,16589 | $\phi =$ | 4,16589 | $\times \Delta T$ | 1,2616 |
| TUB2-040/22 | 607 | 319 | 1,2616 | 50 | 4,36427 | $\phi =$ | 4,36427 | $\times \Delta T$ | 1,2616 |
| TUB2-040/23 | 635 | 333 | 1,2616 | 50 | 4,56264 | $\phi =$ | 4,56264 | $\times \Delta T$ | 1,2616 |
| TUB2-040/24 | 662 | 348 | 1,2616 | 50 | 4,76102 | $\phi =$ | 4,76102 | $\times \Delta T$ | 1,2616 |
| TUB2-040/25 | 690 | 362 | 1,2616 | 50 | 4,95939 | $\phi =$ | 4,95939 | $\times \Delta T$ | 1,2616 |
| TUB2-040/26 | 718 | 377 | 1,2616 | 50 | 5,15777 | $\phi =$ | 5,15777 | $\times \Delta T$ | 1,2616 |
| TUB2-040/27 | 745 | 391 | 1,2616 | 50 | 5,35614 | $\phi =$ | 5,35614 | $\times \Delta T$ | 1,2616 |
| TUB2-040/28 | 773 | 406 | 1,2616 | 50 | 5,55452 | $\phi =$ | 5,55452 | $\times \Delta T$ | 1,2616 |
| TUB2-040/29 | 800 | 420 | 1,2616 | 50 | 5,75290 | $\phi =$ | 5,75290 | $\times \Delta T$ | 1,2616 |
| TUB2-040/30 | 828 | 435 | 1,2616 | 50 | 5,95127 | $\phi =$ | 5,95127 | $\times \Delta T$ | 1,2616 |
| TUB2-040/31 | 856 | 449 | 1,2616 | 50 | 6,14965 | $\phi =$ | 6,14965 | $\times \Delta T$ | 1,2616 |
| TUB2-040/32 | 883 | 464 | 1,2616 | 50 | 6,34802 | $\phi =$ | 6,34802 | $\times \Delta T$ | 1,2616 |
| TUB2-040/33 | 911 | 478 | 1,2616 | 50 | 6,54640 | $\phi =$ | 6,54640 | $\times \Delta T$ | 1,2616 |
| TUB2-040/34 | 938 | 493 | 1,2616 | 50 | 6,74477 | $\phi =$ | 6,74477 | $\times \Delta T$ | 1,2616 |
| TUB2-040/35 | 966 | 507 | 1,2616 | 50 | 6,94315 | $\phi =$ | 6,94315 | $\times \Delta T$ | 1,2616 |
| TUB2-040/36 | 994 | 522 | 1,2616 | 50 | 7,14153 | $\phi =$ | 7,14153 | $\times \Delta T$ | 1,2616 |
| TUB2-040/37 | 1021 | 536 | 1,2616 | 50 | 7,33990 | $\phi =$ | 7,33990 | $\times \Delta T$ | 1,2616 |

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|-------------|------|-----|--------|----|----------|----------|----------|-------------------|--------|
| TUB2-040/38 | 1049 | 551 | 1,2616 | 50 | 7,53828 | $\phi =$ | 7,53828 | $\times \Delta T$ | 1,2616 |
| TUB2-040/39 | 1076 | 565 | 1,2616 | 50 | 7,73665 | $\phi =$ | 7,73665 | $\times \Delta T$ | 1,2616 |
| TUB2-040/40 | 1104 | 580 | 1,2616 | 50 | 7,93503 | $\phi =$ | 7,93503 | $\times \Delta T$ | 1,2616 |
| TUB2-040/41 | 1132 | 594 | 1,2616 | 50 | 8,13340 | $\phi =$ | 8,13340 | $\times \Delta T$ | 1,2616 |
| TUB2-040/42 | 1159 | 609 | 1,2616 | 50 | 8,33178 | $\phi =$ | 8,33178 | $\times \Delta T$ | 1,2616 |
| TUB2-040/43 | 1187 | 623 | 1,2616 | 50 | 8,53016 | $\phi =$ | 8,53016 | $\times \Delta T$ | 1,2616 |
| TUB2-040/44 | 1214 | 637 | 1,2616 | 50 | 8,72853 | $\phi =$ | 8,72853 | $\times \Delta T$ | 1,2616 |
| TUB2-040/45 | 1242 | 652 | 1,2616 | 50 | 8,92691 | $\phi =$ | 8,92691 | $\times \Delta T$ | 1,2616 |
| TUB2-050/02 | 71 | 37 | 1,2620 | 50 | 0,51095 | $\phi =$ | 0,51095 | $\times \Delta T$ | 1,2620 |
| TUB2-050/03 | 107 | 56 | 1,2620 | 50 | 0,76643 | $\phi =$ | 0,76643 | $\times \Delta T$ | 1,2620 |
| TUB2-050/04 | 142 | 75 | 1,2620 | 50 | 1,02190 | $\phi =$ | 1,02190 | $\times \Delta T$ | 1,2620 |
| TUB2-050/05 | 178 | 93 | 1,2620 | 50 | 1,27738 | $\phi =$ | 1,27738 | $\times \Delta T$ | 1,2620 |
| TUB2-050/06 | 214 | 112 | 1,2620 | 50 | 1,53286 | $\phi =$ | 1,53286 | $\times \Delta T$ | 1,2620 |
| TUB2-050/07 | 249 | 131 | 1,2620 | 50 | 1,78833 | $\phi =$ | 1,78833 | $\times \Delta T$ | 1,2620 |
| TUB2-050/08 | 285 | 149 | 1,2620 | 50 | 2,04381 | $\phi =$ | 2,04381 | $\times \Delta T$ | 1,2620 |
| TUB2-050/09 | 320 | 168 | 1,2620 | 50 | 2,29928 | $\phi =$ | 2,29928 | $\times \Delta T$ | 1,2620 |
| TUB2-050/10 | 356 | 187 | 1,2620 | 50 | 2,55476 | $\phi =$ | 2,55476 | $\times \Delta T$ | 1,2620 |
| TUB2-050/11 | 392 | 206 | 1,2620 | 50 | 2,81023 | $\phi =$ | 2,81023 | $\times \Delta T$ | 1,2620 |
| TUB2-050/12 | 427 | 224 | 1,2620 | 50 | 3,06571 | $\phi =$ | 3,06571 | $\times \Delta T$ | 1,2620 |
| TUB2-050/13 | 463 | 243 | 1,2620 | 50 | 3,32119 | $\phi =$ | 3,32119 | $\times \Delta T$ | 1,2620 |
| TUB2-050/14 | 498 | 262 | 1,2620 | 50 | 3,57666 | $\phi =$ | 3,57666 | $\times \Delta T$ | 1,2620 |
| TUB2-050/15 | 534 | 280 | 1,2620 | 50 | 3,83214 | $\phi =$ | 3,83214 | $\times \Delta T$ | 1,2620 |
| TUB2-050/16 | 570 | 299 | 1,2620 | 50 | 4,08761 | $\phi =$ | 4,08761 | $\times \Delta T$ | 1,2620 |
| TUB2-050/17 | 605 | 318 | 1,2620 | 50 | 4,34309 | $\phi =$ | 4,34309 | $\times \Delta T$ | 1,2620 |
| TUB2-050/18 | 641 | 336 | 1,2620 | 50 | 4,59857 | $\phi =$ | 4,59857 | $\times \Delta T$ | 1,2620 |
| TUB2-050/19 | 676 | 355 | 1,2620 | 50 | 4,85404 | $\phi =$ | 4,85404 | $\times \Delta T$ | 1,2620 |
| TUB2-050/20 | 712 | 374 | 1,2620 | 50 | 5,10952 | $\phi =$ | 5,10952 | $\times \Delta T$ | 1,2620 |
| TUB2-050/21 | 748 | 392 | 1,2620 | 50 | 5,36499 | $\phi =$ | 5,36499 | $\times \Delta T$ | 1,2620 |
| TUB2-050/22 | 783 | 411 | 1,2620 | 50 | 5,62047 | $\phi =$ | 5,62047 | $\times \Delta T$ | 1,2620 |
| TUB2-050/23 | 819 | 430 | 1,2620 | 50 | 5,87594 | $\phi =$ | 5,87594 | $\times \Delta T$ | 1,2620 |
| TUB2-050/24 | 854 | 448 | 1,2620 | 50 | 6,13142 | $\phi =$ | 6,13142 | $\times \Delta T$ | 1,2620 |
| TUB2-050/25 | 890 | 467 | 1,2620 | 50 | 6,38690 | $\phi =$ | 6,38690 | $\times \Delta T$ | 1,2620 |
| TUB2-050/26 | 926 | 486 | 1,2620 | 50 | 6,64237 | $\phi =$ | 6,64237 | $\times \Delta T$ | 1,2620 |
| TUB2-050/27 | 961 | 504 | 1,2620 | 50 | 6,89785 | $\phi =$ | 6,89785 | $\times \Delta T$ | 1,2620 |
| TUB2-050/28 | 997 | 523 | 1,2620 | 50 | 7,15332 | $\phi =$ | 7,15332 | $\times \Delta T$ | 1,2620 |
| TUB2-050/29 | 1032 | 542 | 1,2620 | 50 | 7,40880 | $\phi =$ | 7,40880 | $\times \Delta T$ | 1,2620 |
| TUB2-050/30 | 1068 | 561 | 1,2620 | 50 | 7,66428 | $\phi =$ | 7,66428 | $\times \Delta T$ | 1,2620 |
| TUB2-050/31 | 1104 | 579 | 1,2620 | 50 | 7,91975 | $\phi =$ | 7,91975 | $\times \Delta T$ | 1,2620 |
| TUB2-050/32 | 1139 | 598 | 1,2620 | 50 | 8,17523 | $\phi =$ | 8,17523 | $\times \Delta T$ | 1,2620 |
| TUB2-050/33 | 1175 | 617 | 1,2620 | 50 | 8,43070 | $\phi =$ | 8,43070 | $\times \Delta T$ | 1,2620 |
| TUB2-050/34 | 1210 | 635 | 1,2620 | 50 | 8,68618 | $\phi =$ | 8,68618 | $\times \Delta T$ | 1,2620 |
| TUB2-050/35 | 1246 | 654 | 1,2620 | 50 | 8,94165 | $\phi =$ | 8,94165 | $\times \Delta T$ | 1,2620 |
| TUB2-050/36 | 1282 | 673 | 1,2620 | 50 | 9,19713 | $\phi =$ | 9,19713 | $\times \Delta T$ | 1,2620 |
| TUB2-050/37 | 1317 | 691 | 1,2620 | 50 | 9,45261 | $\phi =$ | 9,45261 | $\times \Delta T$ | 1,2620 |
| TUB2-050/38 | 1353 | 710 | 1,2620 | 50 | 9,70808 | $\phi =$ | 9,70808 | $\times \Delta T$ | 1,2620 |
| TUB2-050/39 | 1388 | 729 | 1,2620 | 50 | 9,96356 | $\phi =$ | 9,96356 | $\times \Delta T$ | 1,2620 |
| TUB2-050/40 | 1424 | 747 | 1,2620 | 50 | 10,21903 | $\phi =$ | 10,21903 | $\times \Delta T$ | 1,2620 |
| TUB2-050/41 | 1460 | 766 | 1,2620 | 50 | 10,47451 | $\phi =$ | 10,47451 | $\times \Delta T$ | 1,2620 |
| TUB2-050/42 | 1495 | 785 | 1,2620 | 50 | 10,72999 | $\phi =$ | 10,72999 | $\times \Delta T$ | 1,2620 |
| TUB2-050/43 | 1531 | 803 | 1,2620 | 50 | 10,98546 | $\phi =$ | 10,98546 | $\times \Delta T$ | 1,2620 |
| TUB2-050/44 | 1566 | 822 | 1,2620 | 50 | 11,24094 | $\phi =$ | 11,24094 | $\times \Delta T$ | 1,2620 |
| TUB2-050/45 | 1602 | 841 | 1,2620 | 50 | 11,49641 | $\phi =$ | 11,49641 | $\times \Delta T$ | 1,2620 |
| TUB2-070/02 | 103 | 54 | 1,2631 | 50 | 0,73741 | $\phi =$ | 0,73741 | $\times \Delta T$ | 1,2631 |
| TUB2-070/03 | 155 | 81 | 1,2631 | 50 | 1,10612 | $\phi =$ | 1,10612 | $\times \Delta T$ | 1,2631 |
| TUB2-070/04 | 206 | 108 | 1,2631 | 50 | 1,47483 | $\phi =$ | 1,47483 | $\times \Delta T$ | 1,2631 |
| TUB2-070/05 | 258 | 135 | 1,2631 | 50 | 1,84353 | $\phi =$ | 1,84353 | $\times \Delta T$ | 1,2631 |
| TUB2-070/06 | 310 | 162 | 1,2631 | 50 | 2,21224 | $\phi =$ | 2,21224 | $\times \Delta T$ | 1,2631 |
| TUB2-070/07 | 361 | 189 | 1,2631 | 50 | 2,58094 | $\phi =$ | 2,58094 | $\times \Delta T$ | 1,2631 |
| TUB2-070/08 | 413 | 217 | 1,2631 | 50 | 2,94965 | $\phi =$ | 2,94965 | $\times \Delta T$ | 1,2631 |
| TUB2-070/09 | 464 | 244 | 1,2631 | 50 | 3,31836 | $\phi =$ | 3,31836 | $\times \Delta T$ | 1,2631 |
| TUB2-070/10 | 516 | 271 | 1,2631 | 50 | 3,68706 | $\phi =$ | 3,68706 | $\times \Delta T$ | 1,2631 |
| TUB2-070/11 | 568 | 298 | 1,2631 | 50 | 4,05577 | $\phi =$ | 4,05577 | $\times \Delta T$ | 1,2631 |
| TUB2-070/12 | 619 | 325 | 1,2631 | 50 | 4,42448 | $\phi =$ | 4,42448 | $\times \Delta T$ | 1,2631 |
| TUB2-070/13 | 671 | 352 | 1,2631 | 50 | 4,79318 | $\phi =$ | 4,79318 | $\times \Delta T$ | 1,2631 |
| TUB2-070/14 | 722 | 379 | 1,2631 | 50 | 5,16189 | $\phi =$ | 5,16189 | $\times \Delta T$ | 1,2631 |

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|-------------|------|------|--------|----|----------|----------|----------|-------------------|--------|
| TUB2-070/15 | 774 | 406 | 1,2631 | 50 | 5,53060 | $\phi =$ | 5,53060 | $\times \Delta T$ | 1,2631 |
| TUB2-070/16 | 826 | 433 | 1,2631 | 50 | 5,89930 | $\phi =$ | 5,89930 | $\times \Delta T$ | 1,2631 |
| TUB2-070/17 | 877 | 460 | 1,2631 | 50 | 6,26801 | $\phi =$ | 6,26801 | $\times \Delta T$ | 1,2631 |
| TUB2-070/18 | 929 | 487 | 1,2631 | 50 | 6,63672 | $\phi =$ | 6,63672 | $\times \Delta T$ | 1,2631 |
| TUB2-070/19 | 980 | 514 | 1,2631 | 50 | 7,00542 | $\phi =$ | 7,00542 | $\times \Delta T$ | 1,2631 |
| TUB2-070/20 | 1032 | 541 | 1,2631 | 50 | 7,37413 | $\phi =$ | 7,37413 | $\times \Delta T$ | 1,2631 |
| TUB2-070/21 | 1084 | 568 | 1,2631 | 50 | 7,74283 | $\phi =$ | 7,74283 | $\times \Delta T$ | 1,2631 |
| TUB2-070/22 | 1135 | 595 | 1,2631 | 50 | 8,11154 | $\phi =$ | 8,11154 | $\times \Delta T$ | 1,2631 |
| TUB2-070/23 | 1187 | 623 | 1,2631 | 50 | 8,48025 | $\phi =$ | 8,48025 | $\times \Delta T$ | 1,2631 |
| TUB2-070/24 | 1238 | 650 | 1,2631 | 50 | 8,84895 | $\phi =$ | 8,84895 | $\times \Delta T$ | 1,2631 |
| TUB2-070/25 | 1290 | 677 | 1,2631 | 50 | 9,21766 | $\phi =$ | 9,21766 | $\times \Delta T$ | 1,2631 |
| TUB2-070/26 | 1342 | 704 | 1,2631 | 50 | 9,58637 | $\phi =$ | 9,58637 | $\times \Delta T$ | 1,2631 |
| TUB2-070/27 | 1393 | 731 | 1,2631 | 50 | 9,95507 | $\phi =$ | 9,95507 | $\times \Delta T$ | 1,2631 |
| TUB2-070/28 | 1445 | 758 | 1,2631 | 50 | 10,32378 | $\phi =$ | 10,32378 | $\times \Delta T$ | 1,2631 |
| TUB2-070/29 | 1496 | 785 | 1,2631 | 50 | 10,69249 | $\phi =$ | 10,69249 | $\times \Delta T$ | 1,2631 |
| TUB2-070/30 | 1548 | 812 | 1,2631 | 50 | 11,06119 | $\phi =$ | 11,06119 | $\times \Delta T$ | 1,2631 |
| TUB2-070/31 | 1600 | 839 | 1,2631 | 50 | 11,42990 | $\phi =$ | 11,42990 | $\times \Delta T$ | 1,2631 |
| TUB2-070/32 | 1651 | 866 | 1,2631 | 50 | 11,79861 | $\phi =$ | 11,79861 | $\times \Delta T$ | 1,2631 |
| TUB2-070/33 | 1703 | 893 | 1,2631 | 50 | 12,16731 | $\phi =$ | 12,16731 | $\times \Delta T$ | 1,2631 |
| TUB2-070/34 | 1754 | 920 | 1,2631 | 50 | 12,53602 | $\phi =$ | 12,53602 | $\times \Delta T$ | 1,2631 |
| TUB2-070/35 | 1806 | 947 | 1,2631 | 50 | 12,90472 | $\phi =$ | 12,90472 | $\times \Delta T$ | 1,2631 |
| TUB2-070/36 | 1858 | 974 | 1,2631 | 50 | 13,27343 | $\phi =$ | 13,27343 | $\times \Delta T$ | 1,2631 |
| TUB2-070/37 | 1909 | 1001 | 1,2631 | 50 | 13,64214 | $\phi =$ | 13,64214 | $\times \Delta T$ | 1,2631 |
| TUB2-070/38 | 1961 | 1029 | 1,2631 | 50 | 14,01084 | $\phi =$ | 14,01084 | $\times \Delta T$ | 1,2631 |
| TUB2-070/39 | 2012 | 1056 | 1,2631 | 50 | 14,37955 | $\phi =$ | 14,37955 | $\times \Delta T$ | 1,2631 |
| TUB2-070/40 | 2064 | 1083 | 1,2631 | 50 | 14,74826 | $\phi =$ | 14,74826 | $\times \Delta T$ | 1,2631 |
| TUB2-070/41 | 2116 | 1110 | 1,2631 | 50 | 15,11696 | $\phi =$ | 15,11696 | $\times \Delta T$ | 1,2631 |
| TUB2-070/42 | 2167 | 1137 | 1,2631 | 50 | 15,48567 | $\phi =$ | 15,48567 | $\times \Delta T$ | 1,2631 |
| TUB2-070/43 | 2219 | 1164 | 1,2631 | 50 | 15,85438 | $\phi =$ | 15,85438 | $\times \Delta T$ | 1,2631 |
| TUB2-070/44 | 2270 | 1191 | 1,2631 | 50 | 16,22308 | $\phi =$ | 16,22308 | $\times \Delta T$ | 1,2631 |
| TUB2-070/45 | 2322 | 1218 | 1,2631 | 50 | 16,59179 | $\phi =$ | 16,59179 | $\times \Delta T$ | 1,2631 |
| TUB2-080/02 | 119 | 63 | 1,2638 | 50 | 0,84941 | $\phi =$ | 0,84941 | $\times \Delta T$ | 1,2638 |
| TUB2-080/03 | 179 | 94 | 1,2638 | 50 | 1,27412 | $\phi =$ | 1,27412 | $\times \Delta T$ | 1,2638 |
| TUB2-080/04 | 238 | 125 | 1,2638 | 50 | 1,69882 | $\phi =$ | 1,69882 | $\times \Delta T$ | 1,2638 |
| TUB2-080/05 | 298 | 156 | 1,2638 | 50 | 2,12353 | $\phi =$ | 2,12353 | $\times \Delta T$ | 1,2638 |
| TUB2-080/06 | 358 | 188 | 1,2638 | 50 | 2,54823 | $\phi =$ | 2,54823 | $\times \Delta T$ | 1,2638 |
| TUB2-080/07 | 417 | 219 | 1,2638 | 50 | 2,97294 | $\phi =$ | 2,97294 | $\times \Delta T$ | 1,2638 |
| TUB2-080/08 | 477 | 250 | 1,2638 | 50 | 3,39764 | $\phi =$ | 3,39764 | $\times \Delta T$ | 1,2638 |
| TUB2-080/09 | 536 | 281 | 1,2638 | 50 | 3,82235 | $\phi =$ | 3,82235 | $\times \Delta T$ | 1,2638 |
| TUB2-080/10 | 596 | 313 | 1,2638 | 50 | 4,24706 | $\phi =$ | 4,24706 | $\times \Delta T$ | 1,2638 |
| TUB2-080/11 | 656 | 344 | 1,2638 | 50 | 4,67176 | $\phi =$ | 4,67176 | $\times \Delta T$ | 1,2638 |
| TUB2-080/12 | 715 | 375 | 1,2638 | 50 | 5,09647 | $\phi =$ | 5,09647 | $\times \Delta T$ | 1,2638 |
| TUB2-080/13 | 775 | 406 | 1,2638 | 50 | 5,52117 | $\phi =$ | 5,52117 | $\times \Delta T$ | 1,2638 |
| TUB2-080/14 | 834 | 438 | 1,2638 | 50 | 5,94588 | $\phi =$ | 5,94588 | $\times \Delta T$ | 1,2638 |
| TUB2-080/15 | 894 | 469 | 1,2638 | 50 | 6,37058 | $\phi =$ | 6,37058 | $\times \Delta T$ | 1,2638 |
| TUB2-080/16 | 954 | 500 | 1,2638 | 50 | 6,79529 | $\phi =$ | 6,79529 | $\times \Delta T$ | 1,2638 |
| TUB2-080/17 | 1013 | 531 | 1,2638 | 50 | 7,21999 | $\phi =$ | 7,21999 | $\times \Delta T$ | 1,2638 |
| TUB2-080/18 | 1073 | 563 | 1,2638 | 50 | 7,64470 | $\phi =$ | 7,64470 | $\times \Delta T$ | 1,2638 |
| TUB2-080/19 | 1132 | 594 | 1,2638 | 50 | 8,06941 | $\phi =$ | 8,06941 | $\times \Delta T$ | 1,2638 |
| TUB2-080/20 | 1192 | 625 | 1,2638 | 50 | 8,49411 | $\phi =$ | 8,49411 | $\times \Delta T$ | 1,2638 |
| TUB2-080/21 | 1252 | 656 | 1,2638 | 50 | 8,91882 | $\phi =$ | 8,91882 | $\times \Delta T$ | 1,2638 |
| TUB2-080/22 | 1311 | 688 | 1,2638 | 50 | 9,34352 | $\phi =$ | 9,34352 | $\times \Delta T$ | 1,2638 |
| TUB2-080/23 | 1371 | 719 | 1,2638 | 50 | 9,76823 | $\phi =$ | 9,76823 | $\times \Delta T$ | 1,2638 |
| TUB2-080/24 | 1430 | 750 | 1,2638 | 50 | 10,19293 | $\phi =$ | 10,19293 | $\times \Delta T$ | 1,2638 |
| TUB2-080/25 | 1490 | 781 | 1,2638 | 50 | 10,61764 | $\phi =$ | 10,61764 | $\times \Delta T$ | 1,2638 |
| TUB2-080/26 | 1550 | 813 | 1,2638 | 50 | 11,04235 | $\phi =$ | 11,04235 | $\times \Delta T$ | 1,2638 |
| TUB2-080/27 | 1609 | 844 | 1,2638 | 50 | 11,46705 | $\phi =$ | 11,46705 | $\times \Delta T$ | 1,2638 |
| TUB2-080/28 | 1669 | 875 | 1,2638 | 50 | 11,89176 | $\phi =$ | 11,89176 | $\times \Delta T$ | 1,2638 |
| TUB2-080/29 | 1728 | 906 | 1,2638 | 50 | 12,31646 | $\phi =$ | 12,31646 | $\times \Delta T$ | 1,2638 |
| TUB2-080/30 | 1788 | 938 | 1,2638 | 50 | 12,74117 | $\phi =$ | 12,74117 | $\times \Delta T$ | 1,2638 |
| TUB2-080/31 | 1848 | 969 | 1,2638 | 50 | 13,16587 | $\phi =$ | 13,16587 | $\times \Delta T$ | 1,2638 |
| TUB2-080/32 | 1907 | 1000 | 1,2638 | 50 | 13,59058 | $\phi =$ | 13,59058 | $\times \Delta T$ | 1,2638 |
| TUB2-080/33 | 1967 | 1031 | 1,2638 | 50 | 14,01528 | $\phi =$ | 14,01528 | $\times \Delta T$ | 1,2638 |
| TUB2-080/34 | 2026 | 1063 | 1,2638 | 50 | 14,43999 | $\phi =$ | 14,43999 | $\times \Delta T$ | 1,2638 |
| TUB2-080/35 | 2086 | 1094 | 1,2638 | 50 | 14,86470 | $\phi =$ | 14,86470 | $\times \Delta T$ | 1,2638 |

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|-------------|------|------|--------|----|----------|----------|----------|-------------------|--------|
| TUB2-080/36 | 2146 | 1125 | 1,2638 | 50 | 15,28940 | $\phi =$ | 15,28940 | $\times \Delta T$ | 1,2638 |
| TUB2-080/37 | 2205 | 1156 | 1,2638 | 50 | 15,71411 | $\phi =$ | 15,71411 | $\times \Delta T$ | 1,2638 |
| TUB2-080/38 | 2265 | 1188 | 1,2638 | 50 | 16,13881 | $\phi =$ | 16,13881 | $\times \Delta T$ | 1,2638 |
| TUB2-080/39 | 2324 | 1219 | 1,2638 | 50 | 16,56352 | $\phi =$ | 16,56352 | $\times \Delta T$ | 1,2638 |
| TUB2-080/40 | 2384 | 1250 | 1,2638 | 50 | 16,98822 | $\phi =$ | 16,98822 | $\times \Delta T$ | 1,2638 |
| TUB2-080/41 | 2444 | 1281 | 1,2638 | 50 | 17,41293 | $\phi =$ | 17,41293 | $\times \Delta T$ | 1,2638 |
| TUB2-080/42 | 2503 | 1313 | 1,2638 | 50 | 17,83763 | $\phi =$ | 17,83763 | $\times \Delta T$ | 1,2638 |
| TUB2-080/43 | 2563 | 1344 | 1,2638 | 50 | 18,26234 | $\phi =$ | 18,26234 | $\times \Delta T$ | 1,2638 |
| TUB2-080/44 | 2622 | 1375 | 1,2638 | 50 | 18,68705 | $\phi =$ | 18,68705 | $\times \Delta T$ | 1,2638 |
| TUB2-080/45 | 2682 | 1406 | 1,2638 | 50 | 19,11175 | $\phi =$ | 19,11175 | $\times \Delta T$ | 1,2638 |
| TUB2-090/02 | 135 | 71 | 1,2645 | 50 | 0,96079 | $\phi =$ | 0,96079 | $\times \Delta T$ | 1,2645 |
| TUB2-090/03 | 203 | 106 | 1,2645 | 50 | 1,44119 | $\phi =$ | 1,44119 | $\times \Delta T$ | 1,2645 |
| TUB2-090/04 | 270 | 142 | 1,2645 | 50 | 1,92158 | $\phi =$ | 1,92158 | $\times \Delta T$ | 1,2645 |
| TUB2-090/05 | 338 | 177 | 1,2645 | 50 | 2,40198 | $\phi =$ | 2,40198 | $\times \Delta T$ | 1,2645 |
| TUB2-090/06 | 406 | 213 | 1,2645 | 50 | 2,88237 | $\phi =$ | 2,88237 | $\times \Delta T$ | 1,2645 |
| TUB2-090/07 | 473 | 248 | 1,2645 | 50 | 3,36277 | $\phi =$ | 3,36277 | $\times \Delta T$ | 1,2645 |
| TUB2-090/08 | 541 | 283 | 1,2645 | 50 | 3,84317 | $\phi =$ | 3,84317 | $\times \Delta T$ | 1,2645 |
| TUB2-090/09 | 608 | 319 | 1,2645 | 50 | 4,32356 | $\phi =$ | 4,32356 | $\times \Delta T$ | 1,2645 |
| TUB2-090/10 | 676 | 354 | 1,2645 | 50 | 4,80396 | $\phi =$ | 4,80396 | $\times \Delta T$ | 1,2645 |
| TUB2-090/11 | 744 | 390 | 1,2645 | 50 | 5,28435 | $\phi =$ | 5,28435 | $\times \Delta T$ | 1,2645 |
| TUB2-090/12 | 811 | 425 | 1,2645 | 50 | 5,76475 | $\phi =$ | 5,76475 | $\times \Delta T$ | 1,2645 |
| TUB2-090/13 | 879 | 461 | 1,2645 | 50 | 6,24514 | $\phi =$ | 6,24514 | $\times \Delta T$ | 1,2645 |
| TUB2-090/14 | 946 | 496 | 1,2645 | 50 | 6,72554 | $\phi =$ | 6,72554 | $\times \Delta T$ | 1,2645 |
| TUB2-090/15 | 1014 | 532 | 1,2645 | 50 | 7,20594 | $\phi =$ | 7,20594 | $\times \Delta T$ | 1,2645 |
| TUB2-090/16 | 1082 | 567 | 1,2645 | 50 | 7,68633 | $\phi =$ | 7,68633 | $\times \Delta T$ | 1,2645 |
| TUB2-090/17 | 1149 | 602 | 1,2645 | 50 | 8,16673 | $\phi =$ | 8,16673 | $\times \Delta T$ | 1,2645 |
| TUB2-090/18 | 1217 | 638 | 1,2645 | 50 | 8,64712 | $\phi =$ | 8,64712 | $\times \Delta T$ | 1,2645 |
| TUB2-090/19 | 1284 | 673 | 1,2645 | 50 | 9,12752 | $\phi =$ | 9,12752 | $\times \Delta T$ | 1,2645 |
| TUB2-090/20 | 1352 | 709 | 1,2645 | 50 | 9,60791 | $\phi =$ | 9,60791 | $\times \Delta T$ | 1,2645 |
| TUB2-090/21 | 1420 | 744 | 1,2645 | 50 | 10,08831 | $\phi =$ | 10,08831 | $\times \Delta T$ | 1,2645 |
| TUB2-090/22 | 1487 | 780 | 1,2645 | 50 | 10,56871 | $\phi =$ | 10,56871 | $\times \Delta T$ | 1,2645 |
| TUB2-090/23 | 1555 | 815 | 1,2645 | 50 | 11,04910 | $\phi =$ | 11,04910 | $\times \Delta T$ | 1,2645 |
| TUB2-090/24 | 1622 | 850 | 1,2645 | 50 | 11,52950 | $\phi =$ | 11,52950 | $\times \Delta T$ | 1,2645 |
| TUB2-090/25 | 1690 | 886 | 1,2645 | 50 | 12,00989 | $\phi =$ | 12,00989 | $\times \Delta T$ | 1,2645 |
| TUB2-090/26 | 1758 | 921 | 1,2645 | 50 | 12,49029 | $\phi =$ | 12,49029 | $\times \Delta T$ | 1,2645 |
| TUB2-090/27 | 1825 | 957 | 1,2645 | 50 | 12,97068 | $\phi =$ | 12,97068 | $\times \Delta T$ | 1,2645 |
| TUB2-090/28 | 1893 | 992 | 1,2645 | 50 | 13,45108 | $\phi =$ | 13,45108 | $\times \Delta T$ | 1,2645 |
| TUB2-090/29 | 1960 | 1028 | 1,2645 | 50 | 13,93148 | $\phi =$ | 13,93148 | $\times \Delta T$ | 1,2645 |
| TUB2-090/30 | 2028 | 1063 | 1,2645 | 50 | 14,41187 | $\phi =$ | 14,41187 | $\times \Delta T$ | 1,2645 |
| TUB2-090/31 | 2096 | 1098 | 1,2645 | 50 | 14,89227 | $\phi =$ | 14,89227 | $\times \Delta T$ | 1,2645 |
| TUB2-090/32 | 2163 | 1134 | 1,2645 | 50 | 15,37266 | $\phi =$ | 15,37266 | $\times \Delta T$ | 1,2645 |
| TUB2-090/33 | 2231 | 1169 | 1,2645 | 50 | 15,85306 | $\phi =$ | 15,85306 | $\times \Delta T$ | 1,2645 |
| TUB2-090/34 | 2298 | 1205 | 1,2645 | 50 | 16,33345 | $\phi =$ | 16,33345 | $\times \Delta T$ | 1,2645 |
| TUB2-090/35 | 2366 | 1240 | 1,2645 | 50 | 16,81385 | $\phi =$ | 16,81385 | $\times \Delta T$ | 1,2645 |
| TUB2-090/36 | 2434 | 1276 | 1,2645 | 50 | 17,29425 | $\phi =$ | 17,29425 | $\times \Delta T$ | 1,2645 |
| TUB2-090/37 | 2501 | 1311 | 1,2645 | 50 | 17,77464 | $\phi =$ | 17,77464 | $\times \Delta T$ | 1,2645 |
| TUB2-090/38 | 2569 | 1346 | 1,2645 | 50 | 18,25504 | $\phi =$ | 18,25504 | $\times \Delta T$ | 1,2645 |
| TUB2-090/39 | 2636 | 1382 | 1,2645 | 50 | 18,73543 | $\phi =$ | 18,73543 | $\times \Delta T$ | 1,2645 |
| TUB2-090/40 | 2704 | 1417 | 1,2645 | 50 | 19,21583 | $\phi =$ | 19,21583 | $\times \Delta T$ | 1,2645 |
| TUB2-090/41 | 2772 | 1453 | 1,2645 | 50 | 19,69622 | $\phi =$ | 19,69622 | $\times \Delta T$ | 1,2645 |
| TUB2-090/42 | 2839 | 1488 | 1,2645 | 50 | 20,17662 | $\phi =$ | 20,17662 | $\times \Delta T$ | 1,2645 |
| TUB2-090/43 | 2907 | 1524 | 1,2645 | 50 | 20,65702 | $\phi =$ | 20,65702 | $\times \Delta T$ | 1,2645 |
| TUB2-090/44 | 2974 | 1559 | 1,2645 | 50 | 21,13741 | $\phi =$ | 21,13741 | $\times \Delta T$ | 1,2645 |
| TUB2-090/45 | 3042 | 1595 | 1,2645 | 50 | 21,61781 | $\phi =$ | 21,61781 | $\times \Delta T$ | 1,2645 |
| TUB2-100/02 | 151 | 79 | 1,2635 | 50 | 1,07443 | $\phi =$ | 1,07443 | $\times \Delta T$ | 1,2635 |
| TUB2-100/03 | 226 | 118 | 1,2635 | 50 | 1,61164 | $\phi =$ | 1,61164 | $\times \Delta T$ | 1,2635 |
| TUB2-100/04 | 301 | 158 | 1,2635 | 50 | 2,14885 | $\phi =$ | 2,14885 | $\times \Delta T$ | 1,2635 |
| TUB2-100/05 | 377 | 197 | 1,2635 | 50 | 2,68606 | $\phi =$ | 2,68606 | $\times \Delta T$ | 1,2635 |
| TUB2-100/06 | 452 | 237 | 1,2635 | 50 | 3,22328 | $\phi =$ | 3,22328 | $\times \Delta T$ | 1,2635 |
| TUB2-100/07 | 527 | 276 | 1,2635 | 50 | 3,76049 | $\phi =$ | 3,76049 | $\times \Delta T$ | 1,2635 |
| TUB2-100/08 | 602 | 316 | 1,2635 | 50 | 4,29770 | $\phi =$ | 4,29770 | $\times \Delta T$ | 1,2635 |
| TUB2-100/09 | 678 | 355 | 1,2635 | 50 | 4,83492 | $\phi =$ | 4,83492 | $\times \Delta T$ | 1,2635 |
| TUB2-100/10 | 753 | 395 | 1,2635 | 50 | 5,37213 | $\phi =$ | 5,37213 | $\times \Delta T$ | 1,2635 |
| TUB2-100/11 | 828 | 434 | 1,2635 | 50 | 5,90934 | $\phi =$ | 5,90934 | $\times \Delta T$ | 1,2635 |
| TUB2-100/12 | 904 | 474 | 1,2635 | 50 | 6,44655 | $\phi =$ | 6,44655 | $\times \Delta T$ | 1,2635 |

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|-------------|------|------|--------|----|----------|----------|----------|--------------|--------|
| TUB2-100/13 | 979 | 513 | 1,2635 | 50 | 6,98377 | $\phi =$ | 6,98377 | x ΔT | 1,2635 |
| TUB2-100/14 | 1054 | 553 | 1,2635 | 50 | 7,52098 | $\phi =$ | 7,52098 | x ΔT | 1,2635 |
| TUB2-100/15 | 1130 | 592 | 1,2635 | 50 | 8,05819 | $\phi =$ | 8,05819 | x ΔT | 1,2635 |
| TUB2-100/16 | 1205 | 632 | 1,2635 | 50 | 8,59541 | $\phi =$ | 8,59541 | x ΔT | 1,2635 |
| TUB2-100/17 | 1280 | 671 | 1,2635 | 50 | 9,13262 | $\phi =$ | 9,13262 | x ΔT | 1,2635 |
| TUB2-100/18 | 1355 | 711 | 1,2635 | 50 | 9,66983 | $\phi =$ | 9,66983 | x ΔT | 1,2635 |
| TUB2-100/19 | 1431 | 750 | 1,2635 | 50 | 10,20704 | $\phi =$ | 10,20704 | x ΔT | 1,2635 |
| TUB2-100/20 | 1506 | 790 | 1,2635 | 50 | 10,74426 | $\phi =$ | 10,74426 | x ΔT | 1,2635 |
| TUB2-100/21 | 1581 | 829 | 1,2635 | 50 | 11,28147 | $\phi =$ | 11,28147 | x ΔT | 1,2635 |
| TUB2-100/22 | 1657 | 869 | 1,2635 | 50 | 11,81868 | $\phi =$ | 11,81868 | x ΔT | 1,2635 |
| TUB2-100/23 | 1732 | 908 | 1,2635 | 50 | 12,35590 | $\phi =$ | 12,35590 | x ΔT | 1,2635 |
| TUB2-100/24 | 1807 | 948 | 1,2635 | 50 | 12,89311 | $\phi =$ | 12,89311 | x ΔT | 1,2635 |
| TUB2-100/25 | 1883 | 987 | 1,2635 | 50 | 13,43032 | $\phi =$ | 13,43032 | x ΔT | 1,2635 |
| TUB2-100/26 | 1958 | 1027 | 1,2635 | 50 | 13,96753 | $\phi =$ | 13,96753 | x ΔT | 1,2635 |
| TUB2-100/27 | 2033 | 1066 | 1,2635 | 50 | 14,50475 | $\phi =$ | 14,50475 | x ΔT | 1,2635 |
| TUB2-100/28 | 2108 | 1106 | 1,2635 | 50 | 15,04196 | $\phi =$ | 15,04196 | x ΔT | 1,2635 |
| TUB2-100/29 | 2184 | 1145 | 1,2635 | 50 | 15,57917 | $\phi =$ | 15,57917 | x ΔT | 1,2635 |
| TUB2-100/30 | 2259 | 1185 | 1,2635 | 50 | 16,11638 | $\phi =$ | 16,11638 | x ΔT | 1,2635 |
| TUB2-100/31 | 2334 | 1224 | 1,2635 | 50 | 16,65360 | $\phi =$ | 16,65360 | x ΔT | 1,2635 |
| TUB2-100/32 | 2410 | 1264 | 1,2635 | 50 | 17,19081 | $\phi =$ | 17,19081 | x ΔT | 1,2635 |
| TUB2-100/33 | 2485 | 1303 | 1,2635 | 50 | 17,72802 | $\phi =$ | 17,72802 | x ΔT | 1,2635 |
| TUB2-100/34 | 2560 | 1343 | 1,2635 | 50 | 18,26524 | $\phi =$ | 18,26524 | x ΔT | 1,2635 |
| TUB2-100/35 | 2636 | 1382 | 1,2635 | 50 | 18,80245 | $\phi =$ | 18,80245 | x ΔT | 1,2635 |
| TUB2-100/36 | 2711 | 1422 | 1,2635 | 50 | 19,33966 | $\phi =$ | 19,33966 | x ΔT | 1,2635 |
| TUB2-100/37 | 2786 | 1461 | 1,2635 | 50 | 19,87687 | $\phi =$ | 19,87687 | x ΔT | 1,2635 |
| TUB2-100/38 | 2861 | 1501 | 1,2635 | 50 | 20,41409 | $\phi =$ | 20,41409 | x ΔT | 1,2635 |
| TUB2-100/39 | 2937 | 1540 | 1,2635 | 50 | 20,95130 | $\phi =$ | 20,95130 | x ΔT | 1,2635 |
| TUB2-100/40 | 3012 | 1580 | 1,2635 | 50 | 21,48851 | $\phi =$ | 21,48851 | x ΔT | 1,2635 |
| TUB2-100/41 | 3087 | 1619 | 1,2635 | 50 | 22,02573 | $\phi =$ | 22,02573 | x ΔT | 1,2635 |
| TUB2-100/42 | 3163 | 1659 | 1,2635 | 50 | 22,56294 | $\phi =$ | 22,56294 | x ΔT | 1,2635 |
| TUB2-120/02 | 181 | 95 | 1,2672 | 50 | 1,27416 | $\phi =$ | 1,27416 | x ΔT | 1,2672 |
| TUB2-120/03 | 272 | 142 | 1,2672 | 50 | 1,91124 | $\phi =$ | 1,91124 | x ΔT | 1,2672 |
| TUB2-120/04 | 362 | 190 | 1,2672 | 50 | 2,54832 | $\phi =$ | 2,54832 | x ΔT | 1,2672 |
| TUB2-120/05 | 453 | 237 | 1,2672 | 50 | 3,18540 | $\phi =$ | 3,18540 | x ΔT | 1,2672 |
| TUB2-120/06 | 544 | 285 | 1,2672 | 50 | 3,82248 | $\phi =$ | 3,82248 | x ΔT | 1,2672 |
| TUB2-120/07 | 634 | 332 | 1,2672 | 50 | 4,45955 | $\phi =$ | 4,45955 | x ΔT | 1,2672 |
| TUB2-120/08 | 725 | 379 | 1,2672 | 50 | 5,09663 | $\phi =$ | 5,09663 | x ΔT | 1,2672 |
| TUB2-120/09 | 815 | 427 | 1,2672 | 50 | 5,73371 | $\phi =$ | 5,73371 | x ΔT | 1,2672 |
| TUB2-120/10 | 906 | 474 | 1,2672 | 50 | 6,37079 | $\phi =$ | 6,37079 | x ΔT | 1,2672 |
| TUB2-120/11 | 997 | 522 | 1,2672 | 50 | 7,00787 | $\phi =$ | 7,00787 | x ΔT | 1,2672 |
| TUB2-120/12 | 1087 | 569 | 1,2672 | 50 | 7,64495 | $\phi =$ | 7,64495 | x ΔT | 1,2672 |
| TUB2-120/13 | 1178 | 617 | 1,2672 | 50 | 8,28203 | $\phi =$ | 8,28203 | x ΔT | 1,2672 |
| TUB2-120/14 | 1268 | 664 | 1,2672 | 50 | 8,91911 | $\phi =$ | 8,91911 | x ΔT | 1,2672 |
| TUB2-120/15 | 1359 | 711 | 1,2672 | 50 | 9,55619 | $\phi =$ | 9,55619 | x ΔT | 1,2672 |
| TUB2-120/16 | 1450 | 759 | 1,2672 | 50 | 10,19327 | $\phi =$ | 10,19327 | x ΔT | 1,2672 |
| TUB2-120/17 | 1540 | 806 | 1,2672 | 50 | 10,83035 | $\phi =$ | 10,83035 | x ΔT | 1,2672 |
| TUB2-120/18 | 1631 | 854 | 1,2672 | 50 | 11,46743 | $\phi =$ | 11,46743 | x ΔT | 1,2672 |
| TUB2-120/19 | 1721 | 901 | 1,2672 | 50 | 12,10450 | $\phi =$ | 12,10450 | x ΔT | 1,2672 |
| TUB2-120/20 | 1812 | 948 | 1,2672 | 50 | 12,74158 | $\phi =$ | 12,74158 | x ΔT | 1,2672 |
| TUB2-120/21 | 1903 | 996 | 1,2672 | 50 | 13,37866 | $\phi =$ | 13,37866 | x ΔT | 1,2672 |
| TUB2-120/22 | 1993 | 1043 | 1,2672 | 50 | 14,01574 | $\phi =$ | 14,01574 | x ΔT | 1,2672 |
| TUB2-120/23 | 2084 | 1091 | 1,2672 | 50 | 14,65282 | $\phi =$ | 14,65282 | x ΔT | 1,2672 |
| TUB2-120/24 | 2174 | 1138 | 1,2672 | 50 | 15,28990 | $\phi =$ | 15,28990 | x ΔT | 1,2672 |
| TUB2-120/25 | 2265 | 1186 | 1,2672 | 50 | 15,92698 | $\phi =$ | 15,92698 | x ΔT | 1,2672 |
| TUB2-120/26 | 2356 | 1233 | 1,2672 | 50 | 16,56406 | $\phi =$ | 16,56406 | x ΔT | 1,2672 |
| TUB2-120/27 | 2446 | 1280 | 1,2672 | 50 | 17,20114 | $\phi =$ | 17,20114 | x ΔT | 1,2672 |
| TUB2-120/28 | 2537 | 1328 | 1,2672 | 50 | 17,83822 | $\phi =$ | 17,83822 | x ΔT | 1,2672 |
| TUB2-120/29 | 2627 | 1375 | 1,2672 | 50 | 18,47530 | $\phi =$ | 18,47530 | x ΔT | 1,2672 |
| TUB2-120/30 | 2718 | 1423 | 1,2672 | 50 | 19,11238 | $\phi =$ | 19,11238 | x ΔT | 1,2672 |
| TUB2-120/31 | 2809 | 1470 | 1,2672 | 50 | 19,74945 | $\phi =$ | 19,74945 | x ΔT | 1,2672 |
| TUB2-120/32 | 2899 | 1518 | 1,2672 | 50 | 20,38653 | $\phi =$ | 20,38653 | x ΔT | 1,2672 |
| TUB2-120/33 | 2990 | 1565 | 1,2672 | 50 | 21,02361 | $\phi =$ | 21,02361 | x ΔT | 1,2672 |
| TUB2-120/34 | 3080 | 1612 | 1,2672 | 50 | 21,66069 | $\phi =$ | 21,66069 | x ΔT | 1,2672 |
| TUB2-120/35 | 3171 | 1660 | 1,2672 | 50 | 22,29777 | $\phi =$ | 22,29777 | x ΔT | 1,2672 |
| TUB2-150/02 | 225 | 117 | 1,2706 | 50 | 1,55847 | $\phi =$ | 1,55847 | x ΔT | 1,2706 |

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|-------------|------|------|--------|----|----------|----------|----------|-------------------|--------|
| TUB2-150/03 | 337 | 176 | 1,2706 | 50 | 2,33771 | $\phi =$ | 2,33771 | $\times \Delta T$ | 1,2706 |
| TUB2-150/04 | 449 | 235 | 1,2706 | 50 | 3,11694 | $\phi =$ | 3,11694 | $\times \Delta T$ | 1,2706 |
| TUB2-150/05 | 562 | 293 | 1,2706 | 50 | 3,89618 | $\phi =$ | 3,89618 | $\times \Delta T$ | 1,2706 |
| TUB2-150/06 | 674 | 352 | 1,2706 | 50 | 4,67541 | $\phi =$ | 4,67541 | $\times \Delta T$ | 1,2706 |
| TUB2-150/07 | 786 | 411 | 1,2706 | 50 | 5,45465 | $\phi =$ | 5,45465 | $\times \Delta T$ | 1,2706 |
| TUB2-150/08 | 898 | 469 | 1,2706 | 50 | 6,23388 | $\phi =$ | 6,23388 | $\times \Delta T$ | 1,2706 |
| TUB2-150/09 | 1011 | 528 | 1,2706 | 50 | 7,01312 | $\phi =$ | 7,01312 | $\times \Delta T$ | 1,2706 |
| TUB2-150/10 | 1123 | 587 | 1,2706 | 50 | 7,79235 | $\phi =$ | 7,79235 | $\times \Delta T$ | 1,2706 |
| TUB2-150/11 | 1235 | 645 | 1,2706 | 50 | 8,57159 | $\phi =$ | 8,57159 | $\times \Delta T$ | 1,2706 |
| TUB2-150/12 | 1348 | 704 | 1,2706 | 50 | 9,35082 | $\phi =$ | 9,35082 | $\times \Delta T$ | 1,2706 |
| TUB2-150/13 | 1460 | 763 | 1,2706 | 50 | 10,13006 | $\phi =$ | 10,13006 | $\times \Delta T$ | 1,2706 |
| TUB2-150/14 | 1572 | 822 | 1,2706 | 50 | 10,90929 | $\phi =$ | 10,90929 | $\times \Delta T$ | 1,2706 |
| TUB2-150/15 | 1685 | 880 | 1,2706 | 50 | 11,68853 | $\phi =$ | 11,68853 | $\times \Delta T$ | 1,2706 |
| TUB2-150/16 | 1797 | 939 | 1,2706 | 50 | 12,46776 | $\phi =$ | 12,46776 | $\times \Delta T$ | 1,2706 |
| TUB2-150/17 | 1909 | 998 | 1,2706 | 50 | 13,24700 | $\phi =$ | 13,24700 | $\times \Delta T$ | 1,2706 |
| TUB2-150/18 | 2021 | 1056 | 1,2706 | 50 | 14,02623 | $\phi =$ | 14,02623 | $\times \Delta T$ | 1,2706 |
| TUB2-150/19 | 2134 | 1115 | 1,2706 | 50 | 14,80547 | $\phi =$ | 14,80547 | $\times \Delta T$ | 1,2706 |
| TUB2-150/20 | 2246 | 1174 | 1,2706 | 50 | 15,58470 | $\phi =$ | 15,58470 | $\times \Delta T$ | 1,2706 |
| TUB2-150/21 | 2358 | 1232 | 1,2706 | 50 | 16,36394 | $\phi =$ | 16,36394 | $\times \Delta T$ | 1,2706 |
| TUB2-150/22 | 2471 | 1291 | 1,2706 | 50 | 17,14317 | $\phi =$ | 17,14317 | $\times \Delta T$ | 1,2706 |
| TUB2-150/23 | 2583 | 1350 | 1,2706 | 50 | 17,92241 | $\phi =$ | 17,92241 | $\times \Delta T$ | 1,2706 |
| TUB2-150/24 | 2695 | 1408 | 1,2706 | 50 | 18,70164 | $\phi =$ | 18,70164 | $\times \Delta T$ | 1,2706 |
| TUB2-150/25 | 2808 | 1467 | 1,2706 | 50 | 19,48088 | $\phi =$ | 19,48088 | $\times \Delta T$ | 1,2706 |
| TUB2-150/26 | 2920 | 1526 | 1,2706 | 50 | 20,26011 | $\phi =$ | 20,26011 | $\times \Delta T$ | 1,2706 |
| TUB2-150/27 | 3032 | 1584 | 1,2706 | 50 | 21,03935 | $\phi =$ | 21,03935 | $\times \Delta T$ | 1,2706 |
| TUB2-150/28 | 3144 | 1643 | 1,2706 | 50 | 21,81858 | $\phi =$ | 21,81858 | $\times \Delta T$ | 1,2706 |
| TUB2-180/02 | 265 | 138 | 1,2747 | 50 | 1,80818 | $\phi =$ | 1,80818 | $\times \Delta T$ | 1,2747 |
| TUB2-180/03 | 397 | 207 | 1,2747 | 50 | 2,71227 | $\phi =$ | 2,71227 | $\times \Delta T$ | 1,2747 |
| TUB2-180/04 | 530 | 276 | 1,2747 | 50 | 3,61635 | $\phi =$ | 3,61635 | $\times \Delta T$ | 1,2747 |
| TUB2-180/05 | 662 | 345 | 1,2747 | 50 | 4,52044 | $\phi =$ | 4,52044 | $\times \Delta T$ | 1,2747 |
| TUB2-180/06 | 794 | 414 | 1,2747 | 50 | 5,42453 | $\phi =$ | 5,42453 | $\times \Delta T$ | 1,2747 |
| TUB2-180/07 | 927 | 483 | 1,2747 | 50 | 6,32862 | $\phi =$ | 6,32862 | $\times \Delta T$ | 1,2747 |
| TUB2-180/08 | 1059 | 552 | 1,2747 | 50 | 7,23271 | $\phi =$ | 7,23271 | $\times \Delta T$ | 1,2747 |
| TUB2-180/09 | 1192 | 621 | 1,2747 | 50 | 8,13680 | $\phi =$ | 8,13680 | $\times \Delta T$ | 1,2747 |
| TUB2-180/10 | 1324 | 690 | 1,2747 | 50 | 9,04088 | $\phi =$ | 9,04088 | $\times \Delta T$ | 1,2747 |
| TUB2-180/11 | 1456 | 759 | 1,2747 | 50 | 9,94497 | $\phi =$ | 9,94497 | $\times \Delta T$ | 1,2747 |
| TUB2-180/12 | 1589 | 828 | 1,2747 | 50 | 10,84906 | $\phi =$ | 10,84906 | $\times \Delta T$ | 1,2747 |
| TUB2-180/13 | 1721 | 898 | 1,2747 | 50 | 11,75315 | $\phi =$ | 11,75315 | $\times \Delta T$ | 1,2747 |
| TUB2-180/14 | 1854 | 967 | 1,2747 | 50 | 12,65724 | $\phi =$ | 12,65724 | $\times \Delta T$ | 1,2747 |
| TUB2-180/15 | 1986 | 1036 | 1,2747 | 50 | 13,56133 | $\phi =$ | 13,56133 | $\times \Delta T$ | 1,2747 |
| TUB2-180/16 | 2118 | 1105 | 1,2747 | 50 | 14,46542 | $\phi =$ | 14,46542 | $\times \Delta T$ | 1,2747 |
| TUB2-180/17 | 2251 | 1174 | 1,2747 | 50 | 15,36950 | $\phi =$ | 15,36950 | $\times \Delta T$ | 1,2747 |
| TUB2-180/18 | 2383 | 1243 | 1,2747 | 50 | 16,27359 | $\phi =$ | 16,27359 | $\times \Delta T$ | 1,2747 |
| TUB2-180/19 | 2516 | 1312 | 1,2747 | 50 | 17,17768 | $\phi =$ | 17,17768 | $\times \Delta T$ | 1,2747 |
| TUB2-180/20 | 2648 | 1381 | 1,2747 | 50 | 18,08177 | $\phi =$ | 18,08177 | $\times \Delta T$ | 1,2747 |
| TUB2-180/21 | 2780 | 1450 | 1,2747 | 50 | 18,98586 | $\phi =$ | 18,98586 | $\times \Delta T$ | 1,2747 |
| TUB2-180/22 | 2913 | 1519 | 1,2747 | 50 | 19,88995 | $\phi =$ | 19,88995 | $\times \Delta T$ | 1,2747 |
| TUB2-180/23 | 3045 | 1588 | 1,2747 | 50 | 20,79403 | $\phi =$ | 20,79403 | $\times \Delta T$ | 1,2747 |
| TUB2-200/02 | 290 | 151 | 1,2778 | 50 | 1,95369 | $\phi =$ | 1,95369 | $\times \Delta T$ | 1,2778 |
| TUB2-200/03 | 434 | 226 | 1,2778 | 50 | 2,93053 | $\phi =$ | 2,93053 | $\times \Delta T$ | 1,2778 |
| TUB2-200/04 | 579 | 302 | 1,2778 | 50 | 3,90737 | $\phi =$ | 3,90737 | $\times \Delta T$ | 1,2778 |
| TUB2-200/05 | 724 | 377 | 1,2778 | 50 | 4,88421 | $\phi =$ | 4,88421 | $\times \Delta T$ | 1,2778 |
| TUB2-200/06 | 869 | 452 | 1,2778 | 50 | 5,86106 | $\phi =$ | 5,86106 | $\times \Delta T$ | 1,2778 |
| TUB2-200/07 | 1014 | 528 | 1,2778 | 50 | 6,83790 | $\phi =$ | 6,83790 | $\times \Delta T$ | 1,2778 |
| TUB2-200/08 | 1158 | 603 | 1,2778 | 50 | 7,81474 | $\phi =$ | 7,81474 | $\times \Delta T$ | 1,2778 |
| TUB2-200/09 | 1303 | 678 | 1,2778 | 50 | 8,79159 | $\phi =$ | 8,79159 | $\times \Delta T$ | 1,2778 |
| TUB2-200/10 | 1448 | 754 | 1,2778 | 50 | 9,76843 | $\phi =$ | 9,76843 | $\times \Delta T$ | 1,2778 |
| TUB2-200/11 | 1593 | 829 | 1,2778 | 50 | 10,74527 | $\phi =$ | 10,74527 | $\times \Delta T$ | 1,2778 |
| TUB2-200/12 | 1738 | 905 | 1,2778 | 50 | 11,72211 | $\phi =$ | 11,72211 | $\times \Delta T$ | 1,2778 |
| TUB2-200/13 | 1882 | 980 | 1,2778 | 50 | 12,69896 | $\phi =$ | 12,69896 | $\times \Delta T$ | 1,2778 |
| TUB2-200/14 | 2027 | 1055 | 1,2778 | 50 | 13,67580 | $\phi =$ | 13,67580 | $\times \Delta T$ | 1,2778 |
| TUB2-200/15 | 2172 | 1131 | 1,2778 | 50 | 14,65264 | $\phi =$ | 14,65264 | $\times \Delta T$ | 1,2778 |
| TUB2-200/16 | 2317 | 1206 | 1,2778 | 50 | 15,62949 | $\phi =$ | 15,62949 | $\times \Delta T$ | 1,2778 |
| TUB2-200/17 | 2462 | 1282 | 1,2778 | 50 | 16,60633 | $\phi =$ | 16,60633 | $\times \Delta T$ | 1,2778 |
| TUB2-200/18 | 2606 | 1357 | 1,2778 | 50 | 17,58317 | $\phi =$ | 17,58317 | $\times \Delta T$ | 1,2778 |

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|-------------|------|------|--------|----|----------|----------|----------|--------------|--------|
| TUB2-200/19 | 2751 | 1432 | 1,2778 | 50 | 18,56001 | $\phi =$ | 18,56001 | x ΔT | 1,2778 |
| TUB2-200/20 | 2896 | 1508 | 1,2778 | 50 | 19,53686 | $\phi =$ | 19,53686 | x ΔT | 1,2778 |
| TUB2-200/21 | 3041 | 1583 | 1,2778 | 50 | 20,51370 | $\phi =$ | 20,51370 | x ΔT | 1,2778 |

W imieniu producenta podpisać:

(Signed for and on behalf of the manufacturer by:)

Z-ca Prezesa ds. realizacji

Bartosz Ścierzyński

Nowa Wieś 03.03.2023

INSTAL PROJEKT sp. z o.o.

(dawniej INSTAL-PROJEKT Gawłowski, Ścierzyński Sp. J.)

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NIP 888-10-04-722, BDO 000008268

tel. 54 235 59 05

Bartosz Ścierzyński
Bartosz Ścierzyński
 Członek Zarządu

.....
(podpis)

(signature)