

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 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.)		

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

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)			
TUB4-030/02D50	90	47	1,2720	50	0,62109	$\phi =$	0,62109	x ΔT	1,2720
TUB4-030/03D50	135	70	1,2720	50	0,93163	$\phi =$	0,93163	x ΔT	1,2720
TUB4-030/04D50	180	94	1,2720	50	1,24217	$\phi =$	1,24217	x ΔT	1,2720
TUB4-030/05D50	225	117	1,2720	50	1,55272	$\phi =$	1,55272	x ΔT	1,2720
TUB4-030/06D50	270	141	1,2720	50	1,86326	$\phi =$	1,86326	x ΔT	1,2720
TUB4-030/07D50	315	164	1,2720	50	2,17381	$\phi =$	2,17381	x ΔT	1,2720
TUB4-030/08D50	360	188	1,2720	50	2,48435	$\phi =$	2,48435	x ΔT	1,2720
TUB4-030/09D50	405	211	1,2720	50	2,79489	$\phi =$	2,79489	x ΔT	1,2720
TUB4-030/10D50	450	235	1,2720	50	3,10544	$\phi =$	3,10544	x ΔT	1,2720
TUB4-030/11D50	495	258	1,2720	50	3,41598	$\phi =$	3,41598	x ΔT	1,2720
TUB4-030/12D50	540	282	1,2720	50	3,72652	$\phi =$	3,72652	x ΔT	1,2720
TUB4-030/13D50	585	305	1,2720	50	4,03707	$\phi =$	4,03707	x ΔT	1,2720
TUB4-030/14D50	630	329	1,2720	50	4,34761	$\phi =$	4,34761	x ΔT	1,2720
TUB4-030/15D50	675	352	1,2720	50	4,65815	$\phi =$	4,65815	x ΔT	1,2720
TUB4-030/16D50	720	376	1,2720	50	4,96870	$\phi =$	4,96870	x ΔT	1,2720
TUB4-030/17D50	765	399	1,2720	50	5,27924	$\phi =$	5,27924	x ΔT	1,2720
TUB4-030/18D50	810	423	1,2720	50	5,58979	$\phi =$	5,58979	x ΔT	1,2720
TUB4-030/19D50	855	446	1,2720	50	5,90033	$\phi =$	5,90033	x ΔT	1,2720
TUB4-030/20D50	900	470	1,2720	50	6,21087	$\phi =$	6,21087	x ΔT	1,2720
TUB4-030/21D50	945	493	1,2720	50	6,52142	$\phi =$	6,52142	x ΔT	1,2720
TUB4-030/22D50	990	517	1,2720	50	6,83196	$\phi =$	6,83196	x ΔT	1,2720
TUB4-030/23D50	1035	540	1,2720	50	7,14250	$\phi =$	7,14250	x ΔT	1,2720
TUB4-030/24D50	1080	564	1,2720	50	7,45305	$\phi =$	7,45305	x ΔT	1,2720
TUB4-030/25D50	1125	587	1,2720	50	7,76359	$\phi =$	7,76359	x ΔT	1,2720
TUB4-030/26D50	1170	611	1,2720	50	8,07414	$\phi =$	8,07414	x ΔT	1,2720
TUB4-030/27D50	1215	634	1,2720	50	8,38468	$\phi =$	8,38468	x ΔT	1,2720
TUB4-030/28D50	1260	658	1,2720	50	8,69522	$\phi =$	8,69522	x ΔT	1,2720
TUB4-030/29D50	1305	681	1,2720	50	9,00577	$\phi =$	9,00577	x ΔT	1,2720
TUB4-030/30D50	1350	705	1,2720	50	9,31631	$\phi =$	9,31631	x ΔT	1,2720
TUB4-030/31D50	1395	728	1,2720	50	9,62685	$\phi =$	9,62685	x ΔT	1,2720
TUB4-030/32D50	1440	752	1,2720	50	9,93740	$\phi =$	9,93740	x ΔT	1,2720
TUB4-030/33D50	1485	775	1,2720	50	10,24794	$\phi =$	10,24794	x ΔT	1,2720
TUB4-030/34D50	1530	799	1,2720	50	10,55848	$\phi =$	10,55848	x ΔT	1,2720
TUB4-030/35D50	1575	822	1,2720	50	10,86903	$\phi =$	10,86903	x ΔT	1,2720
TUB4-030/36D50	1620	846	1,2720	50	11,17957	$\phi =$	11,17957	x ΔT	1,2720
TUB4-030/37D50	1665	869	1,2720	50	11,49012	$\phi =$	11,49012	x ΔT	1,2720
TUB4-030/38D50	1710	893	1,2720	50	11,80066	$\phi =$	11,80066	x ΔT	1,2720
TUB4-030/39D50	1755	916	1,2720	50	12,11120	$\phi =$	12,11120	x ΔT	1,2720
TUB4-030/40D50	1800	940	1,2720	50	12,42175	$\phi =$	12,42175	x ΔT	1,2720
TUB4-030/41D50	1845	963	1,2720	50	12,73229	$\phi =$	12,73229	x ΔT	1,2720
TUB4-030/42D50	1890	987	1,2720	50	13,04283	$\phi =$	13,04283	x ΔT	1,2720
TUB4-030/43D50	1935	1010	1,2720	50	13,35338	$\phi =$	13,35338	x ΔT	1,2720
TUB4-030/44D50	1980	1034	1,2720	50	13,66392	$\phi =$	13,66392	x ΔT	1,2720
TUB4-030/45D50	2025	1057	1,2720	50	13,97446	$\phi =$	13,97446	x ΔT	1,2720
TUB4-040/02D50	126	66	1,2779	50	0,85103	$\phi =$	0,85103	x ΔT	1,2779
TUB4-040/03D50	189	99	1,2779	50	1,27655	$\phi =$	1,27655	x ΔT	1,2779
TUB4-040/04D50	252	131	1,2779	50	1,70206	$\phi =$	1,70206	x ΔT	1,2779
TUB4-040/05D50	316	164	1,2779	50	2,12758	$\phi =$	2,12758	x ΔT	1,2779
TUB4-040/06D50	379	197	1,2779	50	2,55309	$\phi =$	2,55309	x ΔT	1,2779
TUB4-040/07D50	442	230	1,2779	50	2,97861	$\phi =$	2,97861	x ΔT	1,2779
TUB4-040/08D50	505	263	1,2779	50	3,40413	$\phi =$	3,40413	x ΔT	1,2779
TUB4-040/09D50	568	296	1,2779	50	3,82964	$\phi =$	3,82964	x ΔT	1,2779
TUB4-040/10D50	631	328	1,2779	50	4,25516	$\phi =$	4,25516	x ΔT	1,2779
TUB4-040/11D50	694	361	1,2779	50	4,68067	$\phi =$	4,68067	x ΔT	1,2779
TUB4-040/12D50	757	394	1,2779	50	5,10619	$\phi =$	5,10619	x ΔT	1,2779
TUB4-040/13D50	820	427	1,2779	50	5,53170	$\phi =$	5,53170	x ΔT	1,2779
TUB4-040/14D50	883	460	1,2779	50	5,95722	$\phi =$	5,95722	x ΔT	1,2779
TUB4-040/15D50	947	493	1,2779	50	6,38274	$\phi =$	6,38274	x ΔT	1,2779
TUB4-040/16D50	1010	526	1,2779	50	6,80825	$\phi =$	6,80825	x ΔT	1,2779

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

TUB4-040/17D50	1073	558	1,2779	50	7,23377	$\phi =$	7,23377	$\times \Delta T$	1,2779
TUB4-040/18D50	1136	591	1,2779	50	7,65928	$\phi =$	7,65928	$\times \Delta T$	1,2779
TUB4-040/19D50	1199	624	1,2779	50	8,08480	$\phi =$	8,08480	$\times \Delta T$	1,2779
TUB4-040/20D50	1262	657	1,2779	50	8,51031	$\phi =$	8,51031	$\times \Delta T$	1,2779
TUB4-040/21D50	1325	690	1,2779	50	8,93583	$\phi =$	8,93583	$\times \Delta T$	1,2779
TUB4-040/22D50	1388	723	1,2779	50	9,36135	$\phi =$	9,36135	$\times \Delta T$	1,2779
TUB4-040/23D50	1451	756	1,2779	50	9,78686	$\phi =$	9,78686	$\times \Delta T$	1,2779
TUB4-040/24D50	1514	788	1,2779	50	10,21238	$\phi =$	10,21238	$\times \Delta T$	1,2779
TUB4-040/25D50	1578	821	1,2779	50	10,63789	$\phi =$	10,63789	$\times \Delta T$	1,2779
TUB4-040/26D50	1641	854	1,2779	50	11,06341	$\phi =$	11,06341	$\times \Delta T$	1,2779
TUB4-040/27D50	1704	887	1,2779	50	11,48892	$\phi =$	11,48892	$\times \Delta T$	1,2779
TUB4-040/28D50	1767	920	1,2779	50	11,91444	$\phi =$	11,91444	$\times \Delta T$	1,2779
TUB4-040/29D50	1830	953	1,2779	50	12,33996	$\phi =$	12,33996	$\times \Delta T$	1,2779
TUB4-040/30D50	1893	985	1,2779	50	12,76547	$\phi =$	12,76547	$\times \Delta T$	1,2779
TUB4-040/31D50	1956	1018	1,2779	50	13,19099	$\phi =$	13,19099	$\times \Delta T$	1,2779
TUB4-040/32D50	2019	1051	1,2779	50	13,61650	$\phi =$	13,61650	$\times \Delta T$	1,2779
TUB4-040/33D50	2082	1084	1,2779	50	14,04202	$\phi =$	14,04202	$\times \Delta T$	1,2779
TUB4-040/34D50	2145	1117	1,2779	50	14,46753	$\phi =$	14,46753	$\times \Delta T$	1,2779
TUB4-040/35D50	2209	1150	1,2779	50	14,89305	$\phi =$	14,89305	$\times \Delta T$	1,2779
TUB4-040/36D50	2272	1183	1,2779	50	15,31857	$\phi =$	15,31857	$\times \Delta T$	1,2779
TUB4-040/37D50	2335	1215	1,2779	50	15,74408	$\phi =$	15,74408	$\times \Delta T$	1,2779
TUB4-040/38D50	2398	1248	1,2779	50	16,16960	$\phi =$	16,16960	$\times \Delta T$	1,2779
TUB4-040/39D50	2461	1281	1,2779	50	16,59511	$\phi =$	16,59511	$\times \Delta T$	1,2779
TUB4-040/40D50	2524	1314	1,2779	50	17,02063	$\phi =$	17,02063	$\times \Delta T$	1,2779
TUB4-040/41D50	2587	1347	1,2779	50	17,44614	$\phi =$	17,44614	$\times \Delta T$	1,2779
TUB4-040/42D50	2650	1380	1,2779	50	17,87166	$\phi =$	17,87166	$\times \Delta T$	1,2779
TUB4-040/43D50	2713	1413	1,2779	50	18,29718	$\phi =$	18,29718	$\times \Delta T$	1,2779
TUB4-040/44D50	2776	1445	1,2779	50	18,72269	$\phi =$	18,72269	$\times \Delta T$	1,2779
TUB4-040/45D50	2840	1478	1,2779	50	19,14821	$\phi =$	19,14821	$\times \Delta T$	1,2779
TUB4-050/02D50	160	83	1,2824	50	1,05748	$\phi =$	1,05748	$\times \Delta T$	1,2824
TUB4-050/03D50	239	124	1,2824	50	1,58623	$\phi =$	1,58623	$\times \Delta T$	1,2824
TUB4-050/04D50	319	166	1,2824	50	2,11497	$\phi =$	2,11497	$\times \Delta T$	1,2824
TUB4-050/05D50	399	207	1,2824	50	2,64371	$\phi =$	2,64371	$\times \Delta T$	1,2824
TUB4-050/06D50	479	249	1,2824	50	3,17245	$\phi =$	3,17245	$\times \Delta T$	1,2824
TUB4-050/07D50	559	290	1,2824	50	3,70119	$\phi =$	3,70119	$\times \Delta T$	1,2824
TUB4-050/08D50	638	332	1,2824	50	4,22994	$\phi =$	4,22994	$\times \Delta T$	1,2824
TUB4-050/09D50	718	373	1,2824	50	4,75868	$\phi =$	4,75868	$\times \Delta T$	1,2824
TUB4-050/10D50	798	414	1,2824	50	5,28742	$\phi =$	5,28742	$\times \Delta T$	1,2824
TUB4-050/11D50	878	456	1,2824	50	5,81616	$\phi =$	5,81616	$\times \Delta T$	1,2824
TUB4-050/12D50	958	497	1,2824	50	6,34490	$\phi =$	6,34490	$\times \Delta T$	1,2824
TUB4-050/13D50	1037	539	1,2824	50	6,87365	$\phi =$	6,87365	$\times \Delta T$	1,2824
TUB4-050/14D50	1117	580	1,2824	50	7,40239	$\phi =$	7,40239	$\times \Delta T$	1,2824
TUB4-050/15D50	1197	622	1,2824	50	7,93113	$\phi =$	7,93113	$\times \Delta T$	1,2824
TUB4-050/16D50	1277	663	1,2824	50	8,45987	$\phi =$	8,45987	$\times \Delta T$	1,2824
TUB4-050/17D50	1357	705	1,2824	50	8,98861	$\phi =$	8,98861	$\times \Delta T$	1,2824
TUB4-050/18D50	1436	746	1,2824	50	9,51735	$\phi =$	9,51735	$\times \Delta T$	1,2824
TUB4-050/19D50	1516	788	1,2824	50	10,04610	$\phi =$	10,04610	$\times \Delta T$	1,2824
TUB4-050/20D50	1596	829	1,2824	50	10,57484	$\phi =$	10,57484	$\times \Delta T$	1,2824
TUB4-050/21D50	1676	870	1,2824	50	11,10358	$\phi =$	11,10358	$\times \Delta T$	1,2824
TUB4-050/22D50	1756	912	1,2824	50	11,63232	$\phi =$	11,63232	$\times \Delta T$	1,2824
TUB4-050/23D50	1835	953	1,2824	50	12,16106	$\phi =$	12,16106	$\times \Delta T$	1,2824
TUB4-050/24D50	1915	995	1,2824	50	12,68981	$\phi =$	12,68981	$\times \Delta T$	1,2824
TUB4-050/25D50	1995	1036	1,2824	50	13,21855	$\phi =$	13,21855	$\times \Delta T$	1,2824
TUB4-050/26D50	2075	1078	1,2824	50	13,74729	$\phi =$	13,74729	$\times \Delta T$	1,2824
TUB4-050/27D50	2155	1119	1,2824	50	14,27603	$\phi =$	14,27603	$\times \Delta T$	1,2824
TUB4-050/28D50	2234	1161	1,2824	50	14,80477	$\phi =$	14,80477	$\times \Delta T$	1,2824
TUB4-050/29D50	2314	1202	1,2824	50	15,33352	$\phi =$	15,33352	$\times \Delta T$	1,2824
TUB4-050/30D50	2394	1243	1,2824	50	15,86226	$\phi =$	15,86226	$\times \Delta T$	1,2824
TUB4-050/31D50	2474	1285	1,2824	50	16,39100	$\phi =$	16,39100	$\times \Delta T$	1,2824
TUB4-050/32D50	2554	1326	1,2824	50	16,91974	$\phi =$	16,91974	$\times \Delta T$	1,2824
TUB4-050/33D50	2633	1368	1,2824	50	17,44848	$\phi =$	17,44848	$\times \Delta T$	1,2824
TUB4-050/34D50	2713	1409	1,2824	50	17,97723	$\phi =$	17,97723	$\times \Delta T$	1,2824
TUB4-050/35D50	2793	1451	1,2824	50	18,50597	$\phi =$	18,50597	$\times \Delta T$	1,2824
TUB4-050/36D50	2873	1492	1,2824	50	19,03471	$\phi =$	19,03471	$\times \Delta T$	1,2824
TUB4-050/37D50	2953	1534	1,2824	50	19,56345	$\phi =$	19,56345	$\times \Delta T$	1,2824

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

TUB4-050/38D50	3032	1575	1,2824	50	20,09219	$\phi =$	20,09219	$\times \Delta T$	1,2824
TUB4-050/39D50	3112	1616	1,2824	50	20,62094	$\phi =$	20,62094	$\times \Delta T$	1,2824
TUB4-050/40D50	3192	1658	1,2824	50	21,14968	$\phi =$	21,14968	$\times \Delta T$	1,2824
TUB4-050/41D50	3272	1699	1,2824	50	21,67842	$\phi =$	21,67842	$\times \Delta T$	1,2824
TUB4-050/42D50	3352	1741	1,2824	50	22,20716	$\phi =$	22,20716	$\times \Delta T$	1,2824
TUB4-050/43D50	3431	1782	1,2824	50	22,73590	$\phi =$	22,73590	$\times \Delta T$	1,2824
TUB4-050/44D50	3511	1824	1,2824	50	23,26465	$\phi =$	23,26465	$\times \Delta T$	1,2824
TUB4-050/45D50	3591	1865	1,2824	50	23,79339	$\phi =$	23,79339	$\times \Delta T$	1,2824
TUB4-070/02D50	215	111	1,2893	50	1,38662	$\phi =$	1,38662	$\times \Delta T$	1,2893
TUB4-070/03D50	323	167	1,2893	50	2,07993	$\phi =$	2,07993	$\times \Delta T$	1,2893
TUB4-070/04D50	430	223	1,2893	50	2,77323	$\phi =$	2,77323	$\times \Delta T$	1,2893
TUB4-070/05D50	538	278	1,2893	50	3,46654	$\phi =$	3,46654	$\times \Delta T$	1,2893
TUB4-070/06D50	645	334	1,2893	50	4,15985	$\phi =$	4,15985	$\times \Delta T$	1,2893
TUB4-070/07D50	753	389	1,2893	50	4,85316	$\phi =$	4,85316	$\times \Delta T$	1,2893
TUB4-070/08D50	860	445	1,2893	50	5,54647	$\phi =$	5,54647	$\times \Delta T$	1,2893
TUB4-070/09D50	968	501	1,2893	50	6,23978	$\phi =$	6,23978	$\times \Delta T$	1,2893
TUB4-070/10D50	1075	556	1,2893	50	6,93308	$\phi =$	6,93308	$\times \Delta T$	1,2893
TUB4-070/11D50	1183	612	1,2893	50	7,62639	$\phi =$	7,62639	$\times \Delta T$	1,2893
TUB4-070/12D50	1290	668	1,2893	50	8,31970	$\phi =$	8,31970	$\times \Delta T$	1,2893
TUB4-070/13D50	1398	723	1,2893	50	9,01301	$\phi =$	9,01301	$\times \Delta T$	1,2893
TUB4-070/14D50	1505	779	1,2893	50	9,70632	$\phi =$	9,70632	$\times \Delta T$	1,2893
TUB4-070/15D50	1613	835	1,2893	50	10,39963	$\phi =$	10,39963	$\times \Delta T$	1,2893
TUB4-070/16D50	1720	890	1,2893	50	11,09293	$\phi =$	11,09293	$\times \Delta T$	1,2893
TUB4-070/17D50	1828	946	1,2893	50	11,78624	$\phi =$	11,78624	$\times \Delta T$	1,2893
TUB4-070/18D50	1935	1002	1,2893	50	12,47955	$\phi =$	12,47955	$\times \Delta T$	1,2893
TUB4-070/19D50	2043	1057	1,2893	50	13,17286	$\phi =$	13,17286	$\times \Delta T$	1,2893
TUB4-070/20D50	2150	1113	1,2893	50	13,86617	$\phi =$	13,86617	$\times \Delta T$	1,2893
TUB4-070/21D50	2258	1168	1,2893	50	14,55948	$\phi =$	14,55948	$\times \Delta T$	1,2893
TUB4-070/22D50	2365	1224	1,2893	50	15,25278	$\phi =$	15,25278	$\times \Delta T$	1,2893
TUB4-070/23D50	2473	1280	1,2893	50	15,94609	$\phi =$	15,94609	$\times \Delta T$	1,2893
TUB4-070/24D50	2580	1335	1,2893	50	16,63940	$\phi =$	16,63940	$\times \Delta T$	1,2893
TUB4-070/25D50	2688	1391	1,2893	50	17,33271	$\phi =$	17,33271	$\times \Delta T$	1,2893
TUB4-070/26D50	2795	1447	1,2893	50	18,02602	$\phi =$	18,02602	$\times \Delta T$	1,2893
TUB4-070/27D50	2903	1502	1,2893	50	18,71933	$\phi =$	18,71933	$\times \Delta T$	1,2893
TUB4-070/28D50	3010	1558	1,2893	50	19,41263	$\phi =$	19,41263	$\times \Delta T$	1,2893
TUB4-070/29D50	3118	1614	1,2893	50	20,10594	$\phi =$	20,10594	$\times \Delta T$	1,2893
TUB4-070/30D50	3225	1669	1,2893	50	20,79925	$\phi =$	20,79925	$\times \Delta T$	1,2893
TUB4-070/31D50	3333	1725	1,2893	50	21,49256	$\phi =$	21,49256	$\times \Delta T$	1,2893
TUB4-070/32D50	3440	1780	1,2893	50	22,18587	$\phi =$	22,18587	$\times \Delta T$	1,2893
TUB4-070/33D50	3548	1836	1,2893	50	22,87918	$\phi =$	22,87918	$\times \Delta T$	1,2893
TUB4-070/34D50	3655	1892	1,2893	50	23,57248	$\phi =$	23,57248	$\times \Delta T$	1,2893
TUB4-070/35D50	3763	1947	1,2893	50	24,26579	$\phi =$	24,26579	$\times \Delta T$	1,2893
TUB4-070/36D50	3870	2003	1,2893	50	24,95910	$\phi =$	24,95910	$\times \Delta T$	1,2893
TUB4-070/37D50	3978	2059	1,2893	50	25,65241	$\phi =$	25,65241	$\times \Delta T$	1,2893
TUB4-070/38D50	4085	2114	1,2893	50	26,34572	$\phi =$	26,34572	$\times \Delta T$	1,2893
TUB4-070/39D50	4193	2170	1,2893	50	27,03903	$\phi =$	27,03903	$\times \Delta T$	1,2893
TUB4-070/40D50	4300	2226	1,2893	50	27,73233	$\phi =$	27,73233	$\times \Delta T$	1,2893
TUB4-070/41D50	4408	2281	1,2893	50	28,42564	$\phi =$	28,42564	$\times \Delta T$	1,2893
TUB4-070/42D50	4515	2337	1,2893	50	29,11895	$\phi =$	29,11895	$\times \Delta T$	1,2893
TUB4-080/02D50	236	122	1,2920	50	1,50861	$\phi =$	1,50861	$\times \Delta T$	1,2920
TUB4-080/03D50	355	183	1,2920	50	2,26292	$\phi =$	2,26292	$\times \Delta T$	1,2920
TUB4-080/04D50	473	244	1,2920	50	3,01723	$\phi =$	3,01723	$\times \Delta T$	1,2920
TUB4-080/05D50	591	305	1,2920	50	3,77154	$\phi =$	3,77154	$\times \Delta T$	1,2920
TUB4-080/06D50	709	367	1,2920	50	4,52584	$\phi =$	4,52584	$\times \Delta T$	1,2920
TUB4-080/07D50	827	428	1,2920	50	5,28015	$\phi =$	5,28015	$\times \Delta T$	1,2920
TUB4-080/08D50	946	489	1,2920	50	6,03446	$\phi =$	6,03446	$\times \Delta T$	1,2920
TUB4-080/09D50	1064	550	1,2920	50	6,78876	$\phi =$	6,78876	$\times \Delta T$	1,2920
TUB4-080/10D50	1182	611	1,2920	50	7,54307	$\phi =$	7,54307	$\times \Delta T$	1,2920
TUB4-080/11D50	1300	672	1,2920	50	8,29738	$\phi =$	8,29738	$\times \Delta T$	1,2920
TUB4-080/12D50	1418	733	1,2920	50	9,05169	$\phi =$	9,05169	$\times \Delta T$	1,2920
TUB4-080/13D50	1537	794	1,2920	50	9,80599	$\phi =$	9,80599	$\times \Delta T$	1,2920
TUB4-080/14D50	1655	855	1,2920	50	10,56030	$\phi =$	10,56030	$\times \Delta T$	1,2920
TUB4-080/15D50	1773	916	1,2920	50	11,31461	$\phi =$	11,31461	$\times \Delta T$	1,2920
TUB4-080/16D50	1891	977	1,2920	50	12,06891	$\phi =$	12,06891	$\times \Delta T$	1,2920
TUB4-080/17D50	2009	1039	1,2920	50	12,82322	$\phi =$	12,82322	$\times \Delta T$	1,2920

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

TUB4-080/18D50	2128	1100	1,2920	50	13,57753	$\phi =$	13,57753	$\times \Delta T$	1,2920
TUB4-080/19D50	2246	1161	1,2920	50	14,33184	$\phi =$	14,33184	$\times \Delta T$	1,2920
TUB4-080/20D50	2364	1222	1,2920	50	15,08614	$\phi =$	15,08614	$\times \Delta T$	1,2920
TUB4-080/21D50	2482	1283	1,2920	50	15,84045	$\phi =$	15,84045	$\times \Delta T$	1,2920
TUB4-080/22D50	2600	1344	1,2920	50	16,59476	$\phi =$	16,59476	$\times \Delta T$	1,2920
TUB4-080/23D50	2719	1405	1,2920	50	17,34906	$\phi =$	17,34906	$\times \Delta T$	1,2920
TUB4-080/24D50	2837	1466	1,2920	50	18,10337	$\phi =$	18,10337	$\times \Delta T$	1,2920
TUB4-080/25D50	2955	1527	1,2920	50	18,85768	$\phi =$	18,85768	$\times \Delta T$	1,2920
TUB4-080/26D50	3073	1588	1,2920	50	19,61199	$\phi =$	19,61199	$\times \Delta T$	1,2920
TUB4-080/27D50	3191	1650	1,2920	50	20,36629	$\phi =$	20,36629	$\times \Delta T$	1,2920
TUB4-080/28D50	3310	1711	1,2920	50	21,12060	$\phi =$	21,12060	$\times \Delta T$	1,2920
TUB4-080/29D50	3428	1772	1,2920	50	21,87491	$\phi =$	21,87491	$\times \Delta T$	1,2920
TUB4-080/30D50	3546	1833	1,2920	50	22,62921	$\phi =$	22,62921	$\times \Delta T$	1,2920
TUB4-080/31D50	3664	1894	1,2920	50	23,38352	$\phi =$	23,38352	$\times \Delta T$	1,2920
TUB4-080/32D50	3782	1955	1,2920	50	24,13783	$\phi =$	24,13783	$\times \Delta T$	1,2920
TUB4-080/33D50	3901	2016	1,2920	50	24,89214	$\phi =$	24,89214	$\times \Delta T$	1,2920
TUB4-080/34D50	4019	2077	1,2920	50	25,64644	$\phi =$	25,64644	$\times \Delta T$	1,2920
TUB4-080/35D50	4137	2138	1,2920	50	26,40075	$\phi =$	26,40075	$\times \Delta T$	1,2920
TUB4-080/36D50	4255	2199	1,2920	50	27,15506	$\phi =$	27,15506	$\times \Delta T$	1,2920
TUB4-080/37D50	4373	2260	1,2920	50	27,90936	$\phi =$	27,90936	$\times \Delta T$	1,2920
TUB4-090/02D50	253	131	1,2944	50	1,60073	$\phi =$	1,60073	$\times \Delta T$	1,2944
TUB4-090/03D50	380	196	1,2944	50	2,40109	$\phi =$	2,40109	$\times \Delta T$	1,2944
TUB4-090/04D50	506	261	1,2944	50	3,20145	$\phi =$	3,20145	$\times \Delta T$	1,2944
TUB4-090/05D50	633	327	1,2944	50	4,00181	$\phi =$	4,00181	$\times \Delta T$	1,2944
TUB4-090/06D50	760	392	1,2944	50	4,80218	$\phi =$	4,80218	$\times \Delta T$	1,2944
TUB4-090/07D50	886	457	1,2944	50	5,60254	$\phi =$	5,60254	$\times \Delta T$	1,2944
TUB4-090/08D50	1013	523	1,2944	50	6,40290	$\phi =$	6,40290	$\times \Delta T$	1,2944
TUB4-090/09D50	1139	588	1,2944	50	7,20327	$\phi =$	7,20327	$\times \Delta T$	1,2944
TUB4-090/10D50	1266	654	1,2944	50	8,00363	$\phi =$	8,00363	$\times \Delta T$	1,2944
TUB4-090/11D50	1393	719	1,2944	50	8,80399	$\phi =$	8,80399	$\times \Delta T$	1,2944
TUB4-090/12D50	1519	784	1,2944	50	9,60435	$\phi =$	9,60435	$\times \Delta T$	1,2944
TUB4-090/13D50	1646	850	1,2944	50	10,40472	$\phi =$	10,40472	$\times \Delta T$	1,2944
TUB4-090/14D50	1772	915	1,2944	50	11,20508	$\phi =$	11,20508	$\times \Delta T$	1,2944
TUB4-090/15D50	1899	980	1,2944	50	12,00544	$\phi =$	12,00544	$\times \Delta T$	1,2944
TUB4-090/16D50	2026	1046	1,2944	50	12,80581	$\phi =$	12,80581	$\times \Delta T$	1,2944
TUB4-090/17D50	2152	1111	1,2944	50	13,60617	$\phi =$	13,60617	$\times \Delta T$	1,2944
TUB4-090/18D50	2279	1176	1,2944	50	14,40653	$\phi =$	14,40653	$\times \Delta T$	1,2944
TUB4-090/19D50	2405	1242	1,2944	50	15,20689	$\phi =$	15,20689	$\times \Delta T$	1,2944
TUB4-090/20D50	2532	1307	1,2944	50	16,00726	$\phi =$	16,00726	$\times \Delta T$	1,2944
TUB4-090/21D50	2659	1372	1,2944	50	16,80762	$\phi =$	16,80762	$\times \Delta T$	1,2944
TUB4-090/22D50	2785	1438	1,2944	50	17,60798	$\phi =$	17,60798	$\times \Delta T$	1,2944
TUB4-090/23D50	2912	1503	1,2944	50	18,40835	$\phi =$	18,40835	$\times \Delta T$	1,2944
TUB4-090/24D50	3038	1568	1,2944	50	19,20871	$\phi =$	19,20871	$\times \Delta T$	1,2944
TUB4-090/25D50	3165	1634	1,2944	50	20,00907	$\phi =$	20,00907	$\times \Delta T$	1,2944
TUB4-090/26D50	3292	1699	1,2944	50	20,80943	$\phi =$	20,80943	$\times \Delta T$	1,2944
TUB4-090/27D50	3418	1765	1,2944	50	21,60980	$\phi =$	21,60980	$\times \Delta T$	1,2944
TUB4-090/28D50	3545	1830	1,2944	50	22,41016	$\phi =$	22,41016	$\times \Delta T$	1,2944
TUB4-090/29D50	3671	1895	1,2944	50	23,21052	$\phi =$	23,21052	$\times \Delta T$	1,2944
TUB4-090/30D50	3798	1961	1,2944	50	24,01089	$\phi =$	24,01089	$\times \Delta T$	1,2944
TUB4-090/31D50	3925	2026	1,2944	50	24,81125	$\phi =$	24,81125	$\times \Delta T$	1,2944
TUB4-090/32D50	4051	2091	1,2944	50	25,61161	$\phi =$	25,61161	$\times \Delta T$	1,2944
TUB4-090/33D50	4178	2157	1,2944	50	26,41197	$\phi =$	26,41197	$\times \Delta T$	1,2944
TUB4-100/02D50	266	137	1,2966	50	1,66849	$\phi =$	1,66849	$\times \Delta T$	1,2966
TUB4-100/03D50	399	206	1,2966	50	2,50273	$\phi =$	2,50273	$\times \Delta T$	1,2966
TUB4-100/04D50	532	275	1,2966	50	3,33698	$\phi =$	3,33698	$\times \Delta T$	1,2966
TUB4-100/05D50	666	343	1,2966	50	4,17122	$\phi =$	4,17122	$\times \Delta T$	1,2966
TUB4-100/06D50	799	412	1,2966	50	5,00547	$\phi =$	5,00547	$\times \Delta T$	1,2966
TUB4-100/07D50	932	480	1,2966	50	5,83971	$\phi =$	5,83971	$\times \Delta T$	1,2966
TUB4-100/08D50	1065	549	1,2966	50	6,67396	$\phi =$	6,67396	$\times \Delta T$	1,2966
TUB4-100/09D50	1198	618	1,2966	50	7,50820	$\phi =$	7,50820	$\times \Delta T$	1,2966
TUB4-100/10D50	1331	686	1,2966	50	8,34245	$\phi =$	8,34245	$\times \Delta T$	1,2966
TUB4-100/11D50	1464	755	1,2966	50	9,17669	$\phi =$	9,17669	$\times \Delta T$	1,2966
TUB4-100/12D50	1597	824	1,2966	50	10,01094	$\phi =$	10,01094	$\times \Delta T$	1,2966
TUB4-100/13D50	1730	892	1,2966	50	10,84518	$\phi =$	10,84518	$\times \Delta T$	1,2966
TUB4-100/14D50	1863	961	1,2966	50	11,67943	$\phi =$	11,67943	$\times \Delta T$	1,2966

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

TUB4-100/15D50	1997	1029	1,2966	50	12,51367	$\phi =$	12,51367	x ΔT	1,2966
TUB4-100/16D50	2130	1098	1,2966	50	13,34792	$\phi =$	13,34792	x ΔT	1,2966
TUB4-100/17D50	2263	1167	1,2966	50	14,18216	$\phi =$	14,18216	x ΔT	1,2966
TUB4-100/18D50	2396	1235	1,2966	50	15,01641	$\phi =$	15,01641	x ΔT	1,2966
TUB4-100/19D50	2529	1304	1,2966	50	15,85065	$\phi =$	15,85065	x ΔT	1,2966
TUB4-100/20D50	2662	1373	1,2966	50	16,68490	$\phi =$	16,68490	x ΔT	1,2966
TUB4-100/21D50	2795	1441	1,2966	50	17,51914	$\phi =$	17,51914	x ΔT	1,2966
TUB4-100/22D50	2928	1510	1,2966	50	18,35339	$\phi =$	18,35339	x ΔT	1,2966
TUB4-100/23D50	3061	1579	1,2966	50	19,18763	$\phi =$	19,18763	x ΔT	1,2966
TUB4-100/24D50	3194	1647	1,2966	50	20,02188	$\phi =$	20,02188	x ΔT	1,2966
TUB4-100/25D50	3328	1716	1,2966	50	20,85612	$\phi =$	20,85612	x ΔT	1,2966
TUB4-100/26D50	3461	1784	1,2966	50	21,69037	$\phi =$	21,69037	x ΔT	1,2966
TUB4-100/27D50	3594	1853	1,2966	50	22,52461	$\phi =$	22,52461	x ΔT	1,2966
TUB4-100/28D50	3727	1922	1,2966	50	23,35886	$\phi =$	23,35886	x ΔT	1,2966
TUB4-100/29D50	3860	1990	1,2966	50	24,19310	$\phi =$	24,19310	x ΔT	1,2966
TUB4-100/30D50	3993	2059	1,2966	50	25,02735	$\phi =$	25,02735	x ΔT	1,2966

W imieniu producenta podpisat:

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

Z-ca Prezesa ds. realizacji

Bartosz Ścierzyński

Nowa Wieś 03.03.2023

Bartosz Ścierzyński
Bartosz Ścierzyński
 Członek Zarządu

INSTAL PROJEKT sp. z o.o.

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