

DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH
(DECLARATION OF PERFORMANCE)
Nr (No.) NDWU/1/TUBUS 4/2021

1. Niepowtarzalny kod identyfikacyjny typu wyrobu: (Unique identification code of the product-type:) TUBUS 4																								
2. Zamierzone zastosowanie lub zastosowania: W instalacjach grzewczych w budynkach (Intended use/es: In heating systems in buildings)																								
3. Producent: (Manufacturer:) INSTAL-PROJEKT Gawłowski, Ścierzyńscy Spółka jawna, Nowa Wieś k/ Włocławka, ul. Jana Pawła II 12A, 87-853 Kruszyn, Polska. (INSTAL-PROJEKT Gawłowski, 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" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%; text-align: center;">Zasadnicze charakterystyki Essential characteristics</th> <th style="width: 33%; text-align: center;">Właściwości użytkowe Performance</th> <th style="width: 33%; text-align: center;">Zharmonizowana specyfikacja techniczna Harmonised technical specification</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;">Reakcja na ogień (Reaction to fire)</td> <td style="text-align: center;">A1</td> <td rowspan="10" style="text-align: center; vertical-align: middle;">PN-EN 442-1:2015 EN 442-1:2014</td> </tr> <tr> <td style="padding: 2px;">Uwalnianie substancji niebezpiecznych (Release of dangerous substances)</td> <td style="text-align: center;">Nie ma (None)</td> </tr> <tr> <td style="padding: 2px;">Szczelność pod działaniem ciśnienia (Pressure tightness)</td> <td style="padding: 2px;">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 style="padding: 2px;">Temperatura powierzchni (Surface temperature)</td> <td style="text-align: center;">Maksymalnie 95 °C (Maximum 95 °C)</td> </tr> <tr> <td style="padding: 2px;">Odporność na działanie ciśnienia (Resistance to pressure)</td> <td style="padding: 2px;">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 style="padding: 2px;">Nominalna moc cieplna (Φ 50 , Φ 30) (Rated thermal output) (Φ 50 , Φ 30)</td> <td style="text-align: center;">Patrz Tabela nr.1 (See Table No.1)</td> </tr> <tr> <td style="padding: 2px;">Moc cieplna w różnych warunkach eksploatacyjnych (charakterystyka) (Thermal output in different operating conditions (characteristic curve))</td> <td style="text-align: center;">Patrz Tabela nr.1 (See Table No.1)</td> </tr> <tr> <td style="padding: 2px;">Odporność na korozję (Resistance against corrosion)</td> <td style="padding: 2px;">Brak korozji po 100 h w wilgoci (No corrosion after 100 h humidity)</td> </tr> <tr> <td style="padding: 2px;">Odporność na słabe uderzenia (Resistance against minor impact)</td> <td style="text-align: center;">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																						
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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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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)				
TUB4-030/02	90	47	1,2720	50	0,6211	$\phi =$	0,6211	x	ΔT	1,2720
TUB4-030/03	135	70	1,2720	50	0,9316	$\phi =$	0,9316	x	ΔT	1,2720
TUB4-030/04	180	94	1,2720	50	1,2422	$\phi =$	1,2422	x	ΔT	1,2720
TUB4-030/05	225	117	1,2720	50	1,5527	$\phi =$	1,5527	x	ΔT	1,2720
TUB4-030/06	270	141	1,2720	50	1,8633	$\phi =$	1,8633	x	ΔT	1,2720
TUB4-030/07	315	164	1,2720	50	2,1738	$\phi =$	2,1738	x	ΔT	1,2720
TUB4-030/08	360	188	1,2720	50	2,4843	$\phi =$	2,4843	x	ΔT	1,2720
TUB4-030/09	405	211	1,2720	50	2,7949	$\phi =$	2,7949	x	ΔT	1,2720
TUB4-030/10	450	235	1,2720	50	3,1054	$\phi =$	3,1054	x	ΔT	1,2720
TUB4-030/11	495	258	1,2720	50	3,4160	$\phi =$	3,4160	x	ΔT	1,2720
TUB4-030/12	540	282	1,2720	50	3,7265	$\phi =$	3,7265	x	ΔT	1,2720
TUB4-030/13	585	305	1,2720	50	4,0371	$\phi =$	4,0371	x	ΔT	1,2720
TUB4-030/14	630	329	1,2720	50	4,3476	$\phi =$	4,3476	x	ΔT	1,2720
TUB4-030/15	675	352	1,2720	50	4,6582	$\phi =$	4,6582	x	ΔT	1,2720
TUB4-030/16	720	376	1,2720	50	4,9687	$\phi =$	4,9687	x	ΔT	1,2720
TUB4-030/17	765	399	1,2720	50	5,2792	$\phi =$	5,2792	x	ΔT	1,2720
TUB4-030/18	810	423	1,2720	50	5,5898	$\phi =$	5,5898	x	ΔT	1,2720
TUB4-030/19	855	446	1,2720	50	5,9003	$\phi =$	5,9003	x	ΔT	1,2720
TUB4-030/20	900	470	1,2720	50	6,2109	$\phi =$	6,2109	x	ΔT	1,2720
TUB4-030/21	945	493	1,2720	50	6,5214	$\phi =$	6,5214	x	ΔT	1,2720
TUB4-030/22	990	517	1,2720	50	6,8320	$\phi =$	6,8320	x	ΔT	1,2720
TUB4-030/23	1035	540	1,2720	50	7,1425	$\phi =$	7,1425	x	ΔT	1,2720
TUB4-030/24	1080	564	1,2720	50	7,4530	$\phi =$	7,4530	x	ΔT	1,2720
TUB4-030/25	1125	587	1,2720	50	7,7636	$\phi =$	7,7636	x	ΔT	1,2720
TUB4-030/26	1170	611	1,2720	50	8,0741	$\phi =$	8,0741	x	ΔT	1,2720
TUB4-030/27	1215	634	1,2720	50	8,3847	$\phi =$	8,3847	x	ΔT	1,2720
TUB4-030/28	1260	658	1,2720	50	8,6952	$\phi =$	8,6952	x	ΔT	1,2720
TUB4-030/29	1305	681	1,2720	50	9,0058	$\phi =$	9,0058	x	ΔT	1,2720
TUB4-030/30	1350	705	1,2720	50	9,3163	$\phi =$	9,3163	x	ΔT	1,2720
TUB4-030/31	1395	728	1,2720	50	9,6269	$\phi =$	9,6269	x	ΔT	1,2720
TUB4-030/32	1440	752	1,2720	50	9,9374	$\phi =$	9,9374	x	ΔT	1,2720
TUB4-030/33	1485	775	1,2720	50	10,2479	$\phi =$	10,2479	x	ΔT	1,2720
TUB4-030/34	1530	799	1,2720	50	10,5585	$\phi =$	10,5585	x	ΔT	1,2720
TUB4-030/35	1575	822	1,2720	50	10,8690	$\phi =$	10,8690	x	ΔT	1,2720
TUB4-030/36	1620	846	1,2720	50	11,1796	$\phi =$	11,1796	x	ΔT	1,2720
TUB4-030/37	1665	869	1,2720	50	11,4901	$\phi =$	11,4901	x	ΔT	1,2720

TUB4-030/38	1710	893	1,2720	50	11,8007	$\phi =$	11,8007	x	ΔT	1,2720
TUB4-030/39	1755	916	1,2720	50	12,1112	$\phi =$	12,1112	x	ΔT	1,2720
TUB4-030/40	1800	940	1,2720	50	12,4217	$\phi =$	12,4217	x	ΔT	1,2720
TUB4-030/41	1845	963	1,2720	50	12,7323	$\phi =$	12,7323	x	ΔT	1,2720
TUB4-030/42	1890	987	1,2720	50	13,0428	$\phi =$	13,0428	x	ΔT	1,2720
TUB4-030/43	1935	1010	1,2720	50	13,3534	$\phi =$	13,3534	x	ΔT	1,2720
TUB4-030/44	1980	1034	1,2720	50	13,6639	$\phi =$	13,6639	x	ΔT	1,2720
TUB4-030/45	2025	1057	1,2720	50	13,9745	$\phi =$	13,9745	x	ΔT	1,2720
TUB4-040/02	126	66	1,2779	50	0,8510	$\phi =$	0,8510	x	ΔT	1,2779
TUB4-040/03	189	99	1,2779	50	1,2765	$\phi =$	1,2765	x	ΔT	1,2779
TUB4-040/04	252	131	1,2779	50	1,7021	$\phi =$	1,7021	x	ΔT	1,2779
TUB4-040/05	316	164	1,2779	50	2,1276	$\phi =$	2,1276	x	ΔT	1,2779
TUB4-040/06	379	197	1,2779	50	2,5531	$\phi =$	2,5531	x	ΔT	1,2779
TUB4-040/07	442	230	1,2779	50	2,9786	$\phi =$	2,9786	x	ΔT	1,2779
TUB4-040/08	505	263	1,2779	50	3,4041	$\phi =$	3,4041	x	ΔT	1,2779
TUB4-040/09	568	296	1,2779	50	3,8296	$\phi =$	3,8296	x	ΔT	1,2779
TUB4-040/10	631	328	1,2779	50	4,2552	$\phi =$	4,2552	x	ΔT	1,2779
TUB4-040/11	694	361	1,2779	50	4,6807	$\phi =$	4,6807	x	ΔT	1,2779
TUB4-040/12	757	394	1,2779	50	5,1062	$\phi =$	5,1062	x	ΔT	1,2779
TUB4-040/13	820	427	1,2779	50	5,5317	$\phi =$	5,5317	x	ΔT	1,2779
TUB4-040/14	883	460	1,2779	50	5,9572	$\phi =$	5,9572	x	ΔT	1,2779
TUB4-040/15	947	493	1,2779	50	6,3827	$\phi =$	6,3827	x	ΔT	1,2779
TUB4-040/16	1010	526	1,2779	50	6,8083	$\phi =$	6,8083	x	ΔT	1,2779
TUB4-040/17	1073	558	1,2779	50	7,2338	$\phi =$	7,2338	x	ΔT	1,2779
TUB4-040/18	1136	591	1,2779	50	7,6593	$\phi =$	7,6593	x	ΔT	1,2779
TUB4-040/19	1199	624	1,2779	50	8,0848	$\phi =$	8,0848	x	ΔT	1,2779
TUB4-040/20	1262	657	1,2779	50	8,5103	$\phi =$	8,5103	x	ΔT	1,2779
TUB4-040/21	1325	690	1,2779	50	8,9358	$\phi =$	8,9358	x	ΔT	1,2779
TUB4-040/22	1388	723	1,2779	50	9,3613	$\phi =$	9,3613	x	ΔT	1,2779
TUB4-040/23	1451	756	1,2779	50	9,7869	$\phi =$	9,7869	x	ΔT	1,2779
TUB4-040/24	1514	788	1,2779	50	10,2124	$\phi =$	10,2124	x	ΔT	1,2779
TUB4-040/25	1578	821	1,2779	50	10,6379	$\phi =$	10,6379	x	ΔT	1,2779
TUB4-040/26	1641	854	1,2779	50	11,0634	$\phi =$	11,0634	x	ΔT	1,2779
TUB4-040/27	1704	887	1,2779	50	11,4889	$\phi =$	11,4889	x	ΔT	1,2779
TUB4-040/28	1767	920	1,2779	50	11,9144	$\phi =$	11,9144	x	ΔT	1,2779
TUB4-040/29	1830	953	1,2779	50	12,3400	$\phi =$	12,3400	x	ΔT	1,2779
TUB4-040/30	1893	985	1,2779	50	12,7655	$\phi =$	12,7655	x	ΔT	1,2779
TUB4-040/31	1956	1018	1,2779	50	13,1910	$\phi =$	13,1910	x	ΔT	1,2779
TUB4-040/32	2019	1051	1,2779	50	13,6165	$\phi =$	13,6165	x	ΔT	1,2779
TUB4-040/33	2082	1084	1,2779	50	14,0420	$\phi =$	14,0420	x	ΔT	1,2779
TUB4-040/34	2145	1117	1,2779	50	14,4675	$\phi =$	14,4675	x	ΔT	1,2779
TUB4-040/35	2209	1150	1,2779	50	14,8930	$\phi =$	14,8930	x	ΔT	1,2779
TUB4-040/36	2272	1183	1,2779	50	15,3186	$\phi =$	15,3186	x	ΔT	1,2779
TUB4-040/37	2335	1215	1,2779	50	15,7441	$\phi =$	15,7441	x	ΔT	1,2779
TUB4-040/38	2398	1248	1,2779	50	16,1696	$\phi =$	16,1696	x	ΔT	1,2779
TUB4-040/39	2461	1281	1,2779	50	16,5951	$\phi =$	16,5951	x	ΔT	1,2779

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TUB4-040/40	2524	1314	1,2779	50	17,0206	$\phi =$	17,0206	x	ΔT	1,2779
TUB4-040/41	2587	1347	1,2779	50	17,4461	$\phi =$	17,4461	x	ΔT	1,2779
TUB4-040/42	2650	1380	1,2779	50	17,8717	$\phi =$	17,8717	x	ΔT	1,2779
TUB4-040/43	2713	1413	1,2779	50	18,2972	$\phi =$	18,2972	x	ΔT	1,2779
TUB4-040/44	2776	1445	1,2779	50	18,7227	$\phi =$	18,7227	x	ΔT	1,2779
TUB4-040/45	2840	1478	1,2779	50	19,1482	$\phi =$	19,1482	x	ΔT	1,2779
TUB4-050/02	160	83	1,2824	50	1,0575	$\phi =$	1,0575	x	ΔT	1,2824
TUB4-050/03	239	124	1,2824	50	1,5862	$\phi =$	1,5862	x	ΔT	1,2824
TUB4-050/04	319	166	1,2824	50	2,1150	$\phi =$	2,1150	x	ΔT	1,2824
TUB4-050/05	399	207	1,2824	50	2,6437	$\phi =$	2,6437	x	ΔT	1,2824
TUB4-050/06	479	249	1,2824	50	3,1725	$\phi =$	3,1725	x	ΔT	1,2824
TUB4-050/07	559	290	1,2824	50	3,7012	$\phi =$	3,7012	x	ΔT	1,2824
TUB4-050/08	638	332	1,2824	50	4,2299	$\phi =$	4,2299	x	ΔT	1,2824
TUB4-050/09	718	373	1,2824	50	4,7587	$\phi =$	4,7587	x	ΔT	1,2824
TUB4-050/10	798	414	1,2824	50	5,2874	$\phi =$	5,2874	x	ΔT	1,2824
TUB4-050/11	878	456	1,2824	50	5,8162	$\phi =$	5,8162	x	ΔT	1,2824
TUB4-050/12	958	497	1,2824	50	6,3449	$\phi =$	6,3449	x	ΔT	1,2824
TUB4-050/13	1037	539	1,2824	50	6,8736	$\phi =$	6,8736	x	ΔT	1,2824
TUB4-050/14	1117	580	1,2824	50	7,4024	$\phi =$	7,4024	x	ΔT	1,2824
TUB4-050/15	1197	622	1,2824	50	7,9311	$\phi =$	7,9311	x	ΔT	1,2824
TUB4-050/16	1277	663	1,2824	50	8,4599	$\phi =$	8,4599	x	ΔT	1,2824
TUB4-050/17	1357	705	1,2824	50	8,9886	$\phi =$	8,9886	x	ΔT	1,2824
TUB4-050/18	1436	746	1,2824	50	9,5174	$\phi =$	9,5174	x	ΔT	1,2824
TUB4-050/19	1516	788	1,2824	50	10,0461	$\phi =$	10,0461	x	ΔT	1,2824
TUB4-050/20	1596	829	1,2824	50	10,5748	$\phi =$	10,5748	x	ΔT	1,2824
TUB4-050/21	1676	870	1,2824	50	11,1036	$\phi =$	11,1036	x	ΔT	1,2824
TUB4-050/22	1756	912	1,2824	50	11,6323	$\phi =$	11,6323	x	ΔT	1,2824
TUB4-050/23	1835	953	1,2824	50	12,1611	$\phi =$	12,1611	x	ΔT	1,2824
TUB4-050/24	1915	995	1,2824	50	12,6898	$\phi =$	12,6898	x	ΔT	1,2824
TUB4-050/25	1995	1036	1,2824	50	13,2185	$\phi =$	13,2185	x	ΔT	1,2824
TUB4-050/26	2075	1078	1,2824	50	13,7473	$\phi =$	13,7473	x	ΔT	1,2824
TUB4-050/27	2155	1119	1,2824	50	14,2760	$\phi =$	14,2760	x	ΔT	1,2824
TUB4-050/28	2234	1161	1,2824	50	14,8048	$\phi =$	14,8048	x	ΔT	1,2824
TUB4-050/29	2314	1202	1,2824	50	15,3335	$\phi =$	15,3335	x	ΔT	1,2824
TUB4-050/30	2394	1243	1,2824	50	15,8623	$\phi =$	15,8623	x	ΔT	1,2824
TUB4-050/31	2474	1285	1,2824	50	16,3910	$\phi =$	16,3910	x	ΔT	1,2824
TUB4-050/32	2554	1326	1,2824	50	16,9197	$\phi =$	16,9197	x	ΔT	1,2824
TUB4-050/33	2633	1368	1,2824	50	17,4485	$\phi =$	17,4485	x	ΔT	1,2824
TUB4-050/34	2713	1409	1,2824	50	17,9772	$\phi =$	17,9772	x	ΔT	1,2824
TUB4-050/35	2793	1451	1,2824	50	18,5060	$\phi =$	18,5060	x	ΔT	1,2824
TUB4-050/36	2873	1492	1,2824	50	19,0347	$\phi =$	19,0347	x	ΔT	1,2824
TUB4-050/37	2953	1534	1,2824	50	19,5635	$\phi =$	19,5635	x	ΔT	1,2824
TUB4-050/38	3032	1575	1,2824	50	20,0922	$\phi =$	20,0922	x	ΔT	1,2824
TUB4-050/39	3112	1616	1,2824	50	20,6209	$\phi =$	20,6209	x	ΔT	1,2824
TUB4-050/40	3192	1658	1,2824	50	21,1497	$\phi =$	21,1497	x	ΔT	1,2824
TUB4-050/41	3272	1699	1,2824	50	21,6784	$\phi =$	21,6784	x	ΔT	1,2824

TUB4-050/42	3352	1741	1,2824	50	22,2072	$\phi =$	22,2072	x	ΔT	1,2824
TUB4-050/43	3431	1782	1,2824	50	22,7359	$\phi =$	22,7359	x	ΔT	1,2824
TUB4-050/44	3511	1824	1,2824	50	23,2646	$\phi =$	23,2646	x	ΔT	1,2824
TUB4-050/45	3591	1865	1,2824	50	23,7934	$\phi =$	23,7934	x	ΔT	1,2824
TUB4-070/02	215	111	1,2893	50	1,3866	$\phi =$	1,3866	x	ΔT	1,2893
TUB4-070/03	323	167	1,2893	50	2,0799	$\phi =$	2,0799	x	ΔT	1,2893
TUB4-070/04	430	223	1,2893	50	2,7732	$\phi =$	2,7732	x	ΔT	1,2893
TUB4-070/05	538	278	1,2893	50	3,4665	$\phi =$	3,4665	x	ΔT	1,2893
TUB4-070/06	645	334	1,2893	50	4,1599	$\phi =$	4,1599	x	ΔT	1,2893
TUB4-070/07	753	389	1,2893	50	4,8532	$\phi =$	4,8532	x	ΔT	1,2893
TUB4-070/08	860	445	1,2893	50	5,5465	$\phi =$	5,5465	x	ΔT	1,2893
TUB4-070/09	968	501	1,2893	50	6,2398	$\phi =$	6,2398	x	ΔT	1,2893
TUB4-070/10	1075	556	1,2893	50	6,9331	$\phi =$	6,9331	x	ΔT	1,2893
TUB4-070/11	1183	612	1,2893	50	7,6264	$\phi =$	7,6264	x	ΔT	1,2893
TUB4-070/12	1290	668	1,2893	50	8,3197	$\phi =$	8,3197	x	ΔT	1,2893
TUB4-070/13	1398	723	1,2893	50	9,0130	$\phi =$	9,0130	x	ΔT	1,2893
TUB4-070/14	1505	779	1,2893	50	9,7063	$\phi =$	9,7063	x	ΔT	1,2893
TUB4-070/15	1613	835	1,2893	50	10,3996	$\phi =$	10,3996	x	ΔT	1,2893
TUB4-070/16	1720	890	1,2893	50	11,0929	$\phi =$	11,0929	x	ΔT	1,2893
TUB4-070/17	1828	946	1,2893	50	11,7862	$\phi =$	11,7862	x	ΔT	1,2893
TUB4-070/18	1935	1002	1,2893	50	12,4796	$\phi =$	12,4796	x	ΔT	1,2893
TUB4-070/19	2043	1057	1,2893	50	13,1729	$\phi =$	13,1729	x	ΔT	1,2893
TUB4-070/20	2150	1113	1,2893	50	13,8662	$\phi =$	13,8662	x	ΔT	1,2893
TUB4-070/21	2258	1168	1,2893	50	14,5595	$\phi =$	14,5595	x	ΔT	1,2893
TUB4-070/22	2365	1224	1,2893	50	15,2528	$\phi =$	15,2528	x	ΔT	1,2893
TUB4-070/23	2473	1280	1,2893	50	15,9461	$\phi =$	15,9461	x	ΔT	1,2893
TUB4-070/24	2580	1335	1,2893	50	16,6394	$\phi =$	16,6394	x	ΔT	1,2893
TUB4-070/25	2688	1391	1,2893	50	17,3327	$\phi =$	17,3327	x	ΔT	1,2893
TUB4-070/26	2795	1447	1,2893	50	18,0260	$\phi =$	18,0260	x	ΔT	1,2893
TUB4-070/27	2903	1502	1,2893	50	18,7193	$\phi =$	18,7193	x	ΔT	1,2893
TUB4-070/28	3010	1558	1,2893	50	19,4126	$\phi =$	19,4126	x	ΔT	1,2893
TUB4-070/29	3118	1614	1,2893	50	20,1059	$\phi =$	20,1059	x	ΔT	1,2893
TUB4-070/30	3225	1669	1,2893	50	20,7993	$\phi =$	20,7993	x	ΔT	1,2893
TUB4-070/31	3333	1725	1,2893	50	21,4926	$\phi =$	21,4926	x	ΔT	1,2893
TUB4-070/32	3440	1780	1,2893	50	22,1859	$\phi =$	22,1859	x	ΔT	1,2893
TUB4-070/33	3548	1836	1,2893	50	22,8792	$\phi =$	22,8792	x	ΔT	1,2893
TUB4-070/34	3655	1892	1,2893	50	23,5725	$\phi =$	23,5725	x	ΔT	1,2893
TUB4-070/35	3763	1947	1,2893	50	24,2658	$\phi =$	24,2658	x	ΔT	1,2893
TUB4-070/36	3870	2003	1,2893	50	24,9591	$\phi =$	24,9591	x	ΔT	1,2893
TUB4-070/37	3978	2059	1,2893	50	25,6524	$\phi =$	25,6524	x	ΔT	1,2893
TUB4-070/38	4085	2114	1,2893	50	26,3457	$\phi =$	26,3457	x	ΔT	1,2893
TUB4-070/39	4193	2170	1,2893	50	27,0390	$\phi =$	27,0390	x	ΔT	1,2893
TUB4-070/40	4300	2226	1,2893	50	27,7323	$\phi =$	27,7323	x	ΔT	1,2893
TUB4-070/41	4408	2281	1,2893	50	28,4256	$\phi =$	28,4256	x	ΔT	1,2893
TUB4-070/42	4515	2337	1,2893	50	29,1190	$\phi =$	29,1190	x	ΔT	1,2893
TUB4-080/02	236	122	1,2920	50	1,5086	$\phi =$	1,5086	x	ΔT	1,2920

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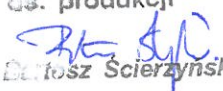
TUB4-080/03	355	183	1,2920	50	2,2629	$\phi =$	2,2629	x	ΔT	1,2920
TUB4-080/04	473	244	1,2920	50	3,0172	$\phi =$	3,0172	x	ΔT	1,2920
TUB4-080/05	591	305	1,2920	50	3,7715	$\phi =$	3,7715	x	ΔT	1,2920
TUB4-080/06	709	367	1,2920	50	4,5258	$\phi =$	4,5258	x	ΔT	1,2920
TUB4-080/07	827	428	1,2920	50	5,2802	$\phi =$	5,2802	x	ΔT	1,2920
TUB4-080/08	946	489	1,2920	50	6,0345	$\phi =$	6,0345	x	ΔT	1,2920
TUB4-080/09	1064	550	1,2920	50	6,7888	$\phi =$	6,7888	x	ΔT	1,2920
TUB4-080/10	1182	611	1,2920	50	7,5431	$\phi =$	7,5431	x	ΔT	1,2920
TUB4-080/11	1300	672	1,2920	50	8,2974	$\phi =$	8,2974	x	ΔT	1,2920
TUB4-080/12	1418	733	1,2920	50	9,0517	$\phi =$	9,0517	x	ΔT	1,2920
TUB4-080/13	1537	794	1,2920	50	9,8060	$\phi =$	9,8060	x	ΔT	1,2920
TUB4-080/14	1655	855	1,2920	50	10,5603	$\phi =$	10,5603	x	ΔT	1,2920
TUB4-080/15	1773	916	1,2920	50	11,3146	$\phi =$	11,3146	x	ΔT	1,2920
TUB4-080/16	1891	977	1,2920	50	12,0689	$\phi =$	12,0689	x	ΔT	1,2920
TUB4-080/17	2009	1039	1,2920	50	12,8232	$\phi =$	12,8232	x	ΔT	1,2920
TUB4-080/18	2128	1100	1,2920	50	13,5775	$\phi =$	13,5775	x	ΔT	1,2920
TUB4-080/19	2246	1161	1,2920	50	14,3318	$\phi =$	14,3318	x	ΔT	1,2920
TUB4-080/20	2364	1222	1,2920	50	15,0861	$\phi =$	15,0861	x	ΔT	1,2920
TUB4-080/21	2482	1283	1,2920	50	15,8405	$\phi =$	15,8405	x	ΔT	1,2920
TUB4-080/22	2600	1344	1,2920	50	16,5948	$\phi =$	16,5948	x	ΔT	1,2920
TUB4-080/23	2719	1405	1,2920	50	17,3491	$\phi =$	17,3491	x	ΔT	1,2920
TUB4-080/24	2837	1466	1,2920	50	18,1034	$\phi =$	18,1034	x	ΔT	1,2920
TUB4-080/25	2955	1527	1,2920	50	18,8577	$\phi =$	18,8577	x	ΔT	1,2920
TUB4-080/26	3073	1588	1,2920	50	19,6120	$\phi =$	19,6120	x	ΔT	1,2920
TUB4-080/27	3191	1650	1,2920	50	20,3663	$\phi =$	20,3663	x	ΔT	1,2920
TUB4-080/28	3310	1711	1,2920	50	21,1206	$\phi =$	21,1206	x	ΔT	1,2920
TUB4-080/29	3428	1772	1,2920	50	21,8749	$\phi =$	21,8749	x	ΔT	1,2920
TUB4-080/30	3546	1833	1,2920	50	22,6292	$\phi =$	22,6292	x	ΔT	1,2920
TUB4-080/31	3664	1894	1,2920	50	23,3835	$\phi =$	23,3835	x	ΔT	1,2920
TUB4-080/32	3782	1955	1,2920	50	24,1378	$\phi =$	24,1378	x	ΔT	1,2920
TUB4-080/33	3901	2016	1,2920	50	24,8921	$\phi =$	24,8921	x	ΔT	1,2920
TUB4-080/34	4019	2077	1,2920	50	25,6464	$\phi =$	25,6464	x	ΔT	1,2920
TUB4-080/35	4137	2138	1,2920	50	26,4008	$\phi =$	26,4008	x	ΔT	1,2920
TUB4-080/36	4255	2199	1,2920	50	27,1551	$\phi =$	27,1551	x	ΔT	1,2920
TUB4-080/37	4373	2260	1,2920	50	27,9094	$\phi =$	27,9094	x	ΔT	1,2920
TUB4-090/02	253	131	1,2944	50	1,6007	$\phi =$	1,6007	x	ΔT	1,2944
TUB4-090/03	380	196	1,2944	50	2,4011	$\phi =$	2,4011	x	ΔT	1,2944
TUB4-090/04	506	261	1,2944	50	3,2015	$\phi =$	3,2015	x	ΔT	1,2944
TUB4-090/05	633	327	1,2944	50	4,0018	$\phi =$	4,0018	x	ΔT	1,2944
TUB4-090/06	760	392	1,2944	50	4,8022	$\phi =$	4,8022	x	ΔT	1,2944
TUB4-090/07	886	457	1,2944	50	5,6025	$\phi =$	5,6025	x	ΔT	1,2944
TUB4-090/08	1013	523	1,2944	50	6,4029	$\phi =$	6,4029	x	ΔT	1,2944
TUB4-090/09	1139	588	1,2944	50	7,2033	$\phi =$	7,2033	x	ΔT	1,2944
TUB4-090/10	1266	654	1,2944	50	8,0036	$\phi =$	8,0036	x	ΔT	1,2944
TUB4-090/11	1393	719	1,2944	50	8,8040	$\phi =$	8,8040	x	ΔT	1,2944
TUB4-090/12	1519	784	1,2944	50	9,6044	$\phi =$	9,6044	x	ΔT	1,2944

TUB4-090/13	1646	850	1,2944	50	10,4047	$\phi =$	10,4047	x	ΔT	1,2944
TUB4-090/14	1772	915	1,2944	50	11,2051	$\phi =$	11,2051	x	ΔT	1,2944
TUB4-090/15	1899	980	1,2944	50	12,0054	$\phi =$	12,0054	x	ΔT	1,2944
TUB4-090/16	2026	1046	1,2944	50	12,8058	$\phi =$	12,8058	x	ΔT	1,2944
TUB4-090/17	2152	1111	1,2944	50	13,6062	$\phi =$	13,6062	x	ΔT	1,2944
TUB4-090/18	2279	1176	1,2944	50	14,4065	$\phi =$	14,4065	x	ΔT	1,2944
TUB4-090/19	2405	1242	1,2944	50	15,2069	$\phi =$	15,2069	x	ΔT	1,2944
TUB4-090/20	2532	1307	1,2944	50	16,0073	$\phi =$	16,0073	x	ΔT	1,2944
TUB4-090/21	2659	1372	1,2944	50	16,8076	$\phi =$	16,8076	x	ΔT	1,2944
TUB4-090/22	2785	1438	1,2944	50	17,6080	$\phi =$	17,6080	x	ΔT	1,2944
TUB4-090/23	2912	1503	1,2944	50	18,4083	$\phi =$	18,4083	x	ΔT	1,2944
TUB4-090/24	3038	1568	1,2944	50	19,2087	$\phi =$	19,2087	x	ΔT	1,2944
TUB4-090/25	3165	1634	1,2944	50	20,0091	$\phi =$	20,0091	x	ΔT	1,2944
TUB4-090/26	3292	1699	1,2944	50	20,8094	$\phi =$	20,8094	x	ΔT	1,2944
TUB4-090/27	3418	1765	1,2944	50	21,6098	$\phi =$	21,6098	x	ΔT	1,2944
TUB4-090/28	3545	1830	1,2944	50	22,4102	$\phi =$	22,4102	x	ΔT	1,2944
TUB4-090/29	3671	1895	1,2944	50	23,2105	$\phi =$	23,2105	x	ΔT	1,2944
TUB4-090/30	3798	1961	1,2944	50	24,0109	$\phi =$	24,0109	x	ΔT	1,2944
TUB4-090/31	3925	2026	1,2944	50	24,8112	$\phi =$	24,8112	x	ΔT	1,2944
TUB4-090/32	4051	2091	1,2944	50	25,6116	$\phi =$	25,6116	x	ΔT	1,2944
TUB4-090/33	4178	2157	1,2944	50	26,4120	$\phi =$	26,4120	x	ΔT	1,2944
TUB4-100/02	266	137	1,2966	50	1,6685	$\phi =$	1,6685	x	ΔT	1,2966
TUB4-100/03	399	206	1,2966	50	2,5027	$\phi =$	2,5027	x	ΔT	1,2966
TUB4-100/04	532	275	1,2966	50	3,3370	$\phi =$	3,3370	x	ΔT	1,2966
TUB4-100/05	666	343	1,2966	50	4,1712	$\phi =$	4,1712	x	ΔT	1,2966
TUB4-100/06	799	412	1,2966	50	5,0055	$\phi =$	5,0055	x	ΔT	1,2966
TUB4-100/07	932	480	1,2966	50	5,8397	$\phi =$	5,8397	x	ΔT	1,2966
TUB4-100/08	1065	549	1,2966	50	6,6740	$\phi =$	6,6740	x	ΔT	1,2966
TUB4-100/09	1198	618	1,2966	50	7,5082	$\phi =$	7,5082	x	ΔT	1,2966
TUB4-100/10	1331	686	1,2966	50	8,3424	$\phi =$	8,3424	x	ΔT	1,2966
TUB4-100/11	1464	755	1,2966	50	9,1767	$\phi =$	9,1767	x	ΔT	1,2966
TUB4-100/12	1597	824	1,2966	50	10,0109	$\phi =$	10,0109	x	ΔT	1,2966
TUB4-100/13	1730	892	1,2966	50	10,8452	$\phi =$	10,8452	x	ΔT	1,2966
TUB4-100/14	1863	961	1,2966	50	11,6794	$\phi =$	11,6794	x	ΔT	1,2966
TUB4-100/15	1997	1029	1,2966	50	12,5137	$\phi =$	12,5137	x	ΔT	1,2966
TUB4-100/16	2130	1098	1,2966	50	13,3479	$\phi =$	13,3479	x	ΔT	1,2966
TUB4-100/17	2263	1167	1,2966	50	14,1822	$\phi =$	14,1822	x	ΔT	1,2966
TUB4-100/18	2396	1235	1,2966	50	15,0164	$\phi =$	15,0164	x	ΔT	1,2966
TUB4-100/19	2529	1304	1,2966	50	15,8507	$\phi =$	15,8507	x	ΔT	1,2966
TUB4-100/20	2662	1373	1,2966	50	16,6849	$\phi =$	16,6849	x	ΔT	1,2966
TUB4-100/21	2795	1441	1,2966	50	17,5191	$\phi =$	17,5191	x	ΔT	1,2966
TUB4-100/22	2928	1510	1,2966	50	18,3534	$\phi =$	18,3534	x	ΔT	1,2966
TUB4-100/23	3061	1579	1,2966	50	19,1876	$\phi =$	19,1876	x	ΔT	1,2966
TUB4-100/24	3194	1647	1,2966	50	20,0219	$\phi =$	20,0219	x	ΔT	1,2966
TUB4-100/25	3328	1716	1,2966	50	20,8561	$\phi =$	20,8561	x	ΔT	1,2966
TUB4-100/26	3461	1784	1,2966	50	21,6904	$\phi =$	21,6904	x	ΔT	1,2966

TUB4-100/27	3594	1853	1,2966	50	22,5246	$\phi =$	22,5246	x	ΔT	1,2966
TUB4-100/28	3727	1922	1,2966	50	23,3589	$\phi =$	23,3589	x	ΔT	1,2966
TUB4-100/29	3860	1990	1,2966	50	24,1931	$\phi =$	24,1931	x	ΔT	1,2966
TUB4-100/30	3993	2059	1,2966	50	25,0273	$\phi =$	25,0273	x	ΔT	1,2966

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

Z-ca Prezesa ds. Produkcji
Bartosz Ścierzyński
Nowa Wieś 19.05.2021 r.

Z-ca PREZESA
ds. produkcji

Bartosz Ścierzyński

.....
(podpis)
(signature)

INSTAL-PROJEKT
Gawłowski, Ścierzyński Sp.J.
ul. Jana Pawła II 12A
Nowa Wieś k/Włocławka. 87-853 KRUSZYŃ
NIP 888-10-04-722 BDO 000008268
tel. 54 235 59 05, fax 54 235 45 43