DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH
(DECLARATION OF PERFORMANCE)
Nr (No.) **NDWU/1/TUBUS 4 D50/2021**

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 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:)

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 impast)	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) Φ50	Rated thermal output (55/45/20°C) Φ30	index exponent n	ΔT	K_M	Thermal output in different operating conditions (characteristic curve)				
TUB4-030/02D50	90	47	1,2720	50	0,6211	ϕ =	0,6211	x	ΔT	1,2720
TUB4-030/03D50	135	70	1,2720	50	0,9316	ϕ =	0,9316	x	ΔT	1,2720
TUB4-030/04D50	180	94	1,2720	50	1,2422	ϕ =	1,2422	x	ΔT	1,2720
TUB4-030/05D50	225	117	1,2720	50	1,5527	ϕ =	1,5527	x	ΔT	1,2720
TUB4-030/06D50	270	141	1,2720	50	1,8633	ϕ =	1,8633	x	ΔT	1,2720
TUB4-030/07D50	315	164	1,2720	50	2,1738	ϕ =	2,1738	x	ΔT	1,2720
TUB4-030/08D50	360	188	1,2720	50	2,4843	ϕ =	2,4843	x	ΔT	1,2720
TUB4-030/09D50	405	211	1,2720	50	2,7949	ϕ =	2,7949	x	ΔT	1,2720
TUB4-030/10D50	450	235	1,2720	50	3,1054	ϕ =	3,1054	x	ΔT	1,2720
TUB4-030/11D50	495	258	1,2720	50	3,4160	ϕ =	3,4160	x	ΔT	1,2720
TUB4-030/12D50	540	282	1,2720	50	3,7265	ϕ =	3,7265	x	ΔT	1,2720
TUB4-030/13D50	585	305	1,2720	50	4,0371	ϕ =	4,0371	x	ΔT	1,2720
TUB4-030/14D50	630	329	1,2720	50	4,3476	ϕ =	4,3476	x	ΔT	1,2720
TUB4-030/15D50	675	352	1,2720	50	4,6582	ϕ =	4,6582	x	ΔT	1,2720
TUB4-030/16D50	720	376	1,2720	50	4,9687	ϕ =	4,9687	x	ΔT	1,2720
TUB4-030/17D50	765	399	1,2720	50	5,2792	ϕ =	5,2792	x	ΔT	1,2720
TUB4-030/18D50	810	423	1,2720	50	5,5898	ϕ =	5,5898	x	ΔT	1,2720
TUB4-030/19D50	855	446	1,2720	50	5,9003	ϕ =	5,9003	x	ΔT	1,2720
TUB4-030/20D50	900	470	1,2720	50	6,2109	ϕ =	6,2109	x	ΔT	1,2720
TUB4-030/21D50	945	493	1,2720	50	6,5214	ϕ =	6,5214	x	ΔT	1,2720
TUB4-030/22D50	990	517	1,2720	50	6,8320	ϕ =	6,8320	x	ΔT	1,2720
TUB4-030/23D50	1035	540	1,2720	50	7,1425	ϕ =	7,1425	x	ΔT	1,2720
TUB4-030/24D50	1080	564	1,2720	50	7,4530	ϕ =	7,4530	x	ΔT	1,2720
TUB4-030/25D50	1125	587	1,2720	50	7,7636	ϕ =	7,7636	x	ΔT	1,2720
TUB4-030/26D50	1170	611	1,2720	50	8,0741	ϕ =	8,0741	x	ΔT	1,2720
TUB4-030/27D50	1215	634	1,2720	50	8,3847	ϕ =	8,3847	x	ΔT	1,2720
TUB4-030/28D50	1260	658	1,2720	50	8,6952	ϕ =	8,6952	x	ΔT	1,2720
TUB4-030/29D50	1305	681	1,2720	50	9,0058	ϕ =	9,0058	x	ΔT	1,2720
TUB4-030/30D50	1350	705	1,2720	50	9,3163	ϕ =	9,3163	x	ΔT	1,2720
TUB4-030/31D50	1395	728	1,2720	50	9,6269	ϕ =	9,6269	x	ΔT	1,2720
TUB4-030/32D50	1440	752	1,2720	50	9,9374	ϕ =	9,9374	x	ΔT	1,2720
TUB4-030/33D50	1485	775	1,2720	50	10,2479	ϕ =	10,2479	x	ΔT	1,2720
TUB4-030/34D50	1530	799	1,2720	50	10,5585	ϕ =	10,5585	x	ΔT	1,2720
TUB4-030/35D50	1575	822	1,2720	50	10,8690	ϕ =	10,8690	x	ΔT	1,2720
TUB4-030/36D50	1620	846	1,2720	50	11,1796	ϕ =	11,1796	x	ΔT	1,2720
TUB4-030/37D50	1665	869	1,2720	50	11,4901	ϕ =	11,4901	x	ΔT	1,2720

TUB4-030/38D50	1710	893	1,2720	50	11,8007	ϕ =	11,8007	x	ΔT	1,2720
TUB4-030/39D50	1755	916	1,2720	50	12,1112	ϕ =	12,1112	x	ΔT	1,2720
TUB4-030/40D50	1800	940	1,2720	50	12,4217	ϕ =	12,4217	x	ΔT	1,2720
TUB4-030/41D50	1845	963	1,2720	50	12,7323	ϕ =	12,7323	x	ΔT	1,2720
TUB4-030/42D50	1890	987	1,2720	50	13,0428	ϕ =	13,0428	x	ΔT	1,2720
TUB4-030/43D50	1935	1010	1,2720	50	13,3534	ϕ =	13,3534	x	ΔT	1,2720
TUB4-030/44D50	1980	1034	1,2720	50	13,6639	ϕ =	13,6639	x	ΔT	1,2720
TUB4-030/45D50	2025	1057	1,2720	50	13,9745	ϕ =	13,9745	x	ΔT	1,2720
TUB4-040/02D50	126	66	1,2779	50	0,8510	ϕ =	0,8510	x	ΔT	1,2779
TUB4-040/03D50	189	99	1,2779	50	1,2765	ϕ =	1,2765	x	ΔT	1,2779
TUB4-040/04D50	252	131	1,2779	50	1,7021	ϕ =	1,7021	x	ΔT	1,2779
TUB4-040/05D50	316	164	1,2779	50	2,1276	ϕ =	2,1276	x	ΔT	1,2779
TUB4-040/06D50	379	197	1,2779	50	2,5531	ϕ =	2,5531	x	ΔT	1,2779
TUB4-040/07D50	442	230	1,2779	50	2,9786	ϕ =	2,9786	x	ΔT	1,2779
TUB4-040/08D50	505	263	1,2779	50	3,4041	ϕ =	3,4041	x	ΔT	1,2779
TUB4-040/09D50	568	296	1,2779	50	3,8296	ϕ =	3,8296	x	ΔT	1,2779
TUB4-040/10D50	631	328	1,2779	50	4,2552	ϕ =	4,2552	x	ΔT	1,2779
TUB4-040/11D50	694	361	1,2779	50	4,6807	ϕ =	4,6807	x	ΔT	1,2779
TUB4-040/12D50	757	394	1,2779	50	5,1062	ϕ =	5,1062	x	ΔT	1,2779
TUB4-040/13D50	820	427	1,2779	50	5,5317	ϕ =	5,5317	x	ΔT	1,2779
TUB4-040/14D50	883	460	1,2779	50	5,9572	ϕ =	5,9572	x	ΔT	1,2779
TUB4-040/15D50	947	493	1,2779	50	6,3827	ϕ =	6,3827	x	ΔT	1,2779
TUB4-040/16D50	1010	526	1,2779	50	6,8083	ϕ =	6,8083	x	ΔT	1,2779
TUB4-040/17D50	1073	558	1,2779	50	7,2338	ϕ =	7,2338	x	ΔT	1,2779
TUB4-040/18D50	1136	591	1,2779	50	7,6593	ϕ =	7,6593	x	ΔT	1,2779
TUB4-040/19D50	1199	624	1,2779	50	8,0848	ϕ =	8,0848	x	ΔT	1,2779
TUB4-040/20D50	1262	657	1,2779	50	8,5103	ϕ =	8,5103	x	ΔT	1,2779
TUB4-040/21D50	1325	690	1,2779	50	8,9358	ϕ =	8,9358	x	ΔT	1,2779
TUB4-040/22D50	1388	723	1,2779	50	9,3613	ϕ =	9,3613	x	ΔT	1,2779
TUB4-040/23D50	1451	756	1,2779	50	9,7869	ϕ =	9,7869	x	ΔT	1,2779
TUB4-040/24D50	1514	788	1,2779	50	10,2124	ϕ =	10,2124	x	ΔT	1,2779
TUB4-040/25D50	1578	821	1,2779	50	10,6379	ϕ =	10,6379	x	ΔT	1,2779
TUB4-040/26D50	1641	854	1,2779	50	11,0634	ϕ =	11,0634	x	ΔT	1,2779
TUB4-040/27D50	1704	887	1,2779	50	11,4889	ϕ =	11,4889	x	ΔT	1,2779
TUB4-040/28D50	1767	920	1,2779	50	11,9144	ϕ =	11,9144	x	ΔT	1,2779
TUB4-040/29D50	1830	953	1,2779	50	12,3400	ϕ =	12,3400	x	ΔT	1,2779
TUB4-040/30D50	1893	985	1,2779	50	12,7655	ϕ =	12,7655	x	ΔT	1,2779
TUB4-040/31D50	1956	1018	1,2779	50	13,1910	ϕ =	13,1910	x	ΔT	1,2779
TUB4-040/32D50	2019	1051	1,2779	50	13,6165	ϕ =	13,6165	x	ΔT	1,2779
TUB4-040/33D50	2082	1084	1,2779	50	14,0420	ϕ =	14,0420	x	ΔT	1,2779
TUB4-040/34D50	2145	1117	1,2779	50	14,4675	ϕ =	14,4675	x	ΔT	1,2779
TUB4-040/35D50	2209	1150	1,2779	50	14,8930	ϕ =	14,8930	x	ΔT	1,2779
TUB4-040/36D50	2272	1183	1,2779	50	15,3186	ϕ =	15,3186	x	ΔT	1,2779
TUB4-040/37D50	2335	1215	1,2779	50	15,7441	ϕ =	15,7441	x	ΔT	1,2779
TUB4-040/38D50	2398	1248	1,2779	50	16,1696	ϕ =	16,1696	x	ΔT	1,2779
TUB4-040/39D50	2461	1281	1,2779	50	16,5951	ϕ =	16,5951	x	ΔT	1,2779

TUB4-040/40D50	2524	1314	1,2779	50	17,0206	ϕ =	17,0206	x	ΔT	1,2779
TUB4-040/41D50	2587	1347	1,2779	50	17,4461	ϕ =	17,4461	x	ΔT	1,2779
TUB4-040/42D50	2650	1380	1,2779	50	17,8717	ϕ =	17,8717	x	ΔT	1,2779
TUB4-040/43D50	2713	1413	1,2779	50	18,2972	ϕ =	18,2972	x	ΔT	1,2779
TUB4-040/44D50	2776	1445	1,2779	50	18,7227	ϕ =	18,7227	x	ΔT	1,2779
TUB4-040/45D50	2840	1478	1,2779	50	19,1482	ϕ =	19,1482	x	ΔT	1,2779
TUB4-050/02D50	160	83	1,2824	50	1,0575	ϕ =	1,0575	x	ΔT	1,2824
TUB4-050/03D50	239	124	1,2824	50	1,5862	ϕ =	1,5862	x	ΔT	1,2824
TUB4-050/04D50	319	166	1,2824	50	2,1150	ϕ =	2,1150	x	ΔT	1,2824
TUB4-050/05D50	399	207	1,2824	50	2,6437	ϕ =	2,6437	x	ΔT	1,2824
TUB4-050/06D50	479	249	1,2824	50	3,1725	ϕ =	3,1725	x	ΔT	1,2824
TUB4-050/07D50	559	290	1,2824	50	3,7012	ϕ =	3,7012	x	ΔT	1,2824
TUB4-050/08D50	638	332	1,2824	50	4,2299	ϕ =	4,2299	x	ΔT	1,2824
TUB4-050/09D50	718	373	1,2824	50	4,7587	ϕ =	4,7587	x	ΔT	1,2824
TUB4-050/10D50	798	414	1,2824	50	5,2874	ϕ =	5,2874	x	ΔT	1,2824
TUB4-050/11D50	878	456	1,2824	50	5,8162	ϕ =	5,8162	x	ΔT	1,2824
TUB4-050/12D50	958	497	1,2824	50	6,3449	ϕ =	6,3449	x	ΔT	1,2824
TUB4-050/13D50	1037	539	1,2824	50	6,8736	ϕ =	6,8736	x	ΔT	1,2824
TUB4-050/14D50	1117	580	1,2824	50	7,4024	ϕ =	7,4024	x	ΔT	1,2824
TUB4-050/15D50	1197	622	1,2824	50	7,9311	ϕ =	7,9311	x	ΔT	1,2824
TUB4-050/16D50	1277	663	1,2824	50	8,4599	ϕ =	8,4599	x	ΔT	1,2824
TUB4-050/17D50	1357	705	1,2824	50	8,9886	ϕ =	8,9886	x	ΔT	1,2824
TUB4-050/18D50	1436	746	1,2824	50	9,5174	ϕ =	9,5174	x	ΔT	1,2824
TUB4-050/19D50	1516	788	1,2824	50	10,0461	ϕ =	10,0461	x	ΔT	1,2824
TUB4-050/20D50	1596	829	1,2824	50	10,5748	ϕ =	10,5748	x	ΔT	1,2824
TUB4-050/21D50	1676	870	1,2824	50	11,1036	ϕ =	11,1036	x	ΔT	1,2824
TUB4-050/22D50	1756	912	1,2824	50	11,6323	ϕ =	11,6323	x	ΔT	1,2824
TUB4-050/23D50	1835	953	1,2824	50	12,1611	ϕ =	12,1611	x	ΔT	1,2824
TUB4-050/24D50	1915	995	1,2824	50	12,6898	ϕ =	12,6898	x	ΔT	1,2824
TUB4-050/25D50	1995	1036	1,2824	50	13,2185	ϕ =	13,2185	x	ΔT	1,2824
TUB4-050/26D50	2075	1078	1,2824	50	13,7473	ϕ =	13,7473	x	ΔT	1,2824
TUB4-050/27D50	2155	1119	1,2824	50	14,2760	ϕ =	14,2760	x	ΔT	1,2824
TUB4-050/28D50	2234	1161	1,2824	50	14,8048	ϕ =	14,8048	x	ΔT	1,2824
TUB4-050/29D50	2314	1202	1,2824	50	15,3335	ϕ =	15,3335	x	ΔT	1,2824
TUB4-050/30D50	2394	1243	1,2824	50	15,8623	ϕ =	15,8623	x	ΔT	1,2824
TUB4-050/31D50	2474	1285	1,2824	50	16,3910	ϕ =	16,3910	x	ΔT	1,2824
TUB4-050/32D50	2554	1326	1,2824	50	16,9197	ϕ =	16,9197	x	ΔT	1,2824
TUB4-050/33D50	2633	1368	1,2824	50	17,4485	ϕ =	17,4485	x	ΔT	1,2824
TUB4-050/34D50	2713	1409	1,2824	50	17,9772	ϕ =	17,9772	x	ΔT	1,2824
TUB4-050/35D50	2793	1451	1,2824	50	18,5060	ϕ =	18,5060	x	ΔT	1,2824
TUB4-050/36D50	2873	1492	1,2824	50	19,0347	ϕ =	19,0347	x	ΔT	1,2824
TUB4-050/37D50	2953	1534	1,2824	50	19,5635	ϕ =	19,5635	x	ΔT	1,2824
TUB4-050/38D50	3032	1575	1,2824	50	20,0922	ϕ =	20,0922	x	ΔT	1,2824
TUB4-050/39D50	3112	1616	1,2824	50	20,6209	ϕ =	20,6209	x	ΔT	1,2824
TUB4-050/40D50	3192	1658	1,2824	50	21,1497	ϕ =	21,1497	x	ΔT	1,2824
TUB4-050/41D50	3272	1699	1,2824	50	21,6784	ϕ =	21,6784	x	ΔT	1,2824

TUB4-050/42D50	3352	1741	1,2824	50	22,2072	ϕ =	22,2072	x	ΔT	1,2824
TUB4-050/43D50	3431	1782	1,2824	50	22,7359	ϕ =	22,7359	x	ΔT	1,2824
TUB4-050/44D50	3511	1824	1,2824	50	23,2646	ϕ =	23,2646	x	ΔT	1,2824
TUB4-050/45D50	3591	1865	1,2824	50	23,7934	ϕ =	23,7934	x	ΔT	1,2824
TUB4-070/02D50	215	111	1,2893	50	1,3866	ϕ =	1,3866	x	ΔT	1,2893
TUB4-070/03D50	323	167	1,2893	50	2,0799	ϕ =	2,0799	x	ΔT	1,2893
TUB4-070/04D50	430	223	1,2893	50	2,7732	ϕ =	2,7732	x	ΔT	1,2893
TUB4-070/05D50	538	278	1,2893	50	3,4665	ϕ =	3,4665	x	ΔT	1,2893
TUB4-070/06D50	645	334	1,2893	50	4,1599	ϕ =	4,1599	x	ΔT	1,2893
TUB4-070/07D50	753	389	1,2893	50	4,8532	ϕ =	4,8532	x	ΔT	1,2893
TUB4-070/08D50	860	445	1,2893	50	5,5465	ϕ =	5,5465	x	ΔT	1,2893
TUB4-070/09D50	968	501	1,2893	50	6,2398	ϕ =	6,2398	x	ΔT	1,2893
TUB4-070/10D50	1075	556	1,2893	50	6,9331	ϕ =	6,9331	x	ΔT	1,2893
TUB4-070/11D50	1183	612	1,2893	50	7,6264	ϕ =	7,6264	x	ΔT	1,2893
TUB4-070/12D50	1290	668	1,2893	50	8,3197	ϕ =	8,3197	x	ΔT	1,2893
TUB4-070/13D50	1398	723	1,2893	50	9,0130	ϕ =	9,0130	x	ΔT	1,2893
TUB4-070/14D50	1505	779	1,2893	50	9,7063	ϕ =	9,7063	x	ΔT	1,2893
TUB4-070/15D50	1613	835	1,2893	50	10,3996	ϕ =	10,3996	x	ΔT	1,2893
TUB4-070/16D50	1720	890	1,2893	50	11,0929	ϕ =	11,0929	x	ΔT	1,2893
TUB4-070/17D50	1828	946	1,2893	50	11,7862	ϕ =	11,7862	x	ΔT	1,2893
TUB4-070/18D50	1935	1002	1,2893	50	12,4796	ϕ =	12,4796	x	ΔT	1,2893
TUB4-070/19D50	2043	1057	1,2893	50	13,1729	ϕ =	13,1729	x	ΔT	1,2893
TUB4-070/20D50	2150	1113	1,2893	50	13,8662	ϕ =	13,8662	x	ΔT	1,2893
TUB4-070/21D50	2258	1168	1,2893	50	14,5595	ϕ =	14,5595	x	ΔT	1,2893
TUB4-070/22D50	2365	1224	1,2893	50	15,2528	ϕ =	15,2528	x	ΔT	1,2893
TUB4-070/23D50	2473	1280	1,2893	50	15,9461	ϕ =	15,9461	x	ΔT	1,2893
TUB4-070/24D50	2580	1335	1,2893	50	16,6394	ϕ =	16,6394	x	ΔT	1,2893
TUB4-070/25D50	2688	1391	1,2893	50	17,3327	ϕ =	17,3327	x	ΔT	1,2893
TUB4-070/26D50	2795	1447	1,2893	50	18,0260	ϕ =	18,0260	x	ΔT	1,2893
TUB4-070/27D50	2903	1502	1,2893	50	18,7193	ϕ =	18,7193	x	ΔT	1,2893
TUB4-070/28D50	3010	1558	1,2893	50	19,4126	ϕ =	19,4126	x	ΔT	1,2893
TUB4-070/29D50	3118	1614	1,2893	50	20,1059	ϕ =	20,1059	x	ΔT	1,2893
TUB4-070/30D50	3225	1669	1,2893	50	20,7993	ϕ =	20,7993	x	ΔT	1,2893
TUB4-070/31D50	3333	1725	1,2893	50	21,4926	ϕ =	21,4926	x	ΔT	1,2893
TUB4-070/32D50	3440	1780	1,2893	50	22,1859	ϕ =	22,1859	x	ΔT	1,2893
TUB4-070/33D50	3548	1836	1,2893	50	22,8792	ϕ =	22,8792	x	ΔT	1,2893
TUB4-070/34D50	3655	1892	1,2893	50	23,5725	ϕ =	23,5725	x	ΔT	1,2893
TUB4-070/35D50	3763	1947	1,2893	50	24,2658	ϕ =	24,2658	x	ΔT	1,2893
TUB4-070/36D50	3870	2003	1,2893	50	24,9591	ϕ =	24,9591	x	ΔT	1,2893
TUB4-070/37D50	3978	2059	1,2893	50	25,6524	ϕ =	25,6524	x	ΔT	1,2893
TUB4-070/38D50	4085	2114	1,2893	50	26,3457	ϕ =	26,3457	x	ΔT	1,2893
TUB4-070/39D50	4193	2170	1,2893	50	27,0390	ϕ =	27,0390	x	ΔT	1,2893
TUB4-070/40D50	4300	2226	1,2893	50	27,7323	ϕ =	27,7323	x	ΔT	1,2893
TUB4-070/41D50	4408	2281	1,2893	50	28,4256	ϕ =	28,4256	x	ΔT	1,2893
TUB4-070/42D50	4515	2337	1,2893	50	29,1190	ϕ =	29,1190	x	ΔT	1,2893
TUB4-080/02D50	236	122	1,2920	50	1,5086	ϕ =	1,5086	x	ΔT	1,2920

TUB4-080/03D50	355	183	1,2920	50	2,2629	ϕ =	2,2629	x	ΔT	1,2920
TUB4-080/04D50	473	244	1,2920	50	3,0172	ϕ =	3,0172	x	ΔT	1,2920
TUB4-080/05D50	591	305	1,2920	50	3,7715	ϕ =	3,7715	x	ΔT	1,2920
TUB4-080/06D50	709	367	1,2920	50	4,5258	ϕ =	4,5258	x	ΔT	1,2920
TUB4-080/07D50	827	428	1,2920	50	5,2802	ϕ =	5,2802	x	ΔT	1,2920
TUB4-080/08D50	946	489	1,2920	50	6,0345	ϕ =	6,0345	x	ΔT	1,2920
TUB4-080/09D50	1064	550	1,2920	50	6,7888	ϕ =	6,7888	x	ΔT	1,2920
TUB4-080/10D50	1182	611	1,2920	50	7,5431	ϕ =	7,5431	x	ΔT	1,2920
TUB4-080/11D50	1300	672	1,2920	50	8,2974	ϕ =	8,2974	x	ΔT	1,2920
TUB4-080/12D50	1418	733	1,2920	50	9,0517	ϕ =	9,0517	x	ΔT	1,2920
TUB4-080/13D50	1537	794	1,2920	50	9,8060	ϕ =	9,8060	x	ΔT	1,2920
TUB4-080/14D50	1655	855	1,2920	50	10,5603	ϕ =	10,5603	x	ΔT	1,2920
TUB4-080/15D50	1773	916	1,2920	50	11,3146	ϕ =	11,3146	x	ΔT	1,2920
TUB4-080/16D50	1891	977	1,2920	50	12,0689	ϕ =	12,0689	x	ΔT	1,2920
TUB4-080/17D50	2009	1039	1,2920	50	12,8232	ϕ =	12,8232	x	ΔT	1,2920
TUB4-080/18D50	2128	1100	1,2920	50	13,5775	ϕ =	13,5775	x	ΔT	1,2920
TUB4-080/19D50	2246	1161	1,2920	50	14,3318	ϕ =	14,3318	x	ΔT	1,2920
TUB4-080/20D50	2364	1222	1,2920	50	15,0861	ϕ =	15,0861	x	ΔT	1,2920
TUB4-080/21D50	2482	1283	1,2920	50	15,8405	ϕ =	15,8405	x	ΔT	1,2920
TUB4-080/22D50	2600	1344	1,2920	50	16,5948	ϕ =	16,5948	x	ΔT	1,2920
TUB4-080/23D50	2719	1405	1,2920	50	17,3491	ϕ =	17,3491	x	ΔT	1,2920
TUB4-080/24D50	2837	1466	1,2920	50	18,1034	ϕ =	18,1034	x	ΔT	1,2920
TUB4-080/25D50	2955	1527	1,2920	50	18,8577	ϕ =	18,8577	x	ΔT	1,2920
TUB4-080/26D50	3073	1588	1,2920	50	19,6120	ϕ =	19,6120	x	ΔT	1,2920
TUB4-080/27D50	3191	1650	1,2920	50	20,3663	ϕ =	20,3663	x	ΔT	1,2920
TUB4-080/28D50	3310	1711	1,2920	50	21,1206	ϕ =	21,1206	x	ΔT	1,2920
TUB4-080/29D50	3428	1772	1,2920	50	21,8749	ϕ =	21,8749	x	ΔT	1,2920
TUB4-080/30D50	3546	1833	1,2920	50	22,6292	ϕ =	22,6292	x	ΔT	1,2920
TUB4-080/31D50	3664	1894	1,2920	50	23,3835	ϕ =	23,3835	x	ΔT	1,2920
TUB4-080/32D50	3782	1955	1,2920	50	24,1378	ϕ =	24,1378	x	ΔT	1,2920
TUB4-080/33D50	3901	2016	1,2920	50	24,8921	ϕ =	24,8921	x	ΔT	1,2920
TUB4-080/34D50	4019	2077	1,2920	50	25,6464	ϕ =	25,6464	x	ΔT	1,2920
TUB4-080/35D50	4137	2138	1,2920	50	26,4008	ϕ =	26,4008	x	ΔT	1,2920
TUB4-080/36D50	4255	2199	1,2920	50	27,1551	ϕ =	27,1551	x	ΔT	1,2920
TUB4-080/37D50	4373	2260	1,2920	50	27,9094	ϕ =	27,9094	x	ΔT	1,2920
TUB4-090/02D50	253	131	1,2944	50	1,6007	ϕ =	1,6007	x	ΔT	1,2944
TUB4-090/03D50	380	196	1,2944	50	2,4011	ϕ =	2,4011	x	ΔT	1,2944
TUB4-090/04D50	506	261	1,2944	50	3,2015	ϕ =	3,2015	x	ΔT	1,2944
TUB4-090/05D50	633	327	1,2944	50	4,0018	ϕ =	4,0018	x	ΔT	1,2944
TUB4-090/06D50	760	392	1,2944	50	4,8022	ϕ =	4,8022	x	ΔT	1,2944
TUB4-090/07D50	886	457	1,2944	50	5,6025	ϕ =	5,6025	x	ΔT	1,2944
TUB4-090/08D50	1013	523	1,2944	50	6,4029	ϕ =	6,4029	x	ΔT	1,2944
TUB4-090/09D50	1139	588	1,2944	50	7,2033	ϕ =	7,2033	x	ΔT	1,2944
TUB4-090/10D50	1266	654	1,2944	50	8,0036	ϕ =	8,0036	x	ΔT	1,2944
TUB4-090/11D50	1393	719	1,2944	50	8,8040	ϕ =	8,8040	x	ΔT	1,2944
TUB4-090/12D50	1519	784	1,2944	50	9,6044	ϕ =	9,6044	x	ΔT	1,2944

TUB4-090/13D50	1646	850	1,2944	50	10,4047	ϕ =	10,4047	x	ΔT	1,2944
TUB4-090/14D50	1772	915	1,2944	50	11,2051	ϕ =	11,2051	x	ΔT	1,2944
TUB4-090/15D50	1899	980	1,2944	50	12,0054	ϕ =	12,0054	x	ΔT	1,2944
TUB4-090/16D50	2026	1046	1,2944	50	12,8058	ϕ =	12,8058	x	ΔT	1,2944
TUB4-090/17D50	2152	1111	1,2944	50	13,6062	ϕ =	13,6062	x	ΔT	1,2944
TUB4-090/18D50	2279	1176	1,2944	50	14,4065	ϕ =	14,4065	x	ΔT	1,2944
TUB4-090/19D50	2405	1242	1,2944	50	15,2069	ϕ =	15,2069	x	ΔT	1,2944
TUB4-090/20D50	2532	1307	1,2944	50	16,0073	ϕ =	16,0073	x	ΔT	1,2944
TUB4-090/21D50	2659	1372	1,2944	50	16,8076	ϕ =	16,8076	x	ΔT	1,2944
TUB4-090/22D50	2785	1438	1,2944	50	17,6080	ϕ =	17,6080	x	ΔT	1,2944
TUB4-090/23D50	2912	1503	1,2944	50	18,4083	ϕ =	18,4083	x	ΔT	1,2944
TUB4-090/24D50	3038	1568	1,2944	50	19,2087	ϕ =	19,2087	x	ΔT	1,2944
TUB4-090/25D50	3165	1634	1,2944	50	20,0091	ϕ =	20,0091	x	ΔT	1,2944
TUB4-090/26D50	3292	1699	1,2944	50	20,8094	ϕ =	20,8094	x	ΔT	1,2944
TUB4-090/27D50	3418	1765	1,2944	50	21,6098	ϕ =	21,6098	x	ΔT	1,2944
TUB4-090/28D50	3545	1830	1,2944	50	22,4102	ϕ =	22,4102	x	ΔT	1,2944
TUB4-090/29D50	3671	1895	1,2944	50	23,2105	ϕ =	23,2105	x	ΔT	1,2944
TUB4-090/30D50	3798	1961	1,2944	50	24,0109	ϕ =	24,0109	x	ΔT	1,2944
TUB4-090/31D50	3925	2026	1,2944	50	24,8112	ϕ =	24,8112	x	ΔT	1,2944
TUB4-090/32D50	4051	2091	1,2944	50	25,6116	ϕ =	25,6116	x	ΔT	1,2944
TUB4-090/33D50	4178	2157	1,2944	50	26,4120	ϕ =	26,4120	x	ΔT	1,2944
TUB4-100/02D50	266	137	1,2966	50	1,6685	ϕ =	1,6685	x	ΔT	1,2966
TUB4-100/03D50	399	206	1,2966	50	2,5027	ϕ =	2,5027	x	ΔT	1,2966
TUB4-100/04D50	532	275	1,2966	50	3,3370	ϕ =	3,3370	x	ΔT	1,2966
TUB4-100/05D50	666	343	1,2966	50	4,1712	ϕ =	4,1712	x	ΔT	1,2966
TUB4-100/06D50	799	412	1,2966	50	5,0055	ϕ =	5,0055	x	ΔT	1,2966
TUB4-100/07D50	932	480	1,2966	50	5,8397	ϕ =	5,8397	x	ΔT	1,2966
TUB4-100/08D50	1065	549	1,2966	50	6,6740	ϕ =	6,6740	x	ΔT	1,2966
TUB4-100/09D50	1198	618	1,2966	50	7,5082	ϕ =	7,5082	x	ΔT	1,2966
TUB4-100/10D50	1331	686	1,2966	50	8,3424	ϕ =	8,3424	x	ΔT	1,2966
TUB4-100/11D50	1464	755	1,2966	50	9,1767	ϕ =	9,1767	x	ΔT	1,2966
TUB4-100/12D50	1597	824	1,2966	50	10,0109	ϕ =	10,0109	x	ΔT	1,2966
TUB4-100/13D50	1730	892	1,2966	50	10,8452	ϕ =	10,8452	x	ΔT	1,2966
TUB4-100/14D50	1863	961	1,2966	50	11,6794	ϕ =	11,6794	x	ΔT	1,2966
TUB4-100/15D50	1997	1029	1,2966	50	12,5137	ϕ =	12,5137	x	ΔT	1,2966
TUB4-100/16D50	2130	1098	1,2966	50	13,3479	ϕ =	13,3479	x	ΔT	1,2966
TUB4-100/17D50	2263	1167	1,2966	50	14,1822	ϕ =	14,1822	x	ΔT	1,2966
TUB4-100/18D50	2396	1235	1,2966	50	15,0164	ϕ =	15,0164	x	ΔT	1,2966
TUB4-100/19D50	2529	1304	1,2966	50	15,8507	ϕ =	15,8507	x	ΔT	1,2966
TUB4-100/20D50	2662	1373	1,2966	50	16,6849	ϕ =	16,6849	x	ΔT	1,2966
TUB4-100/21D50	2795	1441	1,2966	50	17,5191	ϕ =	17,5191	x	ΔT	1,2966
TUB4-100/22D50	2928	1510	1,2966	50	18,3534	ϕ =	18,3534	x	ΔT	1,2966
TUB4-100/23D50	3061	1579	1,2966	50	19,1876	ϕ =	19,1876	x	ΔT	1,2966
TUB4-100/24D50	3194	1647	1,2966	50	20,0219	ϕ =	20,0219	x	ΔT	1,2966
TUB4-100/25D50	3328	1716	1,2966	50	20,8561	ϕ =	20,8561	x	ΔT	1,2966
TUB4-100/26D50	3461	1784	1,2966	50	21,6904	ϕ =	21,6904	x	ΔT	1,2966

Nr (No.) **NDWU/1/TUBUS 4 D50/2021**

TUB4-100/27D50	3594	1853	1,2966	50	22,5246	ϕ =	22,5246	x	ΔT	1,2966
TUB4-100/28D50	3727	1922	1,2966	50	23,3589	ϕ =	23,3589	x	ΔT	1,2966
TUB4-100/29D50	3860	1990	1,2966	50	24,1931	ϕ =	24,1931	x	ΔT	1,2966
TUB4-100/30D50	3993	2059	1,2966	50	25,0273	ϕ =	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)

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