

DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH
(DECLARATION OF PERFORMANCE)

Nr (No.) **NDWU/1/TUBUS 4 D50P/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.)		

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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)			
TUB4-030/02D50P	91	47	1,2720	50	0,62523	$\phi =$	0,62523	x ΔT	1,2720
TUB4-030/03D50P	136	71	1,2720	50	0,93784	$\phi =$	0,93784	x ΔT	1,2720
TUB4-030/04D50P	181	95	1,2720	50	1,25046	$\phi =$	1,25046	x ΔT	1,2720
TUB4-030/05D50P	227	118	1,2720	50	1,56307	$\phi =$	1,56307	x ΔT	1,2720
TUB4-030/06D50P	272	142	1,2720	50	1,87568	$\phi =$	1,87568	x ΔT	1,2720
TUB4-030/07D50P	317	166	1,2720	50	2,18830	$\phi =$	2,18830	x ΔT	1,2720
TUB4-030/08D50P	362	189	1,2720	50	2,50091	$\phi =$	2,50091	x ΔT	1,2720
TUB4-030/09D50P	408	213	1,2720	50	2,81353	$\phi =$	2,81353	x ΔT	1,2720
TUB4-030/10D50P	453	237	1,2720	50	3,12614	$\phi =$	3,12614	x ΔT	1,2720
TUB4-030/11D50P	498	260	1,2720	50	3,43875	$\phi =$	3,43875	x ΔT	1,2720
TUB4-030/12D50P	544	284	1,2720	50	3,75137	$\phi =$	3,75137	x ΔT	1,2720
TUB4-030/13D50P	589	308	1,2720	50	4,06398	$\phi =$	4,06398	x ΔT	1,2720
TUB4-030/14D50P	634	331	1,2720	50	4,37660	$\phi =$	4,37660	x ΔT	1,2720
TUB4-030/15D50P	680	355	1,2720	50	4,68921	$\phi =$	4,68921	x ΔT	1,2720
TUB4-030/16D50P	725	378	1,2720	50	5,00182	$\phi =$	5,00182	x ΔT	1,2720
TUB4-030/17D50P	770	402	1,2720	50	5,31444	$\phi =$	5,31444	x ΔT	1,2720
TUB4-030/18D50P	815	426	1,2720	50	5,62705	$\phi =$	5,62705	x ΔT	1,2720
TUB4-030/19D50P	861	449	1,2720	50	5,93967	$\phi =$	5,93967	x ΔT	1,2720
TUB4-030/20D50P	906	473	1,2720	50	6,25228	$\phi =$	6,25228	x ΔT	1,2720
TUB4-030/21D50P	951	497	1,2720	50	6,56489	$\phi =$	6,56489	x ΔT	1,2720
TUB4-030/22D50P	997	520	1,2720	50	6,87751	$\phi =$	6,87751	x ΔT	1,2720
TUB4-030/23D50P	1042	544	1,2720	50	7,19012	$\phi =$	7,19012	x ΔT	1,2720
TUB4-030/24D50P	1087	568	1,2720	50	7,50273	$\phi =$	7,50273	x ΔT	1,2720
TUB4-030/25D50P	1133	591	1,2720	50	7,81535	$\phi =$	7,81535	x ΔT	1,2720
TUB4-030/26D50P	1178	615	1,2720	50	8,12796	$\phi =$	8,12796	x ΔT	1,2720
TUB4-030/27D50P	1223	639	1,2720	50	8,44058	$\phi =$	8,44058	x ΔT	1,2720
TUB4-030/28D50P	1268	662	1,2720	50	8,75319	$\phi =$	8,75319	x ΔT	1,2720
TUB4-030/29D50P	1314	686	1,2720	50	9,06580	$\phi =$	9,06580	x ΔT	1,2720
TUB4-030/30D50P	1359	710	1,2720	50	9,37842	$\phi =$	9,37842	x ΔT	1,2720
TUB4-030/31D50P	1404	733	1,2720	50	9,69103	$\phi =$	9,69103	x ΔT	1,2720
TUB4-030/32D50P	1450	757	1,2720	50	10,00365	$\phi =$	10,00365	x ΔT	1,2720
TUB4-030/33D50P	1495	781	1,2720	50	10,31626	$\phi =$	10,31626	x ΔT	1,2720
TUB4-030/34D50P	1540	804	1,2720	50	10,62887	$\phi =$	10,62887	x ΔT	1,2720
TUB4-030/35D50P	1586	828	1,2720	50	10,94149	$\phi =$	10,94149	x ΔT	1,2720
TUB4-030/36D50P	1631	852	1,2720	50	11,25410	$\phi =$	11,25410	x ΔT	1,2720
TUB4-030/37D50P	1676	875	1,2720	50	11,56672	$\phi =$	11,56672	x ΔT	1,2720
TUB4-030/38D50P	1721	899	1,2720	50	11,87933	$\phi =$	11,87933	x ΔT	1,2720
TUB4-030/39D50P	1767	923	1,2720	50	12,19194	$\phi =$	12,19194	x ΔT	1,2720
TUB4-030/40D50P	1812	946	1,2720	50	12,50456	$\phi =$	12,50456	x ΔT	1,2720
TUB4-030/41D50P	1857	970	1,2720	50	12,81717	$\phi =$	12,81717	x ΔT	1,2720
TUB4-030/42D50P	1903	993	1,2720	50	13,12979	$\phi =$	13,12979	x ΔT	1,2720
TUB4-030/43D50P	1948	1017	1,2720	50	13,44240	$\phi =$	13,44240	x ΔT	1,2720
TUB4-030/44D50P	1993	1041	1,2720	50	13,75501	$\phi =$	13,75501	x ΔT	1,2720
TUB4-030/45D50P	2039	1064	1,2720	50	14,06763	$\phi =$	14,06763	x ΔT	1,2720
TUB4-040/02D50P	127	66	1,2779	50	0,85777	$\phi =$	0,85777	x ΔT	1,2779
TUB4-040/03D50P	191	99	1,2779	50	1,28666	$\phi =$	1,28666	x ΔT	1,2779
TUB4-040/04D50P	254	132	1,2779	50	1,71555	$\phi =$	1,71555	x ΔT	1,2779
TUB4-040/05D50P	318	166	1,2779	50	2,14444	$\phi =$	2,14444	x ΔT	1,2779
TUB4-040/06D50P	382	199	1,2779	50	2,57332	$\phi =$	2,57332	x ΔT	1,2779
TUB4-040/07D50P	445	232	1,2779	50	3,00221	$\phi =$	3,00221	x ΔT	1,2779
TUB4-040/08D50P	509	265	1,2779	50	3,43110	$\phi =$	3,43110	x ΔT	1,2779
TUB4-040/09D50P	572	298	1,2779	50	3,85999	$\phi =$	3,85999	x ΔT	1,2779
TUB4-040/10D50P	636	331	1,2779	50	4,28887	$\phi =$	4,28887	x ΔT	1,2779
TUB4-040/11D50P	700	364	1,2779	50	4,71776	$\phi =$	4,71776	x ΔT	1,2779
TUB4-040/12D50P	763	397	1,2779	50	5,14665	$\phi =$	5,14665	x ΔT	1,2779
TUB4-040/13D50P	827	430	1,2779	50	5,57554	$\phi =$	5,57554	x ΔT	1,2779
TUB4-040/14D50P	890	464	1,2779	50	6,00442	$\phi =$	6,00442	x ΔT	1,2779
TUB4-040/15D50P	954	497	1,2779	50	6,43331	$\phi =$	6,43331	x ΔT	1,2779
TUB4-040/16D50P	1018	530	1,2779	50	6,86220	$\phi =$	6,86220	x ΔT	1,2779

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TUB4-040/17D50P	1081	563	1,2779	50	7,29109	$\phi =$	7,29109	$\times \Delta T$	1,2779
TUB4-040/18D50P	1145	596	1,2779	50	7,71997	$\phi =$	7,71997	$\times \Delta T$	1,2779
TUB4-040/19D50P	1208	629	1,2779	50	8,14886	$\phi =$	8,14886	$\times \Delta T$	1,2779
TUB4-040/20D50P	1272	662	1,2779	50	8,57775	$\phi =$	8,57775	$\times \Delta T$	1,2779
TUB4-040/21D50P	1336	695	1,2779	50	9,00664	$\phi =$	9,00664	$\times \Delta T$	1,2779
TUB4-040/22D50P	1399	728	1,2779	50	9,43552	$\phi =$	9,43552	$\times \Delta T$	1,2779
TUB4-040/23D50P	1463	762	1,2779	50	9,86441	$\phi =$	9,86441	$\times \Delta T$	1,2779
TUB4-040/24D50P	1526	795	1,2779	50	10,29330	$\phi =$	10,29330	$\times \Delta T$	1,2779
TUB4-040/25D50P	1590	828	1,2779	50	10,72219	$\phi =$	10,72219	$\times \Delta T$	1,2779
TUB4-040/26D50P	1654	861	1,2779	50	11,15107	$\phi =$	11,15107	$\times \Delta T$	1,2779
TUB4-040/27D50P	1717	894	1,2779	50	11,57996	$\phi =$	11,57996	$\times \Delta T$	1,2779
TUB4-040/28D50P	1781	927	1,2779	50	12,00885	$\phi =$	12,00885	$\times \Delta T$	1,2779
TUB4-040/29D50P	1844	960	1,2779	50	12,43774	$\phi =$	12,43774	$\times \Delta T$	1,2779
TUB4-040/30D50P	1908	993	1,2779	50	12,86662	$\phi =$	12,86662	$\times \Delta T$	1,2779
TUB4-040/31D50P	1972	1026	1,2779	50	13,29551	$\phi =$	13,29551	$\times \Delta T$	1,2779
TUB4-040/32D50P	2035	1060	1,2779	50	13,72440	$\phi =$	13,72440	$\times \Delta T$	1,2779
TUB4-040/33D50P	2099	1093	1,2779	50	14,15329	$\phi =$	14,15329	$\times \Delta T$	1,2779
TUB4-040/34D50P	2162	1126	1,2779	50	14,58217	$\phi =$	14,58217	$\times \Delta T$	1,2779
TUB4-040/35D50P	2226	1159	1,2779	50	15,01106	$\phi =$	15,01106	$\times \Delta T$	1,2779
TUB4-040/36D50P	2290	1192	1,2779	50	15,43995	$\phi =$	15,43995	$\times \Delta T$	1,2779
TUB4-040/37D50P	2353	1225	1,2779	50	15,86884	$\phi =$	15,86884	$\times \Delta T$	1,2779
TUB4-040/38D50P	2417	1258	1,2779	50	16,29772	$\phi =$	16,29772	$\times \Delta T$	1,2779
TUB4-040/39D50P	2480	1291	1,2779	50	16,72661	$\phi =$	16,72661	$\times \Delta T$	1,2779
TUB4-040/40D50P	2544	1324	1,2779	50	17,15550	$\phi =$	17,15550	$\times \Delta T$	1,2779
TUB4-040/41D50P	2608	1358	1,2779	50	17,58439	$\phi =$	17,58439	$\times \Delta T$	1,2779
TUB4-040/42D50P	2671	1391	1,2779	50	18,01327	$\phi =$	18,01327	$\times \Delta T$	1,2779
TUB4-040/43D50P	2735	1424	1,2779	50	18,44216	$\phi =$	18,44216	$\times \Delta T$	1,2779
TUB4-040/44D50P	2798	1457	1,2779	50	18,87105	$\phi =$	18,87105	$\times \Delta T$	1,2779
TUB4-040/45D50P	2862	1490	1,2779	50	19,29994	$\phi =$	19,29994	$\times \Delta T$	1,2779
TUB4-050/02D50P	161	84	1,2824	50	1,06809	$\phi =$	1,06809	$\times \Delta T$	1,2824
TUB4-050/03D50P	242	126	1,2824	50	1,60213	$\phi =$	1,60213	$\times \Delta T$	1,2824
TUB4-050/04D50P	322	167	1,2824	50	2,13617	$\phi =$	2,13617	$\times \Delta T$	1,2824
TUB4-050/05D50P	403	209	1,2824	50	2,67021	$\phi =$	2,67021	$\times \Delta T$	1,2824
TUB4-050/06D50P	484	251	1,2824	50	3,20426	$\phi =$	3,20426	$\times \Delta T$	1,2824
TUB4-050/07D50P	564	293	1,2824	50	3,73830	$\phi =$	3,73830	$\times \Delta T$	1,2824
TUB4-050/08D50P	645	335	1,2824	50	4,27234	$\phi =$	4,27234	$\times \Delta T$	1,2824
TUB4-050/09D50P	725	377	1,2824	50	4,80638	$\phi =$	4,80638	$\times \Delta T$	1,2824
TUB4-050/10D50P	806	419	1,2824	50	5,34043	$\phi =$	5,34043	$\times \Delta T$	1,2824
TUB4-050/11D50P	887	460	1,2824	50	5,87447	$\phi =$	5,87447	$\times \Delta T$	1,2824
TUB4-050/12D50P	967	502	1,2824	50	6,40851	$\phi =$	6,40851	$\times \Delta T$	1,2824
TUB4-050/13D50P	1048	544	1,2824	50	6,94255	$\phi =$	6,94255	$\times \Delta T$	1,2824
TUB4-050/14D50P	1128	586	1,2824	50	7,47660	$\phi =$	7,47660	$\times \Delta T$	1,2824
TUB4-050/15D50P	1209	628	1,2824	50	8,01064	$\phi =$	8,01064	$\times \Delta T$	1,2824
TUB4-050/16D50P	1290	670	1,2824	50	8,54468	$\phi =$	8,54468	$\times \Delta T$	1,2824
TUB4-050/17D50P	1370	712	1,2824	50	9,07872	$\phi =$	9,07872	$\times \Delta T$	1,2824
TUB4-050/18D50P	1451	754	1,2824	50	9,61277	$\phi =$	9,61277	$\times \Delta T$	1,2824
TUB4-050/19D50P	1531	795	1,2824	50	10,14681	$\phi =$	10,14681	$\times \Delta T$	1,2824
TUB4-050/20D50P	1612	837	1,2824	50	10,68085	$\phi =$	10,68085	$\times \Delta T$	1,2824
TUB4-050/21D50P	1693	879	1,2824	50	11,21489	$\phi =$	11,21489	$\times \Delta T$	1,2824
TUB4-050/22D50P	1773	921	1,2824	50	11,74894	$\phi =$	11,74894	$\times \Delta T$	1,2824
TUB4-050/23D50P	1854	963	1,2824	50	12,28298	$\phi =$	12,28298	$\times \Delta T$	1,2824
TUB4-050/24D50P	1934	1005	1,2824	50	12,81702	$\phi =$	12,81702	$\times \Delta T$	1,2824
TUB4-050/25D50P	2015	1047	1,2824	50	13,35107	$\phi =$	13,35107	$\times \Delta T$	1,2824
TUB4-050/26D50P	2096	1088	1,2824	50	13,88511	$\phi =$	13,88511	$\times \Delta T$	1,2824
TUB4-050/27D50P	2176	1130	1,2824	50	14,41915	$\phi =$	14,41915	$\times \Delta T$	1,2824
TUB4-050/28D50P	2257	1172	1,2824	50	14,95319	$\phi =$	14,95319	$\times \Delta T$	1,2824
TUB4-050/29D50P	2337	1214	1,2824	50	15,48724	$\phi =$	15,48724	$\times \Delta T$	1,2824
TUB4-050/30D50P	2418	1256	1,2824	50	16,02128	$\phi =$	16,02128	$\times \Delta T$	1,2824
TUB4-050/31D50P	2499	1298	1,2824	50	16,55532	$\phi =$	16,55532	$\times \Delta T$	1,2824
TUB4-050/32D50P	2579	1340	1,2824	50	17,08936	$\phi =$	17,08936	$\times \Delta T$	1,2824
TUB4-050/33D50P	2660	1381	1,2824	50	17,62341	$\phi =$	17,62341	$\times \Delta T$	1,2824
TUB4-050/34D50P	2740	1423	1,2824	50	18,15745	$\phi =$	18,15745	$\times \Delta T$	1,2824
TUB4-050/35D50P	2821	1465	1,2824	50	18,69149	$\phi =$	18,69149	$\times \Delta T$	1,2824
TUB4-050/36D50P	2902	1507	1,2824	50	19,22553	$\phi =$	19,22553	$\times \Delta T$	1,2824
TUB4-050/37D50P	2982	1549	1,2824	50	19,75958	$\phi =$	19,75958	$\times \Delta T$	1,2824

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TUB4-050/38D50P	3063	1591	1,2824	50	20,29362	$\phi =$	20,29362	$\times \Delta T$	1,2824
TUB4-050/39D50P	3143	1633	1,2824	50	20,82766	$\phi =$	20,82766	$\times \Delta T$	1,2824
TUB4-050/40D50P	3224	1675	1,2824	50	21,36170	$\phi =$	21,36170	$\times \Delta T$	1,2824
TUB4-050/41D50P	3305	1716	1,2824	50	21,89575	$\phi =$	21,89575	$\times \Delta T$	1,2824
TUB4-050/42D50P	3385	1758	1,2824	50	22,42979	$\phi =$	22,42979	$\times \Delta T$	1,2824
TUB4-050/43D50P	3466	1800	1,2824	50	22,96383	$\phi =$	22,96383	$\times \Delta T$	1,2824
TUB4-050/44D50P	3546	1842	1,2824	50	23,49787	$\phi =$	23,49787	$\times \Delta T$	1,2824
TUB4-050/45D50P	3627	1884	1,2824	50	24,03192	$\phi =$	24,03192	$\times \Delta T$	1,2824
TUB4-070/02D50P	218	113	1,2893	50	1,40467	$\phi =$	1,40467	$\times \Delta T$	1,2893
TUB4-070/03D50P	327	169	1,2893	50	2,10701	$\phi =$	2,10701	$\times \Delta T$	1,2893
TUB4-070/04D50P	436	225	1,2893	50	2,80935	$\phi =$	2,80935	$\times \Delta T$	1,2893
TUB4-070/05D50P	545	282	1,2893	50	3,51169	$\phi =$	3,51169	$\times \Delta T$	1,2893
TUB4-070/06D50P	653	338	1,2893	50	4,21402	$\phi =$	4,21402	$\times \Delta T$	1,2893
TUB4-070/07D50P	762	395	1,2893	50	4,91636	$\phi =$	4,91636	$\times \Delta T$	1,2893
TUB4-070/08D50P	871	451	1,2893	50	5,61870	$\phi =$	5,61870	$\times \Delta T$	1,2893
TUB4-070/09D50P	980	507	1,2893	50	6,32104	$\phi =$	6,32104	$\times \Delta T$	1,2893
TUB4-070/10D50P	1089	564	1,2893	50	7,02337	$\phi =$	7,02337	$\times \Delta T$	1,2893
TUB4-070/11D50P	1198	620	1,2893	50	7,72571	$\phi =$	7,72571	$\times \Delta T$	1,2893
TUB4-070/12D50P	1307	676	1,2893	50	8,42805	$\phi =$	8,42805	$\times \Delta T$	1,2893
TUB4-070/13D50P	1416	733	1,2893	50	9,13039	$\phi =$	9,13039	$\times \Delta T$	1,2893
TUB4-070/14D50P	1525	789	1,2893	50	9,83272	$\phi =$	9,83272	$\times \Delta T$	1,2893
TUB4-070/15D50P	1634	845	1,2893	50	10,53506	$\phi =$	10,53506	$\times \Delta T$	1,2893
TUB4-070/16D50P	1742	902	1,2893	50	11,23740	$\phi =$	11,23740	$\times \Delta T$	1,2893
TUB4-070/17D50P	1851	958	1,2893	50	11,93974	$\phi =$	11,93974	$\times \Delta T$	1,2893
TUB4-070/18D50P	1960	1015	1,2893	50	12,64207	$\phi =$	12,64207	$\times \Delta T$	1,2893
TUB4-070/19D50P	2069	1071	1,2893	50	13,34441	$\phi =$	13,34441	$\times \Delta T$	1,2893
TUB4-070/20D50P	2178	1127	1,2893	50	14,04675	$\phi =$	14,04675	$\times \Delta T$	1,2893
TUB4-070/21D50P	2287	1184	1,2893	50	14,74909	$\phi =$	14,74909	$\times \Delta T$	1,2893
TUB4-070/22D50P	2396	1240	1,2893	50	15,45142	$\phi =$	15,45142	$\times \Delta T$	1,2893
TUB4-070/23D50P	2505	1296	1,2893	50	16,15376	$\phi =$	16,15376	$\times \Delta T$	1,2893
TUB4-070/24D50P	2614	1353	1,2893	50	16,85610	$\phi =$	16,85610	$\times \Delta T$	1,2893
TUB4-070/25D50P	2723	1409	1,2893	50	17,55844	$\phi =$	17,55844	$\times \Delta T$	1,2893
TUB4-070/26D50P	2831	1465	1,2893	50	18,26077	$\phi =$	18,26077	$\times \Delta T$	1,2893
TUB4-070/27D50P	2940	1522	1,2893	50	18,96311	$\phi =$	18,96311	$\times \Delta T$	1,2893
TUB4-070/28D50P	3049	1578	1,2893	50	19,66545	$\phi =$	19,66545	$\times \Delta T$	1,2893
TUB4-070/29D50P	3158	1635	1,2893	50	20,36779	$\phi =$	20,36779	$\times \Delta T$	1,2893
TUB4-070/30D50P	3267	1691	1,2893	50	21,07012	$\phi =$	21,07012	$\times \Delta T$	1,2893
TUB4-070/31D50P	3376	1747	1,2893	50	21,77246	$\phi =$	21,77246	$\times \Delta T$	1,2893
TUB4-070/32D50P	3485	1804	1,2893	50	22,47480	$\phi =$	22,47480	$\times \Delta T$	1,2893
TUB4-070/33D50P	3594	1860	1,2893	50	23,17714	$\phi =$	23,17714	$\times \Delta T$	1,2893
TUB4-070/34D50P	3703	1916	1,2893	50	23,87947	$\phi =$	23,87947	$\times \Delta T$	1,2893
TUB4-070/35D50P	3812	1973	1,2893	50	24,58181	$\phi =$	24,58181	$\times \Delta T$	1,2893
TUB4-070/36D50P	3920	2029	1,2893	50	25,28415	$\phi =$	25,28415	$\times \Delta T$	1,2893
TUB4-070/37D50P	4029	2085	1,2893	50	25,98649	$\phi =$	25,98649	$\times \Delta T$	1,2893
TUB4-070/38D50P	4138	2142	1,2893	50	26,68882	$\phi =$	26,68882	$\times \Delta T$	1,2893
TUB4-070/39D50P	4247	2198	1,2893	50	27,39116	$\phi =$	27,39116	$\times \Delta T$	1,2893
TUB4-070/40D50P	4356	2255	1,2893	50	28,09350	$\phi =$	28,09350	$\times \Delta T$	1,2893
TUB4-070/41D50P	4465	2311	1,2893	50	28,79584	$\phi =$	28,79584	$\times \Delta T$	1,2893
TUB4-070/42D50P	4574	2367	1,2893	50	29,49817	$\phi =$	29,49817	$\times \Delta T$	1,2893
TUB4-080/02D50P	240	124	1,2920	50	1,53031	$\phi =$	1,53031	$\times \Delta T$	1,2920
TUB4-080/03D50P	360	186	1,2920	50	2,29547	$\phi =$	2,29547	$\times \Delta T$	1,2920
TUB4-080/04D50P	480	248	1,2920	50	3,06062	$\phi =$	3,06062	$\times \Delta T$	1,2920
TUB4-080/05D50P	600	310	1,2920	50	3,82578	$\phi =$	3,82578	$\times \Delta T$	1,2920
TUB4-080/06D50P	719	372	1,2920	50	4,59094	$\phi =$	4,59094	$\times \Delta T$	1,2920
TUB4-080/07D50P	839	434	1,2920	50	5,35609	$\phi =$	5,35609	$\times \Delta T$	1,2920
TUB4-080/08D50P	959	496	1,2920	50	6,12125	$\phi =$	6,12125	$\times \Delta T$	1,2920
TUB4-080/09D50P	1079	558	1,2920	50	6,88640	$\phi =$	6,88640	$\times \Delta T$	1,2920
TUB4-080/10D50P	1199	620	1,2920	50	7,65156	$\phi =$	7,65156	$\times \Delta T$	1,2920
TUB4-080/11D50P	1319	682	1,2920	50	8,41672	$\phi =$	8,41672	$\times \Delta T$	1,2920
TUB4-080/12D50P	1439	744	1,2920	50	9,18187	$\phi =$	9,18187	$\times \Delta T$	1,2920
TUB4-080/13D50P	1559	806	1,2920	50	9,94703	$\phi =$	9,94703	$\times \Delta T$	1,2920
TUB4-080/14D50P	1679	868	1,2920	50	10,71218	$\phi =$	10,71218	$\times \Delta T$	1,2920
TUB4-080/15D50P	1799	930	1,2920	50	11,47734	$\phi =$	11,47734	$\times \Delta T$	1,2920
TUB4-080/16D50P	1918	992	1,2920	50	12,24249	$\phi =$	12,24249	$\times \Delta T$	1,2920
TUB4-080/17D50P	2038	1054	1,2920	50	13,00765	$\phi =$	13,00765	$\times \Delta T$	1,2920

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TUB4-080/18D50P	2158	1115	1,2920	50	13,77281	$\phi =$	13,77281	$\times \Delta T$	1,2920
TUB4-080/19D50P	2278	1177	1,2920	50	14,53796	$\phi =$	14,53796	$\times \Delta T$	1,2920
TUB4-080/20D50P	2398	1239	1,2920	50	15,30312	$\phi =$	15,30312	$\times \Delta T$	1,2920
TUB4-080/21D50P	2518	1301	1,2920	50	16,06827	$\phi =$	16,06827	$\times \Delta T$	1,2920
TUB4-080/22D50P	2638	1363	1,2920	50	16,83343	$\phi =$	16,83343	$\times \Delta T$	1,2920
TUB4-080/23D50P	2758	1425	1,2920	50	17,59859	$\phi =$	17,59859	$\times \Delta T$	1,2920
TUB4-080/24D50P	2878	1487	1,2920	50	18,36374	$\phi =$	18,36374	$\times \Delta T$	1,2920
TUB4-080/25D50P	2998	1549	1,2920	50	19,12890	$\phi =$	19,12890	$\times \Delta T$	1,2920
TUB4-080/26D50P	3117	1611	1,2920	50	19,89405	$\phi =$	19,89405	$\times \Delta T$	1,2920
TUB4-080/27D50P	3237	1673	1,2920	50	20,65921	$\phi =$	20,65921	$\times \Delta T$	1,2920
TUB4-080/28D50P	3357	1735	1,2920	50	21,42437	$\phi =$	21,42437	$\times \Delta T$	1,2920
TUB4-080/29D50P	3477	1797	1,2920	50	22,18952	$\phi =$	22,18952	$\times \Delta T$	1,2920
TUB4-080/30D50P	3597	1859	1,2920	50	22,95468	$\phi =$	22,95468	$\times \Delta T$	1,2920
TUB4-080/31D50P	3717	1921	1,2920	50	23,71983	$\phi =$	23,71983	$\times \Delta T$	1,2920
TUB4-080/32D50P	3837	1983	1,2920	50	24,48499	$\phi =$	24,48499	$\times \Delta T$	1,2920
TUB4-080/33D50P	3957	2045	1,2920	50	25,25015	$\phi =$	25,25015	$\times \Delta T$	1,2920
TUB4-080/34D50P	4077	2107	1,2920	50	26,01530	$\phi =$	26,01530	$\times \Delta T$	1,2920
TUB4-080/35D50P	4197	2169	1,2920	50	26,78046	$\phi =$	26,78046	$\times \Delta T$	1,2920
TUB4-080/36D50P	4316	2231	1,2920	50	27,54561	$\phi =$	27,54561	$\times \Delta T$	1,2920
TUB4-080/37D50P	4436	2293	1,2920	50	28,31077	$\phi =$	28,31077	$\times \Delta T$	1,2920
TUB4-090/02D50P	257	133	1,2944	50	1,62728	$\phi =$	1,62728	$\times \Delta T$	1,2944
TUB4-090/03D50P	386	199	1,2944	50	2,44092	$\phi =$	2,44092	$\times \Delta T$	1,2944
TUB4-090/04D50P	515	266	1,2944	50	3,25456	$\phi =$	3,25456	$\times \Delta T$	1,2944
TUB4-090/05D50P	644	332	1,2944	50	4,06820	$\phi =$	4,06820	$\times \Delta T$	1,2944
TUB4-090/06D50P	772	399	1,2944	50	4,88183	$\phi =$	4,88183	$\times \Delta T$	1,2944
TUB4-090/07D50P	901	465	1,2944	50	5,69547	$\phi =$	5,69547	$\times \Delta T$	1,2944
TUB4-090/08D50P	1030	532	1,2944	50	6,50911	$\phi =$	6,50911	$\times \Delta T$	1,2944
TUB4-090/09D50P	1158	598	1,2944	50	7,32275	$\phi =$	7,32275	$\times \Delta T$	1,2944
TUB4-090/10D50P	1287	664	1,2944	50	8,13639	$\phi =$	8,13639	$\times \Delta T$	1,2944
TUB4-090/11D50P	1416	731	1,2944	50	8,95003	$\phi =$	8,95003	$\times \Delta T$	1,2944
TUB4-090/12D50P	1544	797	1,2944	50	9,76367	$\phi =$	9,76367	$\times \Delta T$	1,2944
TUB4-090/13D50P	1673	864	1,2944	50	10,57731	$\phi =$	10,57731	$\times \Delta T$	1,2944
TUB4-090/14D50P	1802	930	1,2944	50	11,39095	$\phi =$	11,39095	$\times \Delta T$	1,2944
TUB4-090/15D50P	1931	997	1,2944	50	12,20459	$\phi =$	12,20459	$\times \Delta T$	1,2944
TUB4-090/16D50P	2059	1063	1,2944	50	13,01822	$\phi =$	13,01822	$\times \Delta T$	1,2944
TUB4-090/17D50P	2188	1129	1,2944	50	13,83186	$\phi =$	13,83186	$\times \Delta T$	1,2944
TUB4-090/18D50P	2317	1196	1,2944	50	14,64550	$\phi =$	14,64550	$\times \Delta T$	1,2944
TUB4-090/19D50P	2445	1262	1,2944	50	15,45914	$\phi =$	15,45914	$\times \Delta T$	1,2944
TUB4-090/20D50P	2574	1329	1,2944	50	16,27278	$\phi =$	16,27278	$\times \Delta T$	1,2944
TUB4-090/21D50P	2703	1395	1,2944	50	17,08642	$\phi =$	17,08642	$\times \Delta T$	1,2944
TUB4-090/22D50P	2831	1462	1,2944	50	17,90006	$\phi =$	17,90006	$\times \Delta T$	1,2944
TUB4-090/23D50P	2960	1528	1,2944	50	18,71370	$\phi =$	18,71370	$\times \Delta T$	1,2944
TUB4-090/24D50P	3089	1595	1,2944	50	19,52734	$\phi =$	19,52734	$\times \Delta T$	1,2944
TUB4-090/25D50P	3218	1661	1,2944	50	20,34098	$\phi =$	20,34098	$\times \Delta T$	1,2944
TUB4-090/26D50P	3346	1727	1,2944	50	21,15461	$\phi =$	21,15461	$\times \Delta T$	1,2944
TUB4-090/27D50P	3475	1794	1,2944	50	21,96825	$\phi =$	21,96825	$\times \Delta T$	1,2944
TUB4-090/28D50P	3604	1860	1,2944	50	22,78189	$\phi =$	22,78189	$\times \Delta T$	1,2944
TUB4-090/29D50P	3732	1927	1,2944	50	23,59553	$\phi =$	23,59553	$\times \Delta T$	1,2944
TUB4-090/30D50P	3861	1993	1,2944	50	24,40917	$\phi =$	24,40917	$\times \Delta T$	1,2944
TUB4-090/31D50P	3990	2060	1,2944	50	25,22281	$\phi =$	25,22281	$\times \Delta T$	1,2944
TUB4-090/32D50P	4118	2126	1,2944	50	26,03645	$\phi =$	26,03645	$\times \Delta T$	1,2944
TUB4-090/33D50P	4247	2192	1,2944	50	26,85009	$\phi =$	26,85009	$\times \Delta T$	1,2944
TUB4-100/02D50P	271	140	1,2966	50	1,69858	$\phi =$	1,69858	$\times \Delta T$	1,2966
TUB4-100/03D50P	407	210	1,2966	50	2,54786	$\phi =$	2,54786	$\times \Delta T$	1,2966
TUB4-100/04D50P	542	279	1,2966	50	3,39715	$\phi =$	3,39715	$\times \Delta T$	1,2966
TUB4-100/05D50P	678	349	1,2966	50	4,24644	$\phi =$	4,24644	$\times \Delta T$	1,2966
TUB4-100/06D50P	813	419	1,2966	50	5,09573	$\phi =$	5,09573	$\times \Delta T$	1,2966
TUB4-100/07D50P	949	489	1,2966	50	5,94501	$\phi =$	5,94501	$\times \Delta T$	1,2966
TUB4-100/08D50P	1084	559	1,2966	50	6,79430	$\phi =$	6,79430	$\times \Delta T$	1,2966
TUB4-100/09D50P	1220	629	1,2966	50	7,64359	$\phi =$	7,64359	$\times \Delta T$	1,2966
TUB4-100/10D50P	1355	699	1,2966	50	8,49288	$\phi =$	8,49288	$\times \Delta T$	1,2966
TUB4-100/11D50P	1491	769	1,2966	50	9,34216	$\phi =$	9,34216	$\times \Delta T$	1,2966
TUB4-100/12D50P	1626	838	1,2966	50	10,19145	$\phi =$	10,19145	$\times \Delta T$	1,2966
TUB4-100/13D50P	1762	908	1,2966	50	11,04074	$\phi =$	11,04074	$\times \Delta T$	1,2966
TUB4-100/14D50P	1897	978	1,2966	50	11,89003	$\phi =$	11,89003	$\times \Delta T$	1,2966

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TUB4-100/15D50P	2033	1048	1,2966	50	12,73931	φ =	12,73931	x ΔT	1,2966
TUB4-100/16D50P	2168	1118	1,2966	50	13,58860	φ =	13,58860	x ΔT	1,2966
TUB4-100/17D50P	2304	1188	1,2966	50	14,43789	φ =	14,43789	x ΔT	1,2966
TUB4-100/18D50P	2439	1258	1,2966	50	15,28718	φ =	15,28718	x ΔT	1,2966
TUB4-100/19D50P	2575	1328	1,2966	50	16,13646	φ =	16,13646	x ΔT	1,2966
TUB4-100/20D50P	2710	1397	1,2966	50	16,98575	φ =	16,98575	x ΔT	1,2966
TUB4-100/21D50P	2846	1467	1,2966	50	17,83504	φ =	17,83504	x ΔT	1,2966
TUB4-100/22D50P	2981	1537	1,2966	50	18,68433	φ =	18,68433	x ΔT	1,2966
TUB4-100/23D50P	3117	1607	1,2966	50	19,53361	φ =	19,53361	x ΔT	1,2966
TUB4-100/24D50P	3252	1677	1,2966	50	20,38290	φ =	20,38290	x ΔT	1,2966
TUB4-100/25D50P	3388	1747	1,2966	50	21,23219	φ =	21,23219	x ΔT	1,2966
TUB4-100/26D50P	3523	1817	1,2966	50	22,08148	φ =	22,08148	x ΔT	1,2966
TUB4-100/27D50P	3659	1886	1,2966	50	22,93077	φ =	22,93077	x ΔT	1,2966
TUB4-100/28D50P	3794	1956	1,2966	50	23,78005	φ =	23,78005	x ΔT	1,2966
TUB4-100/29D50P	3930	2026	1,2966	50	24,62934	φ =	24,62934	x ΔT	1,2966
TUB4-100/30D50P	4065	2096	1,2966	50	25,47863	φ =	25,47863	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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(podpis)

(signature)