

DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH
(DECLARATION OF PERFORMANCE)
Nr (No.) NDWU/1/TUBUS 3 D50/2021

1. Niepowtarzalny kod identyfikacyjny typu wyrobu: (Unique identification code of the product-type) TUBUS 3																								
2. Zamierzone zastosowanie lub zastosowania: W instalacjach grzewczych w budynkach (Intended use/es: In heating systems in buildings)																								
3. Producent: (Manufacturer:) INSTAL-PROJEKT Gawłowscy, Ścierzyńscy Spółka jawna, Nowa Wieś k/ Włocławka, ul. Jana Pawła II 12A, 87-853 Kruszyn, Polska. (INSTAL-PROJEKT Gawłowscy, Ścierzyńscy Spółka jawna, 87-853 Kruszyn, Nowa Wieś near Włocławek, Jana Pawła II 12A str., Poland.)																								
4. System(-y) oceny i weryfikacji stałości właściwości użytkowych: (System/s of AVCP:) System 3																								
5. Norma zharmonizowana: (Harmonised standard:) PN-EN 442-1:2015 EN 442-1:2014																								
6. Jednostka lub jednostki notyfikowane: (Notified body/ies): Notyfikowana jednostka badawcza Instytut Energetyki - Oddział Techniki Grzewczej i Sanitarnej ul. Wilcza 8, PL- 26-610 Radom . Nr akredytacji: AB 143, Nr notyfikacji: 1452, wykonała wstępne badanie typu i wydała sprawozdanie z badań. (Notified accredited body Instytut Energetyki - Oddział Techniki Grzewczej i Sanitarnej ul. Wilcza 8, PL- 26-610 Radom. Accreditation no. AB 143, Notification no. 1452, performed initial type testing and issued test reports)																								
7. Deklarowane właściwości użytkowe: (Declared performance/s:) <table border="1"> <thead> <tr> <th>Zasadnicze charakterystyki Essential characteristics</th> <th>Właściwości użytkowe Performance</th> <th>Zharmonizowana specyfikacja techniczna Harmonised technical specification</th> </tr> </thead> <tbody> <tr> <td>Reakcja na ogień (Reaction to fire)</td> <td>A1</td> <td rowspan="10">PN-EN 442-1:2015 EN 442-1:2014</td> </tr> <tr> <td>Uwalnianie substancji niebezpiecznych (Release of dangerous substances)</td> <td>Nie ma (None)</td> </tr> <tr> <td>Szczelność pod działaniem ciśnienia (Pressure tightness)</td> <td>Brak przecieku przy ciśnieniu 1,3 krotnie większym od maksymalnego ciśnienia [kPa] (No leakage at 1,3 x maximum operating pressure [kPa])</td> </tr> <tr> <td>Temperatura powierzchni (Surface temperature)</td> <td>Maksymalnie 95 °C (Maximum 95 °C)</td> </tr> <tr> <td>Odporność na działanie ciśnienia (Resistance to pressure)</td> <td>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 1000 [kPa])</td> </tr> <tr> <td>Nominalna moc cieplna (Φ 50 , Φ 30) (Rated thermal output) (Φ 50 , Φ 30)</td> <td>Patrz Tabela nr.1 (See Table No.1)</td> </tr> <tr> <td>Moc cieplna w różnych warunkach eksploatacyjnych (charakterystyka) (Thermal output in different operating conditions (characteristic curve))</td> <td>Patrz Tabela nr.1 (See Table No.1)</td> </tr> <tr> <td>Odporność na korozję (Resistance against corrosion)</td> <td>Brak korozji po 100 h w wilgoci (No corrosion after 100 h humidity)</td> </tr> <tr> <td>Odporność na słabe uderzenia (Resistance against minor impact)</td> <td>Klasa 0 (Class 0)</td> </tr> </tbody> </table>			Zasadnicze charakterystyki Essential characteristics	Właściwości użytkowe Performance	Zharmonizowana specyfikacja techniczna Harmonised technical specification	Reakcja na ogień (Reaction to fire)	A1	PN-EN 442-1:2015 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 1000 [kPa])	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)
Zasadnicze charakterystyki Essential characteristics	Właściwości użytkowe Performance	Zharmonizowana specyfikacja techniczna Harmonised technical specification																						
Reakcja na ogień (Reaction to fire)	A1	PN-EN 442-1:2015 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])																							
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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 1000 [kPa])																							
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.)

Tabela nr 1
(Table no. 1)

Model grzejnika	Normalna moc cieplna [W] (75/65/20°C) Φ ₅₀	Moc cieplna [W] (55/45/20°C) Φ ₃₀	Wykładnik n	ΔT	K _M	Moc cieplna w różnych warunkach eksploatacji				
Radiator model	Rated thermal output (75/65/20°C) Φ ₅₀	Rated thermal output (55/45/20°C) Φ ₃₀	Index exponent n	ΔT	K _M	Thermal output in different operating conditions (characteristic curve)				
TUB3-020/02D50	44	23	1,2616	50	0,3177	φ =	0,3177	x	ΔT	1,2616
TUB3-020/03D50	66	35	1,2616	50	0,4765	φ =	0,4765	x	ΔT	1,2616
TUB3-020/04D50	88	46	1,2616	50	0,6354	φ =	0,6354	x	ΔT	1,2616
TUB3-020/05D50	111	58	1,2616	50	0,7942	φ =	0,7942	x	ΔT	1,2616
TUB3-020/06D50	133	70	1,2616	50	0,9531	φ =	0,9531	x	ΔT	1,2616
TUB3-020/07D50	155	81	1,2616	50	1,1119	φ =	1,1119	x	ΔT	1,2616
TUB3-020/08D50	177	93	1,2616	50	1,2708	φ =	1,2708	x	ΔT	1,2616
TUB3-020/09D50	199	104	1,2616	50	1,4296	φ =	1,4296	x	ΔT	1,2616
TUB3-020/10D50	221	116	1,2616	50	1,5884	φ =	1,5884	x	ΔT	1,2616
TUB3-020/11D50	243	128	1,2616	50	1,7473	φ =	1,7473	x	ΔT	1,2616
TUB3-020/12D50	265	139	1,2616	50	1,9061	φ =	1,9061	x	ΔT	1,2616
TUB3-020/13D50	287	151	1,2616	50	2,0650	φ =	2,0650	x	ΔT	1,2616
TUB3-020/14D50	309	162	1,2616	50	2,2238	φ =	2,2238	x	ΔT	1,2616
TUB3-020/15D50	332	174	1,2616	50	2,3827	φ =	2,3827	x	ΔT	1,2616
TUB3-020/16D50	354	186	1,2616	50	2,5415	φ =	2,5415	x	ΔT	1,2616
TUB3-020/17D50	376	197	1,2616	50	2,7004	φ =	2,7004	x	ΔT	1,2616
TUB3-020/18D50	398	209	1,2616	50	2,8592	φ =	2,8592	x	ΔT	1,2616
TUB3-020/19D50	420	220	1,2616	50	3,0180	φ =	3,0180	x	ΔT	1,2616
TUB3-020/20D50	442	232	1,2616	50	3,1769	φ =	3,1769	x	ΔT	1,2616
TUB3-020/21D50	464	244	1,2616	50	3,3357	φ =	3,3357	x	ΔT	1,2616
TUB3-020/22D50	486	255	1,2616	50	3,4946	φ =	3,4946	x	ΔT	1,2616
TUB3-020/23D50	508	267	1,2616	50	3,6534	φ =	3,6534	x	ΔT	1,2616
TUB3-020/24D50	530	278	1,2616	50	3,8123	φ =	3,8123	x	ΔT	1,2616
TUB3-020/25D50	553	290	1,2616	50	3,9711	φ =	3,9711	x	ΔT	1,2616
TUB3-020/26D50	575	302	1,2616	50	4,1300	φ =	4,1300	x	ΔT	1,2616
TUB3-020/27D50	597	313	1,2616	50	4,2888	φ =	4,2888	x	ΔT	1,2616
TUB3-020/28D50	619	325	1,2616	50	4,4476	φ =	4,4476	x	ΔT	1,2616
TUB3-020/29D50	641	336	1,2616	50	4,6065	φ =	4,6065	x	ΔT	1,2616
TUB3-020/30D50	663	348	1,2616	50	4,7653	φ =	4,7653	x	ΔT	1,2616
TUB3-020/31D50	685	360	1,2616	50	4,9242	φ =	4,9242	x	ΔT	1,2616
TUB3-020/32D50	707	371	1,2616	50	5,0830	φ =	5,0830	x	ΔT	1,2616
TUB3-020/33D50	729	383	1,2616	50	5,2419	φ =	5,2419	x	ΔT	1,2616
TUB3-020/34D50	751	394	1,2616	50	5,4007	φ =	5,4007	x	ΔT	1,2616
TUB3-020/35D50	774	406	1,2616	50	5,5596	φ =	5,5596	x	ΔT	1,2616
TUB3-020/36D50	796	418	1,2616	50	5,7184	φ =	5,7184	x	ΔT	1,2616
TUB3-020/37D50	818	429	1,2616	50	5,8772	φ =	5,8772	x	ΔT	1,2616

TUB3-020/38D50	840	441	1,2616	50	6,0361	$\phi =$	6,0361	x	ΔT	1,2616
TUB3-020/39D50	862	452	1,2616	50	6,1949	$\phi =$	6,1949	x	ΔT	1,2616
TUB3-020/40D50	884	464	1,2616	50	6,3538	$\phi =$	6,3538	x	ΔT	1,2616
TUB3-020/41D50	906	476	1,2616	50	6,5126	$\phi =$	6,5126	x	ΔT	1,2616
TUB3-020/42D50	928	487	1,2616	50	6,6715	$\phi =$	6,6715	x	ΔT	1,2616
TUB3-020/43D50	950	499	1,2616	50	6,8303	$\phi =$	6,8303	x	ΔT	1,2616
TUB3-020/44D50	972	510	1,2616	50	6,9892	$\phi =$	6,9892	x	ΔT	1,2616
TUB3-020/45D50	995	522	1,2616	50	7,1480	$\phi =$	7,1480	x	ΔT	1,2616
TUB3-030/02D50	65	34	1,2667	50	0,4551	$\phi =$	0,4551	x	ΔT	1,2667
TUB3-030/03D50	97	51	1,2667	50	0,6827	$\phi =$	0,6827	x	ΔT	1,2667
TUB3-030/04D50	129	68	1,2667	50	0,9103	$\phi =$	0,9103	x	ΔT	1,2667
TUB3-030/05D50	162	85	1,2667	50	1,1379	$\phi =$	1,1379	x	ΔT	1,2667
TUB3-030/06D50	194	101	1,2667	50	1,3654	$\phi =$	1,3654	x	ΔT	1,2667
TUB3-030/07D50	226	118	1,2667	50	1,5930	$\phi =$	1,5930	x	ΔT	1,2667
TUB3-030/08D50	258	135	1,2667	50	1,8206	$\phi =$	1,8206	x	ΔT	1,2667
TUB3-030/09D50	291	152	1,2667	50	2,0481	$\phi =$	2,0481	x	ΔT	1,2667
TUB3-030/10D50	323	169	1,2667	50	2,2757	$\phi =$	2,2757	x	ΔT	1,2667
TUB3-030/11D50	355	186	1,2667	50	2,5033	$\phi =$	2,5033	x	ΔT	1,2667
TUB3-030/12D50	388	203	1,2667	50	2,7309	$\phi =$	2,7309	x	ΔT	1,2667
TUB3-030/13D50	420	220	1,2667	50	2,9584	$\phi =$	2,9584	x	ΔT	1,2667
TUB3-030/14D50	452	237	1,2667	50	3,1860	$\phi =$	3,1860	x	ΔT	1,2667
TUB3-030/15D50	485	254	1,2667	50	3,4136	$\phi =$	3,4136	x	ΔT	1,2667
TUB3-030/16D50	517	271	1,2667	50	3,6411	$\phi =$	3,6411	x	ΔT	1,2667
TUB3-030/17D50	549	287	1,2667	50	3,8687	$\phi =$	3,8687	x	ΔT	1,2667
TUB3-030/18D50	581	304	1,2667	50	4,0963	$\phi =$	4,0963	x	ΔT	1,2667
TUB3-030/19D50	614	321	1,2667	50	4,3239	$\phi =$	4,3239	x	ΔT	1,2667
TUB3-030/20D50	646	338	1,2667	50	4,5514	$\phi =$	4,5514	x	ΔT	1,2667
TUB3-030/21D50	678	355	1,2667	50	4,7790	$\phi =$	4,7790	x	ΔT	1,2667
TUB3-030/22D50	711	372	1,2667	50	5,0066	$\phi =$	5,0066	x	ΔT	1,2667
TUB3-030/23D50	743	389	1,2667	50	5,2341	$\phi =$	5,2341	x	ΔT	1,2667
TUB3-030/24D50	775	406	1,2667	50	5,4617	$\phi =$	5,4617	x	ΔT	1,2667
TUB3-030/25D50	808	423	1,2667	50	5,6893	$\phi =$	5,6893	x	ΔT	1,2667
TUB3-030/26D50	840	440	1,2667	50	5,9169	$\phi =$	5,9169	x	ΔT	1,2667
TUB3-030/27D50	872	457	1,2667	50	6,1444	$\phi =$	6,1444	x	ΔT	1,2667
TUB3-030/28D50	904	474	1,2667	50	6,3720	$\phi =$	6,3720	x	ΔT	1,2667
TUB3-030/29D50	937	490	1,2667	50	6,5996	$\phi =$	6,5996	x	ΔT	1,2667
TUB3-030/30D50	969	507	1,2667	50	6,8271	$\phi =$	6,8271	x	ΔT	1,2667
TUB3-030/31D50	1001	524	1,2667	50	7,0547	$\phi =$	7,0547	x	ΔT	1,2667
TUB3-030/32D50	1034	541	1,2667	50	7,2823	$\phi =$	7,2823	x	ΔT	1,2667
TUB3-030/33D50	1066	558	1,2667	50	7,5098	$\phi =$	7,5098	x	ΔT	1,2667
TUB3-030/34D50	1098	575	1,2667	50	7,7374	$\phi =$	7,7374	x	ΔT	1,2667
TUB3-030/35D50	1131	592	1,2667	50	7,9650	$\phi =$	7,9650	x	ΔT	1,2667
TUB3-030/36D50	1163	609	1,2667	50	8,1926	$\phi =$	8,1926	x	ΔT	1,2667
TUB3-030/37D50	1195	626	1,2667	50	8,4201	$\phi =$	8,4201	x	ΔT	1,2667
TUB3-030/38D50	1227	643	1,2667	50	8,6477	$\phi =$	8,6477	x	ΔT	1,2667
TUB3-030/39D50	1260	660	1,2667	50	8,8753	$\phi =$	8,8753	x	ΔT	1,2667
TUB3-030/40D50	1292	676	1,2667	50	9,1028	$\phi =$	9,1028	x	ΔT	1,2667

TUB3-030/41D50	1324	693	1,2667	50	9,3304	$\phi =$	9,3304	x	ΔT	1,2667
TUB3-030/42D50	1357	710	1,2667	50	9,5580	$\phi =$	9,5580	x	ΔT	1,2667
TUB3-030/43D50	1389	727	1,2667	50	9,7856	$\phi =$	9,7856	x	ΔT	1,2667
TUB3-030/44D50	1421	744	1,2667	50	10,0131	$\phi =$	10,0131	x	ΔT	1,2667
TUB3-030/45D50	1454	761	1,2667	50	10,2407	$\phi =$	10,2407	x	ΔT	1,2667
TUB3-040/02D50	85	44	1,2698	50	0,5889	$\phi =$	0,5889	x	ΔT	1,2698
TUB3-040/03D50	127	66	1,2698	50	0,8833	$\phi =$	0,8833	x	ΔT	1,2698
TUB3-040/04D50	169	88	1,2698	50	1,1777	$\phi =$	1,1777	x	ΔT	1,2698
TUB3-040/05D50	212	111	1,2698	50	1,4722	$\phi =$	1,4722	x	ΔT	1,2698
TUB3-040/06D50	254	133	1,2698	50	1,7666	$\phi =$	1,7666	x	ΔT	1,2698
TUB3-040/07D50	296	155	1,2698	50	2,0610	$\phi =$	2,0610	x	ΔT	1,2698
TUB3-040/08D50	338	177	1,2698	50	2,3555	$\phi =$	2,3555	x	ΔT	1,2698
TUB3-040/09D50	381	199	1,2698	50	2,6499	$\phi =$	2,6499	x	ΔT	1,2698
TUB3-040/10D50	423	221	1,2698	50	2,9443	$\phi =$	2,9443	x	ΔT	1,2698
TUB3-040/11D50	465	243	1,2698	50	3,2388	$\phi =$	3,2388	x	ΔT	1,2698
TUB3-040/12D50	508	265	1,2698	50	3,5332	$\phi =$	3,5332	x	ΔT	1,2698
TUB3-040/13D50	550	287	1,2698	50	3,8276	$\phi =$	3,8276	x	ΔT	1,2698
TUB3-040/14D50	592	310	1,2698	50	4,1221	$\phi =$	4,1221	x	ΔT	1,2698
TUB3-040/15D50	635	332	1,2698	50	4,4165	$\phi =$	4,4165	x	ΔT	1,2698
TUB3-040/16D50	677	354	1,2698	50	4,7109	$\phi =$	4,7109	x	ΔT	1,2698
TUB3-040/17D50	719	376	1,2698	50	5,0054	$\phi =$	5,0054	x	ΔT	1,2698
TUB3-040/18D50	761	398	1,2698	50	5,2998	$\phi =$	5,2998	x	ΔT	1,2698
TUB3-040/19D50	804	420	1,2698	50	5,5942	$\phi =$	5,5942	x	ΔT	1,2698
TUB3-040/20D50	846	442	1,2698	50	5,8887	$\phi =$	5,8887	x	ΔT	1,2698
TUB3-040/21D50	888	464	1,2698	50	6,1831	$\phi =$	6,1831	x	ΔT	1,2698
TUB3-040/22D50	931	486	1,2698	50	6,4776	$\phi =$	6,4776	x	ΔT	1,2698
TUB3-040/23D50	973	509	1,2698	50	6,7720	$\phi =$	6,7720	x	ΔT	1,2698
TUB3-040/24D50	1015	531	1,2698	50	7,0664	$\phi =$	7,0664	x	ΔT	1,2698
TUB3-040/25D50	1058	553	1,2698	50	7,3609	$\phi =$	7,3609	x	ΔT	1,2698
TUB3-040/26D50	1100	575	1,2698	50	7,6553	$\phi =$	7,6553	x	ΔT	1,2698
TUB3-040/27D50	1142	597	1,2698	50	7,9497	$\phi =$	7,9497	x	ΔT	1,2698
TUB3-040/28D50	1184	619	1,2698	50	8,2442	$\phi =$	8,2442	x	ΔT	1,2698
TUB3-040/29D50	1227	641	1,2698	50	8,5386	$\phi =$	8,5386	x	ΔT	1,2698
TUB3-040/30D50	1269	663	1,2698	50	8,8330	$\phi =$	8,8330	x	ΔT	1,2698
TUB3-040/31D50	1311	685	1,2698	50	9,1275	$\phi =$	9,1275	x	ΔT	1,2698
TUB3-040/32D50	1354	708	1,2698	50	9,4219	$\phi =$	9,4219	x	ΔT	1,2698
TUB3-040/33D50	1396	730	1,2698	50	9,7163	$\phi =$	9,7163	x	ΔT	1,2698
TUB3-040/34D50	1438	752	1,2698	50	10,0108	$\phi =$	10,0108	x	ΔT	1,2698
TUB3-040/35D50	1481	774	1,2698	50	10,3052	$\phi =$	10,3052	x	ΔT	1,2698
TUB3-040/36D50	1523	796	1,2698	50	10,5996	$\phi =$	10,5996	x	ΔT	1,2698
TUB3-040/37D50	1565	818	1,2698	50	10,8941	$\phi =$	10,8941	x	ΔT	1,2698
TUB3-040/38D50	1607	840	1,2698	50	11,1885	$\phi =$	11,1885	x	ΔT	1,2698
TUB3-040/39D50	1650	862	1,2698	50	11,4829	$\phi =$	11,4829	x	ΔT	1,2698
TUB3-040/40D50	1692	884	1,2698	50	11,7774	$\phi =$	11,7774	x	ΔT	1,2698
TUB3-040/41D50	1734	907	1,2698	50	12,0718	$\phi =$	12,0718	x	ΔT	1,2698
TUB3-040/42D50	1777	929	1,2698	50	12,3662	$\phi =$	12,3662	x	ΔT	1,2698
TUB3-040/43D50	1819	951	1,2698	50	12,6607	$\phi =$	12,6607	x	ΔT	1,2698

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TUB3-040/44D50	1861	973	1,2698	50	12,9551	$\phi =$	12,9551	x	ΔT	1,2698
TUB3-040/45D50	1904	995	1,2698	50	13,2495	$\phi =$	13,2495	x	ΔT	1,2698
TUB3-050/02D50	104	55	1,2722	50	0,7199	$\phi =$	0,7199	x	ΔT	1,2722
TUB3-050/03D50	157	82	1,2722	50	1,0798	$\phi =$	1,0798	x	ΔT	1,2722
TUB3-050/04D50	209	109	1,2722	50	1,4398	$\phi =$	1,4398	x	ΔT	1,2722
TUB3-050/05D50	261	136	1,2722	50	1,7997	$\phi =$	1,7997	x	ΔT	1,2722
TUB3-050/06D50	313	164	1,2722	50	2,1597	$\phi =$	2,1597	x	ΔT	1,2722
TUB3-050/07D50	365	191	1,2722	50	2,5196	$\phi =$	2,5196	x	ΔT	1,2722
TUB3-050/08D50	418	218	1,2722	50	2,8796	$\phi =$	2,8796	x	ΔT	1,2722
TUB3-050/09D50	470	245	1,2722	50	3,2395	$\phi =$	3,2395	x	ΔT	1,2722
TUB3-050/10D50	522	273	1,2722	50	3,5995	$\phi =$	3,5995	x	ΔT	1,2722
TUB3-050/11D50	574	300	1,2722	50	3,9594	$\phi =$	3,9594	x	ΔT	1,2722
TUB3-050/12D50	626	327	1,2722	50	4,3194	$\phi =$	4,3194	x	ΔT	1,2722
TUB3-050/13D50	679	354	1,2722	50	4,6793	$\phi =$	4,6793	x	ΔT	1,2722
TUB3-050/14D50	731	382	1,2722	50	5,0393	$\phi =$	5,0393	x	ΔT	1,2722
TUB3-050/15D50	783	409	1,2722	50	5,3992	$\phi =$	5,3992	x	ΔT	1,2722
TUB3-050/16D50	835	436	1,2722	50	5,7592	$\phi =$	5,7592	x	ΔT	1,2722
TUB3-050/17D50	887	463	1,2722	50	6,1191	$\phi =$	6,1191	x	ΔT	1,2722
TUB3-050/18D50	940	491	1,2722	50	6,4791	$\phi =$	6,4791	x	ΔT	1,2722
TUB3-050/19D50	992	518	1,2722	50	6,8390	$\phi =$	6,8390	x	ΔT	1,2722
TUB3-050/20D50	1044	545	1,2722	50	7,1990	$\phi =$	7,1990	x	ΔT	1,2722
TUB3-050/21D50	1096	572	1,2722	50	7,5589	$\phi =$	7,5589	x	ΔT	1,2722
TUB3-050/22D50	1148	600	1,2722	50	7,9189	$\phi =$	7,9189	x	ΔT	1,2722
TUB3-050/23D50	1201	627	1,2722	50	8,2788	$\phi =$	8,2788	x	ΔT	1,2722
TUB3-050/24D50	1253	654	1,2722	50	8,6388	$\phi =$	8,6388	x	ΔT	1,2722
TUB3-050/25D50	1305	681	1,2722	50	8,9987	$\phi =$	8,9987	x	ΔT	1,2722
TUB3-050/26D50	1357	709	1,2722	50	9,3587	$\phi =$	9,3587	x	ΔT	1,2722
TUB3-050/27D50	1409	736	1,2722	50	9,7186	$\phi =$	9,7186	x	ΔT	1,2722
TUB3-050/28D50	1462	763	1,2722	50	10,0786	$\phi =$	10,0786	x	ΔT	1,2722
TUB3-050/29D50	1514	790	1,2722	50	10,4385	$\phi =$	10,4385	x	ΔT	1,2722
TUB3-050/30D50	1566	818	1,2722	50	10,7985	$\phi =$	10,7985	x	ΔT	1,2722
TUB3-050/31D50	1618	845	1,2722	50	11,1584	$\phi =$	11,1584	x	ΔT	1,2722
TUB3-050/32D50	1670	872	1,2722	50	11,5184	$\phi =$	11,5184	x	ΔT	1,2722
TUB3-050/33D50	1723	899	1,2722	50	11,8783	$\phi =$	11,8783	x	ΔT	1,2722
TUB3-050/34D50	1775	927	1,2722	50	12,2383	$\phi =$	12,2383	x	ΔT	1,2722
TUB3-050/35D50	1827	954	1,2722	50	12,5982	$\phi =$	12,5982	x	ΔT	1,2722
TUB3-050/36D50	1879	981	1,2722	50	12,9582	$\phi =$	12,9582	x	ΔT	1,2722
TUB3-050/37D50	1931	1008	1,2722	50	13,3181	$\phi =$	13,3181	x	ΔT	1,2722
TUB3-050/38D50	1984	1036	1,2722	50	13,6781	$\phi =$	13,6781	x	ΔT	1,2722
TUB3-050/39D50	2036	1063	1,2722	50	14,0380	$\phi =$	14,0380	x	ΔT	1,2722
TUB3-050/40D50	2088	1090	1,2722	50	14,3980	$\phi =$	14,3980	x	ΔT	1,2722
TUB3-050/41D50	2140	1117	1,2722	50	14,7579	$\phi =$	14,7579	x	ΔT	1,2722
TUB3-050/42D50	2192	1145	1,2722	50	15,1179	$\phi =$	15,1179	x	ΔT	1,2722
TUB3-050/43D50	2245	1172	1,2722	50	15,4778	$\phi =$	15,4778	x	ΔT	1,2722
TUB3-050/44D50	2297	1199	1,2722	50	15,8378	$\phi =$	15,8378	x	ΔT	1,2722
TUB3-050/45D50	2349	1226	1,2722	50	16,1977	$\phi =$	16,1977	x	ΔT	1,2722
TUB3-070/02D50	143	75	1,2762	50	0,9735	$\phi =$	0,9735	x	ΔT	1,2762

TUB3-070/03D50	215	112	1,2762	50	1,4602	$\phi =$	1,4602	x	ΔT	1,2762
TUB3-070/04D50	287	149	1,2762	50	1,9469	$\phi =$	1,9469	x	ΔT	1,2762
TUB3-070/05D50	359	187	1,2762	50	2,4337	$\phi =$	2,4337	x	ΔT	1,2762
TUB3-070/06D50	430	224	1,2762	50	2,9204	$\phi =$	2,9204	x	ΔT	1,2762
TUB3-070/07D50	502	262	1,2762	50	3,4072	$\phi =$	3,4072	x	ΔT	1,2762
TUB3-070/08D50	574	299	1,2762	50	3,8939	$\phi =$	3,8939	x	ΔT	1,2762
TUB3-070/09D50	645	336	1,2762	50	4,3806	$\phi =$	4,3806	x	ΔT	1,2762
TUB3-070/10D50	717	374	1,2762	50	4,8674	$\phi =$	4,8674	x	ΔT	1,2762
TUB3-070/11D50	789	411	1,2762	50	5,3541	$\phi =$	5,3541	x	ΔT	1,2762
TUB3-070/12D50	860	448	1,2762	50	5,8408	$\phi =$	5,8408	x	ΔT	1,2762
TUB3-070/13D50	932	486	1,2762	50	6,3276	$\phi =$	6,3276	x	ΔT	1,2762
TUB3-070/14D50	1004	523	1,2762	50	6,8143	$\phi =$	6,8143	x	ΔT	1,2762
TUB3-070/15D50	1076	560	1,2762	50	7,3010	$\phi =$	7,3010	x	ΔT	1,2762
TUB3-070/16D50	1147	598	1,2762	50	7,7878	$\phi =$	7,7878	x	ΔT	1,2762
TUB3-070/17D50	1219	635	1,2762	50	8,2745	$\phi =$	8,2745	x	ΔT	1,2762
TUB3-070/18D50	1291	672	1,2762	50	8,7613	$\phi =$	8,7613	x	ΔT	1,2762
TUB3-070/19D50	1362	710	1,2762	50	9,2480	$\phi =$	9,2480	x	ΔT	1,2762
TUB3-070/20D50	1434	747	1,2762	50	9,7347	$\phi =$	9,7347	x	ΔT	1,2762
TUB3-070/21D50	1506	785	1,2762	50	10,2215	$\phi =$	10,2215	x	ΔT	1,2762
TUB3-070/22D50	1577	822	1,2762	50	10,7082	$\phi =$	10,7082	x	ΔT	1,2762
TUB3-070/23D50	1649	859	1,2762	50	11,1949	$\phi =$	11,1949	x	ΔT	1,2762
TUB3-070/24D50	1721	897	1,2762	50	11,6817	$\phi =$	11,6817	x	ΔT	1,2762
TUB3-070/25D50	1793	934	1,2762	50	12,1684	$\phi =$	12,1684	x	ΔT	1,2762
TUB3-070/26D50	1864	971	1,2762	50	12,6551	$\phi =$	12,6551	x	ΔT	1,2762
TUB3-070/27D50	1936	1009	1,2762	50	13,1419	$\phi =$	13,1419	x	ΔT	1,2762
TUB3-070/28D50	2008	1046	1,2762	50	13,6286	$\phi =$	13,6286	x	ΔT	1,2762
TUB3-070/29D50	2079	1083	1,2762	50	14,1153	$\phi =$	14,1153	x	ΔT	1,2762
TUB3-070/30D50	2151	1121	1,2762	50	14,6021	$\phi =$	14,6021	x	ΔT	1,2762
TUB3-070/31D50	2223	1158	1,2762	50	15,0888	$\phi =$	15,0888	x	ΔT	1,2762
TUB3-070/32D50	2294	1195	1,2762	50	15,5756	$\phi =$	15,5756	x	ΔT	1,2762
TUB3-070/33D50	2366	1233	1,2762	50	16,0623	$\phi =$	16,0623	x	ΔT	1,2762
TUB3-070/34D50	2438	1270	1,2762	50	16,5490	$\phi =$	16,5490	x	ΔT	1,2762
TUB3-070/35D50	2510	1308	1,2762	50	17,0358	$\phi =$	17,0358	x	ΔT	1,2762
TUB3-070/36D50	2581	1345	1,2762	50	17,5225	$\phi =$	17,5225	x	ΔT	1,2762
TUB3-070/37D50	2653	1382	1,2762	50	18,0092	$\phi =$	18,0092	x	ΔT	1,2762
TUB3-070/38D50	2725	1420	1,2762	50	18,4960	$\phi =$	18,4960	x	ΔT	1,2762
TUB3-070/39D50	2796	1457	1,2762	50	18,9827	$\phi =$	18,9827	x	ΔT	1,2762
TUB3-070/40D50	2868	1494	1,2762	50	19,4694	$\phi =$	19,4694	x	ΔT	1,2762
TUB3-070/41D50	2940	1532	1,2762	50	19,9562	$\phi =$	19,9562	x	ΔT	1,2762
TUB3-070/42D50	3011	1569	1,2762	50	20,4429	$\phi =$	20,4429	x	ΔT	1,2762
TUB3-080/02D50	163	85	1,2779	50	1,0978	$\phi =$	1,0978	x	ΔT	1,2779
TUB3-080/03D50	244	127	1,2779	50	1,6468	$\phi =$	1,6468	x	ΔT	1,2779
TUB3-080/04D50	326	170	1,2779	50	2,1957	$\phi =$	2,1957	x	ΔT	1,2779
TUB3-080/05D50	407	212	1,2779	50	2,7446	$\phi =$	2,7446	x	ΔT	1,2779
TUB3-080/06D50	488	254	1,2779	50	3,2935	$\phi =$	3,2935	x	ΔT	1,2779
TUB3-080/07D50	570	297	1,2779	50	3,8425	$\phi =$	3,8425	x	ΔT	1,2779
TUB3-080/08D50	651	339	1,2779	50	4,3914	$\phi =$	4,3914	x	ΔT	1,2779

TUB3-080/09D50	733	381	1,2779	50	4,9403	$\phi =$	4,9403	x	ΔT	1,2779
TUB3-080/10D50	814	424	1,2779	50	5,4892	$\phi =$	5,4892	x	ΔT	1,2779
TUB3-080/11D50	895	466	1,2779	50	6,0381	$\phi =$	6,0381	x	ΔT	1,2779
TUB3-080/12D50	977	509	1,2779	50	6,5871	$\phi =$	6,5871	x	ΔT	1,2779
TUB3-080/13D50	1058	551	1,2779	50	7,1360	$\phi =$	7,1360	x	ΔT	1,2779
TUB3-080/14D50	1140	593	1,2779	50	7,6849	$\phi =$	7,6849	x	ΔT	1,2779
TUB3-080/15D50	1221	636	1,2779	50	8,2338	$\phi =$	8,2338	x	ΔT	1,2779
TUB3-080/16D50	1302	678	1,2779	50	8,7828	$\phi =$	8,7828	x	ΔT	1,2779
TUB3-080/17D50	1384	720	1,2779	50	9,3317	$\phi =$	9,3317	x	ΔT	1,2779
TUB3-080/18D50	1465	763	1,2779	50	9,8806	$\phi =$	9,8806	x	ΔT	1,2779
TUB3-080/19D50	1547	805	1,2779	50	10,4295	$\phi =$	10,4295	x	ΔT	1,2779
TUB3-080/20D50	1628	848	1,2779	50	10,9784	$\phi =$	10,9784	x	ΔT	1,2779
TUB3-080/21D50	1709	890	1,2779	50	11,5274	$\phi =$	11,5274	x	ΔT	1,2779
TUB3-080/22D50	1791	932	1,2779	50	12,0763	$\phi =$	12,0763	x	ΔT	1,2779
TUB3-080/23D50	1872	975	1,2779	50	12,6252	$\phi =$	12,6252	x	ΔT	1,2779
TUB3-080/24D50	1954	1017	1,2779	50	13,1741	$\phi =$	13,1741	x	ΔT	1,2779
TUB3-080/25D50	2035	1059	1,2779	50	13,7230	$\phi =$	13,7230	x	ΔT	1,2779
TUB3-080/26D50	2116	1102	1,2779	50	14,2720	$\phi =$	14,2720	x	ΔT	1,2779
TUB3-080/27D50	2198	1144	1,2779	50	14,8209	$\phi =$	14,8209	x	ΔT	1,2779
TUB3-080/28D50	2279	1187	1,2779	50	15,3698	$\phi =$	15,3698	x	ΔT	1,2779
TUB3-080/29D50	2361	1229	1,2779	50	15,9187	$\phi =$	15,9187	x	ΔT	1,2779
TUB3-080/30D50	2442	1271	1,2779	50	16,4677	$\phi =$	16,4677	x	ΔT	1,2779
TUB3-080/31D50	2523	1314	1,2779	50	17,0166	$\phi =$	17,0166	x	ΔT	1,2779
TUB3-080/32D50	2605	1356	1,2779	50	17,5655	$\phi =$	17,5655	x	ΔT	1,2779
TUB3-080/33D50	2686	1398	1,2779	50	18,1144	$\phi =$	18,1144	x	ΔT	1,2779
TUB3-080/34D50	2768	1441	1,2779	50	18,6633	$\phi =$	18,6633	x	ΔT	1,2779
TUB3-080/35D50	2849	1483	1,2779	50	19,2123	$\phi =$	19,2123	x	ΔT	1,2779
TUB3-080/36D50	2930	1526	1,2779	50	19,7612	$\phi =$	19,7612	x	ΔT	1,2779
TUB3-080/37D50	3012	1568	1,2779	50	20,3101	$\phi =$	20,3101	x	ΔT	1,2779
TUB3-090/02D50	182	95	1,2795	50	1,2197	$\phi =$	1,2197	x	ΔT	1,2795
TUB3-090/03D50	273	142	1,2795	50	1,8295	$\phi =$	1,8295	x	ΔT	1,2795
TUB3-090/04D50	364	189	1,2795	50	2,4393	$\phi =$	2,4393	x	ΔT	1,2795
TUB3-090/05D50	455	237	1,2795	50	3,0492	$\phi =$	3,0492	x	ΔT	1,2795
TUB3-090/06D50	546	284	1,2795	50	3,6590	$\phi =$	3,6590	x	ΔT	1,2795
TUB3-090/07D50	637	331	1,2795	50	4,2688	$\phi =$	4,2688	x	ΔT	1,2795
TUB3-090/08D50	728	379	1,2795	50	4,8786	$\phi =$	4,8786	x	ΔT	1,2795
TUB3-090/09D50	819	426	1,2795	50	5,4885	$\phi =$	5,4885	x	ΔT	1,2795
TUB3-090/10D50	910	473	1,2795	50	6,0983	$\phi =$	6,0983	x	ΔT	1,2795
TUB3-090/11D50	1001	521	1,2795	50	6,7081	$\phi =$	6,7081	x	ΔT	1,2795
TUB3-090/12D50	1092	568	1,2795	50	7,3180	$\phi =$	7,3180	x	ΔT	1,2795
TUB3-090/13D50	1183	615	1,2795	50	7,9278	$\phi =$	7,9278	x	ΔT	1,2795
TUB3-090/14D50	1274	663	1,2795	50	8,5376	$\phi =$	8,5376	x	ΔT	1,2795
TUB3-090/15D50	1365	710	1,2795	50	9,1475	$\phi =$	9,1475	x	ΔT	1,2795
TUB3-090/16D50	1456	757	1,2795	50	9,7573	$\phi =$	9,7573	x	ΔT	1,2795
TUB3-090/17D50	1547	805	1,2795	50	10,3671	$\phi =$	10,3671	x	ΔT	1,2795
TUB3-090/18D50	1638	852	1,2795	50	10,9770	$\phi =$	10,9770	x	ΔT	1,2795
TUB3-090/19D50	1729	899	1,2795	50	11,5868	$\phi =$	11,5868	x	ΔT	1,2795

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TUB3-090/20D50	1820	947	1,2795	50	12,1966	$\phi =$	12,1966	x	ΔT	1,2795
TUB3-090/21D50	1911	994	1,2795	50	12,8064	$\phi =$	12,8064	x	ΔT	1,2795
TUB3-090/22D50	2002	1041	1,2795	50	13,4163	$\phi =$	13,4163	x	ΔT	1,2795
TUB3-090/23D50	2093	1089	1,2795	50	14,0261	$\phi =$	14,0261	x	ΔT	1,2795
TUB3-090/24D50	2184	1136	1,2795	50	14,6359	$\phi =$	14,6359	x	ΔT	1,2795
TUB3-090/25D50	2275	1183	1,2795	50	15,2458	$\phi =$	15,2458	x	ΔT	1,2795
TUB3-090/26D50	2366	1231	1,2795	50	15,8556	$\phi =$	15,8556	x	ΔT	1,2795
TUB3-090/27D50	2457	1278	1,2795	50	16,4654	$\phi =$	16,4654	x	ΔT	1,2795
TUB3-090/28D50	2548	1325	1,2795	50	17,0753	$\phi =$	17,0753	x	ΔT	1,2795
TUB3-090/29D50	2639	1373	1,2795	50	17,6851	$\phi =$	17,6851	x	ΔT	1,2795
TUB3-090/30D50	2730	1420	1,2795	50	18,2949	$\phi =$	18,2949	x	ΔT	1,2795
TUB3-090/31D50	2821	1467	1,2795	50	18,9048	$\phi =$	18,9048	x	ΔT	1,2795
TUB3-090/32D50	2912	1515	1,2795	50	19,5146	$\phi =$	19,5146	x	ΔT	1,2795
TUB3-090/33D50	3003	1562	1,2795	50	20,1244	$\phi =$	20,1244	x	ΔT	1,2795
TUB3-090/34D50	3094	1609	1,2795	50	20,7342	$\phi =$	20,7342	x	ΔT	1,2795
TUB3-100/02D50	201	105	1,2811	50	1,3412	$\phi =$	1,3412	x	ΔT	1,2811
TUB3-100/03D50	302	157	1,2811	50	2,0119	$\phi =$	2,0119	x	ΔT	1,2811
TUB3-100/04D50	403	209	1,2811	50	2,6825	$\phi =$	2,6825	x	ΔT	1,2811
TUB3-100/05D50	504	262	1,2811	50	3,3531	$\phi =$	3,3531	x	ΔT	1,2811
TUB3-100/06D50	604	314	1,2811	50	4,0237	$\phi =$	4,0237	x	ΔT	1,2811
TUB3-100/07D50	705	366	1,2811	50	4,6944	$\phi =$	4,6944	x	ΔT	1,2811
TUB3-100/08D50	806	419	1,2811	50	5,3650	$\phi =$	5,3650	x	ΔT	1,2811
TUB3-100/09D50	906	471	1,2811	50	6,0356	$\phi =$	6,0356	x	ΔT	1,2811
TUB3-100/10D50	1007	523	1,2811	50	6,7062	$\phi =$	6,7062	x	ΔT	1,2811
TUB3-100/11D50	1108	576	1,2811	50	7,3769	$\phi =$	7,3769	x	ΔT	1,2811
TUB3-100/12D50	1208	628	1,2811	50	8,0475	$\phi =$	8,0475	x	ΔT	1,2811
TUB3-100/13D50	1309	680	1,2811	50	8,7181	$\phi =$	8,7181	x	ΔT	1,2811
TUB3-100/14D50	1410	733	1,2811	50	9,3887	$\phi =$	9,3887	x	ΔT	1,2811
TUB3-100/15D50	1511	785	1,2811	50	10,0594	$\phi =$	10,0594	x	ΔT	1,2811
TUB3-100/16D50	1611	837	1,2811	50	10,7300	$\phi =$	10,7300	x	ΔT	1,2811
TUB3-100/17D50	1712	890	1,2811	50	11,4006	$\phi =$	11,4006	x	ΔT	1,2811
TUB3-100/18D50	1813	942	1,2811	50	12,0712	$\phi =$	12,0712	x	ΔT	1,2811
TUB3-100/19D50	1913	994	1,2811	50	12,7419	$\phi =$	12,7419	x	ΔT	1,2811
TUB3-100/20D50	2014	1047	1,2811	50	13,4125	$\phi =$	13,4125	x	ΔT	1,2811
TUB3-100/21D50	2115	1099	1,2811	50	14,0831	$\phi =$	14,0831	x	ΔT	1,2811
TUB3-100/22D50	2215	1151	1,2811	50	14,7537	$\phi =$	14,7537	x	ΔT	1,2811
TUB3-100/23D50	2316	1204	1,2811	50	15,4243	$\phi =$	15,4243	x	ΔT	1,2811
TUB3-100/24D50	2417	1256	1,2811	50	16,0950	$\phi =$	16,0950	x	ΔT	1,2811
TUB3-100/25D50	2518	1308	1,2811	50	16,7656	$\phi =$	16,7656	x	ΔT	1,2811
TUB3-100/26D50	2618	1361	1,2811	50	17,4362	$\phi =$	17,4362	x	ΔT	1,2811
TUB3-100/27D50	2719	1413	1,2811	50	18,1068	$\phi =$	18,1068	x	ΔT	1,2811
TUB3-100/28D50	2820	1465	1,2811	50	18,7775	$\phi =$	18,7775	x	ΔT	1,2811
TUB3-100/29D50	2920	1518	1,2811	50	19,4481	$\phi =$	19,4481	x	ΔT	1,2811
TUB3-100/30D50	3021	1570	1,2811	50	20,1187	$\phi =$	20,1187	x	ΔT	1,2811
TUB3-100/31D50	3122	1622	1,2811	50	20,7893	$\phi =$	20,7893	x	ΔT	1,2811
TUB3-120/02D50	240	124	1,2828	50	1,5851	$\phi =$	1,5851	x	ΔT	1,2828
TUB3-120/03D50	359	187	1,2828	50	2,3776	$\phi =$	2,3776	x	ΔT	1,2828

TUB3-120/04D50	479	249	1,2828	50	3,1701	$\phi =$	3,1701	x	ΔT	1,2828
TUB3-120/05D50	599	311	1,2828	50	3,9627	$\phi =$	3,9627	x	ΔT	1,2828
TUB3-120/06D50	719	373	1,2828	50	4,7552	$\phi =$	4,7552	x	ΔT	1,2828
TUB3-120/07D50	839	435	1,2828	50	5,5477	$\phi =$	5,5477	x	ΔT	1,2828
TUB3-120/08D50	958	498	1,2828	50	6,3403	$\phi =$	6,3403	x	ΔT	1,2828
TUB3-120/09D50	1078	560	1,2828	50	7,1328	$\phi =$	7,1328	x	ΔT	1,2828
TUB3-120/10D50	1198	622	1,2828	50	7,9253	$\phi =$	7,9253	x	ΔT	1,2828
TUB3-120/11D50	1318	684	1,2828	50	8,7179	$\phi =$	8,7179	x	ΔT	1,2828
TUB3-120/12D50	1438	747	1,2828	50	9,5104	$\phi =$	9,5104	x	ΔT	1,2828
TUB3-120/13D50	1557	809	1,2828	50	10,3029	$\phi =$	10,3029	x	ΔT	1,2828
TUB3-120/14D50	1677	871	1,2828	50	11,0955	$\phi =$	11,0955	x	ΔT	1,2828
TUB3-120/15D50	1797	933	1,2828	50	11,8880	$\phi =$	11,8880	x	ΔT	1,2828
TUB3-120/16D50	1917	995	1,2828	50	12,6805	$\phi =$	12,6805	x	ΔT	1,2828
TUB3-120/17D50	2037	1058	1,2828	50	13,4731	$\phi =$	13,4731	x	ΔT	1,2828
TUB3-120/18D50	2156	1120	1,2828	50	14,2656	$\phi =$	14,2656	x	ΔT	1,2828
TUB3-120/19D50	2276	1182	1,2828	50	15,0582	$\phi =$	15,0582	x	ΔT	1,2828
TUB3-120/20D50	2396	1244	1,2828	50	15,8507	$\phi =$	15,8507	x	ΔT	1,2828
TUB3-120/21D50	2516	1306	1,2828	50	16,6432	$\phi =$	16,6432	x	ΔT	1,2828
TUB3-120/22D50	2636	1369	1,2828	50	17,4358	$\phi =$	17,4358	x	ΔT	1,2828
TUB3-120/23D50	2755	1431	1,2828	50	18,2283	$\phi =$	18,2283	x	ΔT	1,2828
TUB3-120/24D50	2875	1493	1,2828	50	19,0208	$\phi =$	19,0208	x	ΔT	1,2828
TUB3-120/25D50	2995	1555	1,2828	50	19,8134	$\phi =$	19,8134	x	ΔT	1,2828
TUB3-120/26D50	3115	1617	1,2828	50	20,6059	$\phi =$	20,6059	x	ΔT	1,2828
TUB3-150/02D50	297	154	1,2854	50	1,9449	$\phi =$	1,9449	x	ΔT	1,2854
TUB3-150/03D50	446	231	1,2854	50	2,9174	$\phi =$	2,9174	x	ΔT	1,2854
TUB3-150/04D50	594	308	1,2854	50	3,8898	$\phi =$	3,8898	x	ΔT	1,2854
TUB3-150/05D50	743	385	1,2854	50	4,8623	$\phi =$	4,8623	x	ΔT	1,2854
TUB3-150/06D50	891	462	1,2854	50	5,8347	$\phi =$	5,8347	x	ΔT	1,2854
TUB3-150/07D50	1040	539	1,2854	50	6,8072	$\phi =$	6,8072	x	ΔT	1,2854
TUB3-150/08D50	1188	616	1,2854	50	7,7797	$\phi =$	7,7797	x	ΔT	1,2854
TUB3-150/09D50	1337	693	1,2854	50	8,7521	$\phi =$	8,7521	x	ΔT	1,2854
TUB3-150/10D50	1485	770	1,2854	50	9,7246	$\phi =$	9,7246	x	ΔT	1,2854
TUB3-150/11D50	1634	847	1,2854	50	10,6970	$\phi =$	10,6970	x	ΔT	1,2854
TUB3-150/12D50	1782	924	1,2854	50	11,6695	$\phi =$	11,6695	x	ΔT	1,2854
TUB3-150/13D50	1931	1001	1,2854	50	12,6419	$\phi =$	12,6419	x	ΔT	1,2854
TUB3-150/14D50	2079	1078	1,2854	50	13,6144	$\phi =$	13,6144	x	ΔT	1,2854
TUB3-150/15D50	2228	1155	1,2854	50	14,5869	$\phi =$	14,5869	x	ΔT	1,2854
TUB3-150/16D50	2376	1232	1,2854	50	15,5593	$\phi =$	15,5593	x	ΔT	1,2854
TUB3-150/17D50	2525	1309	1,2854	50	16,5318	$\phi =$	16,5318	x	ΔT	1,2854
TUB3-150/18D50	2673	1386	1,2854	50	17,5042	$\phi =$	17,5042	x	ΔT	1,2854
TUB3-150/19D50	2822	1463	1,2854	50	18,4767	$\phi =$	18,4767	x	ΔT	1,2854
TUB3-150/20D50	2970	1540	1,2854	50	19,4491	$\phi =$	19,4491	x	ΔT	1,2854
TUB3-150/21D50	3119	1617	1,2854	50	20,4216	$\phi =$	20,4216	x	ΔT	1,2854
TUB3-150/22D50	3267	1694	1,2854	50	21,3941	$\phi =$	21,3941	x	ΔT	1,2854
TUB3-180/02D50	354	184	1,2876	50	2,3009	$\phi =$	2,3009	x	ΔT	1,2876
TUB3-180/03D50	532	275	1,2876	50	3,4514	$\phi =$	3,4514	x	ΔT	1,2876
TUB3-180/04D50	709	367	1,2876	50	4,6018	$\phi =$	4,6018	x	ΔT	1,2876

TUB3-180/05D50	886	459	1,2876	50	5,7523	$\phi =$	5,7523	x	ΔT	1,2876
TUB3-180/06D50	1063	551	1,2876	50	6,9027	$\phi =$	6,9027	x	ΔT	1,2876
TUB3-180/07D50	1240	643	1,2876	50	8,0532	$\phi =$	8,0532	x	ΔT	1,2876
TUB3-180/08D50	1418	734	1,2876	50	9,2036	$\phi =$	9,2036	x	ΔT	1,2876
TUB3-180/09D50	1595	826	1,2876	50	10,3541	$\phi =$	10,3541	x	ΔT	1,2876
TUB3-180/10D50	1772	918	1,2876	50	11,5046	$\phi =$	11,5046	x	ΔT	1,2876
TUB3-180/11D50	1949	1010	1,2876	50	12,6550	$\phi =$	12,6550	x	ΔT	1,2876
TUB3-180/12D50	2126	1102	1,2876	50	13,8055	$\phi =$	13,8055	x	ΔT	1,2876
TUB3-180/13D50	2304	1193	1,2876	50	14,9559	$\phi =$	14,9559	x	ΔT	1,2876
TUB3-180/14D50	2481	1285	1,2876	50	16,1064	$\phi =$	16,1064	x	ΔT	1,2876
TUB3-180/15D50	2658	1377	1,2876	50	17,2568	$\phi =$	17,2568	x	ΔT	1,2876
TUB3-180/16D50	2835	1469	1,2876	50	18,4073	$\phi =$	18,4073	x	ΔT	1,2876
TUB3-180/17D50	3012	1560	1,2876	50	19,5577	$\phi =$	19,5577	x	ΔT	1,2876
TUB3-180/18D50	3190	1652	1,2876	50	20,7082	$\phi =$	20,7082	x	ΔT	1,2876
TUB3-180/19D50	3367	1744	1,2876	50	21,8587	$\phi =$	21,8587	x	ΔT	1,2876
TUB3-180/20D50	3544	1836	1,2876	50	23,0091	$\phi =$	23,0091	x	ΔT	1,2876
TUB3-180/21D50	3721	1928	1,2876	50	24,1596	$\phi =$	24,1596	x	ΔT	1,2876
TUB3-180/22D50	3898	2019	1,2876	50	25,3100	$\phi =$	25,3100	x	ΔT	1,2876
TUB3-180/23D50	4076	2111	1,2876	50	26,4605	$\phi =$	26,4605	x	ΔT	1,2876
TUB3-200/02D50	392	203	1,2889	50	2,5347	$\phi =$	2,5347	x	ΔT	1,2889
TUB3-200/03D50	589	305	1,2889	50	3,8020	$\phi =$	3,8020	x	ΔT	1,2889
TUB3-200/04D50	785	406	1,2889	50	5,0694	$\phi =$	5,0694	x	ΔT	1,2889
TUB3-200/05D50	981	508	1,2889	50	6,3367	$\phi =$	6,3367	x	ΔT	1,2889
TUB3-200/06D50	1177	609	1,2889	50	7,6041	$\phi =$	7,6041	x	ΔT	1,2889
TUB3-200/07D50	1373	711	1,2889	50	8,8714	$\phi =$	8,8714	x	ΔT	1,2889
TUB3-200/08D50	1570	813	1,2889	50	10,1388	$\phi =$	10,1388	x	ΔT	1,2889
TUB3-200/09D50	1766	914	1,2889	50	11,4061	$\phi =$	11,4061	x	ΔT	1,2889
TUB3-200/10D50	1962	1016	1,2889	50	12,6735	$\phi =$	12,6735	x	ΔT	1,2889
TUB3-200/11D50	2158	1117	1,2889	50	13,9408	$\phi =$	13,9408	x	ΔT	1,2889
TUB3-200/12D50	2354	1219	1,2889	50	15,2082	$\phi =$	15,2082	x	ΔT	1,2889
TUB3-200/13D50	2551	1320	1,2889	50	16,4755	$\phi =$	16,4755	x	ΔT	1,2889
TUB3-200/14D50	2747	1422	1,2889	50	17,7429	$\phi =$	17,7429	x	ΔT	1,2889
TUB3-200/15D50	2943	1524	1,2889	50	19,0102	$\phi =$	19,0102	x	ΔT	1,2889
TUB3-200/16D50	3139	1625	1,2889	50	20,2776	$\phi =$	20,2776	x	ΔT	1,2889
TUB3-200/17D50	3335	1727	1,2889	50	21,5449	$\phi =$	21,5449	x	ΔT	1,2889
TUB3-200/18D50	3532	1828	1,2889	50	22,8123	$\phi =$	22,8123	x	ΔT	1,2889
TUB3-200/19D50	3728	1930	1,2889	50	24,0796	$\phi =$	24,0796	x	ΔT	1,2889
TUB3-200/20D50	3924	2031	1,2889	50	25,3470	$\phi =$	25,3470	x	ΔT	1,2889
TUB3-200/21D50	4120	2133	1,2889	50	26,6143	$\phi =$	26,6143	x	ΔT	1,2889

W imieniu producenta podpisał:
(Signed for and on behalf of the manufacturer by:)

Z-ca Prezesa ds. Produkcji
Bartosz Ścierzyński
Nowa Wieś 25.03.2022 r.

Zastępca Prezesa*
ds. realizacji

Bartosz Ścierzyński
Bartosz Ścierzyński

(podpis)
(signature)

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