

DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH
(DECLARATION OF PERFORMANCE)

Nr (No.) **NDWU/1/TUBUS 2 D50/2021**

1. Niepowtarzalny kod identyfikacyjny typu wyrobu (Unique identification code of the product-type): TUBUS 2		
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)			
TUB2-020/02D50	24	13	1,2611	50	0,17572	$\phi =$	0,17572	x ΔT	1,2611
TUB2-020/03D50	37	19	1,2611	50	0,26358	$\phi =$	0,26358	x ΔT	1,2611
TUB2-020/04D50	49	26	1,2611	50	0,35144	$\phi =$	0,35144	x ΔT	1,2611
TUB2-020/05D50	61	32	1,2611	50	0,43930	$\phi =$	0,43930	x ΔT	1,2611
TUB2-020/06D50	73	38	1,2611	50	0,52716	$\phi =$	0,52716	x ΔT	1,2611
TUB2-020/07D50	85	45	1,2611	50	0,61502	$\phi =$	0,61502	x ΔT	1,2611
TUB2-020/08D50	98	51	1,2611	50	0,70288	$\phi =$	0,70288	x ΔT	1,2611
TUB2-020/09D50	110	58	1,2611	50	0,79074	$\phi =$	0,79074	x ΔT	1,2611
TUB2-020/10D50	122	64	1,2611	50	0,87860	$\phi =$	0,87860	x ΔT	1,2611
TUB2-020/11D50	134	70	1,2611	50	0,96645	$\phi =$	0,96645	x ΔT	1,2611
TUB2-020/12D50	146	77	1,2611	50	1,05431	$\phi =$	1,05431	x ΔT	1,2611
TUB2-020/13D50	159	83	1,2611	50	1,14217	$\phi =$	1,14217	x ΔT	1,2611
TUB2-020/14D50	171	90	1,2611	50	1,23003	$\phi =$	1,23003	x ΔT	1,2611
TUB2-020/15D50	183	96	1,2611	50	1,31789	$\phi =$	1,31789	x ΔT	1,2611
TUB2-020/16D50	195	102	1,2611	50	1,40575	$\phi =$	1,40575	x ΔT	1,2611
TUB2-020/17D50	207	109	1,2611	50	1,49361	$\phi =$	1,49361	x ΔT	1,2611
TUB2-020/18D50	220	115	1,2611	50	1,58147	$\phi =$	1,58147	x ΔT	1,2611
TUB2-020/19D50	232	122	1,2611	50	1,66933	$\phi =$	1,66933	x ΔT	1,2611
TUB2-020/20D50	244	128	1,2611	50	1,75719	$\phi =$	1,75719	x ΔT	1,2611
TUB2-020/21D50	256	135	1,2611	50	1,84505	$\phi =$	1,84505	x ΔT	1,2611
TUB2-020/22D50	268	141	1,2611	50	1,93291	$\phi =$	1,93291	x ΔT	1,2611
TUB2-020/23D50	281	147	1,2611	50	2,02077	$\phi =$	2,02077	x ΔT	1,2611
TUB2-020/24D50	293	154	1,2611	50	2,10863	$\phi =$	2,10863	x ΔT	1,2611
TUB2-020/25D50	305	160	1,2611	50	2,19649	$\phi =$	2,19649	x ΔT	1,2611
TUB2-020/26D50	317	167	1,2611	50	2,28435	$\phi =$	2,28435	x ΔT	1,2611
TUB2-020/27D50	329	173	1,2611	50	2,37221	$\phi =$	2,37221	x ΔT	1,2611
TUB2-020/28D50	342	179	1,2611	50	2,46007	$\phi =$	2,46007	x ΔT	1,2611
TUB2-020/29D50	354	186	1,2611	50	2,54793	$\phi =$	2,54793	x ΔT	1,2611
TUB2-020/30D50	366	192	1,2611	50	2,63579	$\phi =$	2,63579	x ΔT	1,2611
TUB2-020/31D50	378	199	1,2611	50	2,72364	$\phi =$	2,72364	x ΔT	1,2611
TUB2-020/32D50	390	205	1,2611	50	2,81150	$\phi =$	2,81150	x ΔT	1,2611
TUB2-020/33D50	403	211	1,2611	50	2,89936	$\phi =$	2,89936	x ΔT	1,2611
TUB2-020/34D50	415	218	1,2611	50	2,98722	$\phi =$	2,98722	x ΔT	1,2611
TUB2-020/35D50	427	224	1,2611	50	3,07508	$\phi =$	3,07508	x ΔT	1,2611
TUB2-020/36D50	439	231	1,2611	50	3,16294	$\phi =$	3,16294	x ΔT	1,2611
TUB2-020/37D50	451	237	1,2611	50	3,25080	$\phi =$	3,25080	x ΔT	1,2611
TUB2-020/38D50	464	243	1,2611	50	3,33866	$\phi =$	3,33866	x ΔT	1,2611
TUB2-020/39D50	476	250	1,2611	50	3,42652	$\phi =$	3,42652	x ΔT	1,2611
TUB2-020/40D50	488	256	1,2611	50	3,51438	$\phi =$	3,51438	x ΔT	1,2611
TUB2-020/41D50	500	263	1,2611	50	3,60224	$\phi =$	3,60224	x ΔT	1,2611
TUB2-020/42D50	512	269	1,2611	50	3,69010	$\phi =$	3,69010	x ΔT	1,2611
TUB2-020/43D50	525	275	1,2611	50	3,77796	$\phi =$	3,77796	x ΔT	1,2611
TUB2-020/44D50	537	282	1,2611	50	3,86582	$\phi =$	3,86582	x ΔT	1,2611
TUB2-020/45D50	549	288	1,2611	50	3,95368	$\phi =$	3,95368	x ΔT	1,2611
TUB2-030/02D50	40	21	1,2613	50	0,28496	$\phi =$	0,28496	x ΔT	1,2613
TUB2-030/03D50	59	31	1,2613	50	0,42744	$\phi =$	0,42744	x ΔT	1,2613
TUB2-030/04D50	79	42	1,2613	50	0,56992	$\phi =$	0,56992	x ΔT	1,2613
TUB2-030/05D50	99	52	1,2613	50	0,71240	$\phi =$	0,71240	x ΔT	1,2613
TUB2-030/06D50	119	62	1,2613	50	0,85488	$\phi =$	0,85488	x ΔT	1,2613
TUB2-030/07D50	139	73	1,2613	50	0,99736	$\phi =$	0,99736	x ΔT	1,2613
TUB2-030/08D50	158	83	1,2613	50	1,13984	$\phi =$	1,13984	x ΔT	1,2613
TUB2-030/09D50	178	94	1,2613	50	1,28232	$\phi =$	1,28232	x ΔT	1,2613
TUB2-030/10D50	198	104	1,2613	50	1,42480	$\phi =$	1,42480	x ΔT	1,2613
TUB2-030/11D50	218	114	1,2613	50	1,56728	$\phi =$	1,56728	x ΔT	1,2613
TUB2-030/12D50	238	125	1,2613	50	1,70976	$\phi =$	1,70976	x ΔT	1,2613
TUB2-030/13D50	257	135	1,2613	50	1,85224	$\phi =$	1,85224	x ΔT	1,2613
TUB2-030/14D50	277	146	1,2613	50	1,99472	$\phi =$	1,99472	x ΔT	1,2613
TUB2-030/15D50	297	156	1,2613	50	2,13720	$\phi =$	2,13720	x ΔT	1,2613
TUB2-030/16D50	317	166	1,2613	50	2,27968	$\phi =$	2,27968	x ΔT	1,2613

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TUB2-030/17D50	337	177	1,2613	50	2,42216	$\phi =$	2,42216	$\times \Delta T$	1,2613
TUB2-030/18D50	356	187	1,2613	50	2,56464	$\phi =$	2,56464	$\times \Delta T$	1,2613
TUB2-030/19D50	376	198	1,2613	50	2,70712	$\phi =$	2,70712	$\times \Delta T$	1,2613
TUB2-030/20D50	396	208	1,2613	50	2,84960	$\phi =$	2,84960	$\times \Delta T$	1,2613
TUB2-030/21D50	416	218	1,2613	50	2,99208	$\phi =$	2,99208	$\times \Delta T$	1,2613
TUB2-030/22D50	436	229	1,2613	50	3,13456	$\phi =$	3,13456	$\times \Delta T$	1,2613
TUB2-030/23D50	455	239	1,2613	50	3,27704	$\phi =$	3,27704	$\times \Delta T$	1,2613
TUB2-030/24D50	475	249	1,2613	50	3,41952	$\phi =$	3,41952	$\times \Delta T$	1,2613
TUB2-030/25D50	495	260	1,2613	50	3,56200	$\phi =$	3,56200	$\times \Delta T$	1,2613
TUB2-030/26D50	515	270	1,2613	50	3,70448	$\phi =$	3,70448	$\times \Delta T$	1,2613
TUB2-030/27D50	535	281	1,2613	50	3,84696	$\phi =$	3,84696	$\times \Delta T$	1,2613
TUB2-030/28D50	554	291	1,2613	50	3,98944	$\phi =$	3,98944	$\times \Delta T$	1,2613
TUB2-030/29D50	574	301	1,2613	50	4,13192	$\phi =$	4,13192	$\times \Delta T$	1,2613
TUB2-030/30D50	594	312	1,2613	50	4,27440	$\phi =$	4,27440	$\times \Delta T$	1,2613
TUB2-030/31D50	614	322	1,2613	50	4,41688	$\phi =$	4,41688	$\times \Delta T$	1,2613
TUB2-030/32D50	634	333	1,2613	50	4,55936	$\phi =$	4,55936	$\times \Delta T$	1,2613
TUB2-030/33D50	653	343	1,2613	50	4,70184	$\phi =$	4,70184	$\times \Delta T$	1,2613
TUB2-030/34D50	673	353	1,2613	50	4,84432	$\phi =$	4,84432	$\times \Delta T$	1,2613
TUB2-030/35D50	693	364	1,2613	50	4,98680	$\phi =$	4,98680	$\times \Delta T$	1,2613
TUB2-030/36D50	713	374	1,2613	50	5,12928	$\phi =$	5,12928	$\times \Delta T$	1,2613
TUB2-030/37D50	733	385	1,2613	50	5,27177	$\phi =$	5,27177	$\times \Delta T$	1,2613
TUB2-030/38D50	752	395	1,2613	50	5,41425	$\phi =$	5,41425	$\times \Delta T$	1,2613
TUB2-030/39D50	772	405	1,2613	50	5,55673	$\phi =$	5,55673	$\times \Delta T$	1,2613
TUB2-030/40D50	792	416	1,2613	50	5,69921	$\phi =$	5,69921	$\times \Delta T$	1,2613
TUB2-030/41D50	812	426	1,2613	50	5,84169	$\phi =$	5,84169	$\times \Delta T$	1,2613
TUB2-030/42D50	832	437	1,2613	50	5,98417	$\phi =$	5,98417	$\times \Delta T$	1,2613
TUB2-030/43D50	851	447	1,2613	50	6,12665	$\phi =$	6,12665	$\times \Delta T$	1,2613
TUB2-030/44D50	871	457	1,2613	50	6,26913	$\phi =$	6,26913	$\times \Delta T$	1,2613
TUB2-030/45D50	891	468	1,2613	50	6,41161	$\phi =$	6,41161	$\times \Delta T$	1,2613
TUB2-040/02D50	55	29	1,2616	50	0,39675	$\phi =$	0,39675	$\times \Delta T$	1,2616
TUB2-040/03D50	83	43	1,2616	50	0,59513	$\phi =$	0,59513	$\times \Delta T$	1,2616
TUB2-040/04D50	110	58	1,2616	50	0,79350	$\phi =$	0,79350	$\times \Delta T$	1,2616
TUB2-040/05D50	138	72	1,2616	50	0,99188	$\phi =$	0,99188	$\times \Delta T$	1,2616
TUB2-040/06D50	166	87	1,2616	50	1,19025	$\phi =$	1,19025	$\times \Delta T$	1,2616
TUB2-040/07D50	193	101	1,2616	50	1,38863	$\phi =$	1,38863	$\times \Delta T$	1,2616
TUB2-040/08D50	221	116	1,2616	50	1,58701	$\phi =$	1,58701	$\times \Delta T$	1,2616
TUB2-040/09D50	248	130	1,2616	50	1,78538	$\phi =$	1,78538	$\times \Delta T$	1,2616
TUB2-040/10D50	276	145	1,2616	50	1,98376	$\phi =$	1,98376	$\times \Delta T$	1,2616
TUB2-040/11D50	304	159	1,2616	50	2,18213	$\phi =$	2,18213	$\times \Delta T$	1,2616
TUB2-040/12D50	331	174	1,2616	50	2,38051	$\phi =$	2,38051	$\times \Delta T$	1,2616
TUB2-040/13D50	359	188	1,2616	50	2,57888	$\phi =$	2,57888	$\times \Delta T$	1,2616
TUB2-040/14D50	386	203	1,2616	50	2,77726	$\phi =$	2,77726	$\times \Delta T$	1,2616
TUB2-040/15D50	414	217	1,2616	50	2,97564	$\phi =$	2,97564	$\times \Delta T$	1,2616
TUB2-040/16D50	442	232	1,2616	50	3,17401	$\phi =$	3,17401	$\times \Delta T$	1,2616
TUB2-040/17D50	469	246	1,2616	50	3,37239	$\phi =$	3,37239	$\times \Delta T$	1,2616
TUB2-040/18D50	497	261	1,2616	50	3,57076	$\phi =$	3,57076	$\times \Delta T$	1,2616
TUB2-040/19D50	524	275	1,2616	50	3,76914	$\phi =$	3,76914	$\times \Delta T$	1,2616
TUB2-040/20D50	552	290	1,2616	50	3,96751	$\phi =$	3,96751	$\times \Delta T$	1,2616
TUB2-040/21D50	580	304	1,2616	50	4,16589	$\phi =$	4,16589	$\times \Delta T$	1,2616
TUB2-040/22D50	607	319	1,2616	50	4,36427	$\phi =$	4,36427	$\times \Delta T$	1,2616
TUB2-040/23D50	635	333	1,2616	50	4,56264	$\phi =$	4,56264	$\times \Delta T$	1,2616
TUB2-040/24D50	662	348	1,2616	50	4,76102	$\phi =$	4,76102	$\times \Delta T$	1,2616
TUB2-040/25D50	690	362	1,2616	50	4,95939	$\phi =$	4,95939	$\times \Delta T$	1,2616
TUB2-040/26D50	718	377	1,2616	50	5,15777	$\phi =$	5,15777	$\times \Delta T$	1,2616
TUB2-040/27D50	745	391	1,2616	50	5,35614	$\phi =$	5,35614	$\times \Delta T$	1,2616
TUB2-040/28D50	773	406	1,2616	50	5,55452	$\phi =$	5,55452	$\times \Delta T$	1,2616
TUB2-040/29D50	800	420	1,2616	50	5,75290	$\phi =$	5,75290	$\times \Delta T$	1,2616
TUB2-040/30D50	828	435	1,2616	50	5,95127	$\phi =$	5,95127	$\times \Delta T$	1,2616
TUB2-040/31D50	856	449	1,2616	50	6,14965	$\phi =$	6,14965	$\times \Delta T$	1,2616
TUB2-040/32D50	883	464	1,2616	50	6,34802	$\phi =$	6,34802	$\times \Delta T$	1,2616
TUB2-040/33D50	911	478	1,2616	50	6,54640	$\phi =$	6,54640	$\times \Delta T$	1,2616
TUB2-040/34D50	938	493	1,2616	50	6,74477	$\phi =$	6,74477	$\times \Delta T$	1,2616
TUB2-040/35D50	966	507	1,2616	50	6,94315	$\phi =$	6,94315	$\times \Delta T$	1,2616
TUB2-040/36D50	994	522	1,2616	50	7,14153	$\phi =$	7,14153	$\times \Delta T$	1,2616
TUB2-040/37D50	1021	536	1,2616	50	7,33990	$\phi =$	7,33990	$\times \Delta T$	1,2616

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TUB2-040/38D50	1049	551	1,2616	50	7,53828	$\phi =$	7,53828	$\times \Delta T$	1,2616
TUB2-040/39D50	1076	565	1,2616	50	7,73665	$\phi =$	7,73665	$\times \Delta T$	1,2616
TUB2-040/40D50	1104	580	1,2616	50	7,93503	$\phi =$	7,93503	$\times \Delta T$	1,2616
TUB2-040/41D50	1132	594	1,2616	50	8,13340	$\phi =$	8,13340	$\times \Delta T$	1,2616
TUB2-040/42D50	1159	609	1,2616	50	8,33178	$\phi =$	8,33178	$\times \Delta T$	1,2616
TUB2-040/43D50	1187	623	1,2616	50	8,53016	$\phi =$	8,53016	$\times \Delta T$	1,2616
TUB2-040/44D50	1214	637	1,2616	50	8,72853	$\phi =$	8,72853	$\times \Delta T$	1,2616
TUB2-040/45D50	1242	652	1,2616	50	8,92691	$\phi =$	8,92691	$\times \Delta T$	1,2616
TUB2-050/02D50	71	37	1,2620	50	0,51095	$\phi =$	0,51095	$\times \Delta T$	1,2620
TUB2-050/03D50	107	56	1,2620	50	0,76643	$\phi =$	0,76643	$\times \Delta T$	1,2620
TUB2-050/04D50	142	75	1,2620	50	1,02190	$\phi =$	1,02190	$\times \Delta T$	1,2620
TUB2-050/05D50	178	93	1,2620	50	1,27738	$\phi =$	1,27738	$\times \Delta T$	1,2620
TUB2-050/06D50	214	112	1,2620	50	1,53286	$\phi =$	1,53286	$\times \Delta T$	1,2620
TUB2-050/07D50	249	131	1,2620	50	1,78833	$\phi =$	1,78833	$\times \Delta T$	1,2620
TUB2-050/08D50	285	149	1,2620	50	2,04381	$\phi =$	2,04381	$\times \Delta T$	1,2620
TUB2-050/09D50	320	168	1,2620	50	2,29928	$\phi =$	2,29928	$\times \Delta T$	1,2620
TUB2-050/10D50	356	187	1,2620	50	2,55476	$\phi =$	2,55476	$\times \Delta T$	1,2620
TUB2-050/11D50	392	206	1,2620	50	2,81023	$\phi =$	2,81023	$\times \Delta T$	1,2620
TUB2-050/12D50	427	224	1,2620	50	3,06571	$\phi =$	3,06571	$\times \Delta T$	1,2620
TUB2-050/13D50	463	243	1,2620	50	3,32119	$\phi =$	3,32119	$\times \Delta T$	1,2620
TUB2-050/14D50	498	262	1,2620	50	3,57666	$\phi =$	3,57666	$\times \Delta T$	1,2620
TUB2-050/15D50	534	280	1,2620	50	3,83214	$\phi =$	3,83214	$\times \Delta T$	1,2620
TUB2-050/16D50	570	299	1,2620	50	4,08761	$\phi =$	4,08761	$\times \Delta T$	1,2620
TUB2-050/17D50	605	318	1,2620	50	4,34309	$\phi =$	4,34309	$\times \Delta T$	1,2620
TUB2-050/18D50	641	336	1,2620	50	4,59857	$\phi =$	4,59857	$\times \Delta T$	1,2620
TUB2-050/19D50	676	355	1,2620	50	4,85404	$\phi =$	4,85404	$\times \Delta T$	1,2620
TUB2-050/20D50	712	374	1,2620	50	5,10952	$\phi =$	5,10952	$\times \Delta T$	1,2620
TUB2-050/21D50	748	392	1,2620	50	5,36499	$\phi =$	5,36499	$\times \Delta T$	1,2620
TUB2-050/22D50	783	411	1,2620	50	5,62047	$\phi =$	5,62047	$\times \Delta T$	1,2620
TUB2-050/23D50	819	430	1,2620	50	5,87594	$\phi =$	5,87594	$\times \Delta T$	1,2620
TUB2-050/24D50	854	448	1,2620	50	6,13142	$\phi =$	6,13142	$\times \Delta T$	1,2620
TUB2-050/25D50	890	467	1,2620	50	6,38690	$\phi =$	6,38690	$\times \Delta T$	1,2620
TUB2-050/26D50	926	486	1,2620	50	6,64237	$\phi =$	6,64237	$\times \Delta T$	1,2620
TUB2-050/27D50	961	504	1,2620	50	6,89785	$\phi =$	6,89785	$\times \Delta T$	1,2620
TUB2-050/28D50	997	523	1,2620	50	7,15332	$\phi =$	7,15332	$\times \Delta T$	1,2620
TUB2-050/29D50	1032	542	1,2620	50	7,40880	$\phi =$	7,40880	$\times \Delta T$	1,2620
TUB2-050/30D50	1068	561	1,2620	50	7,66428	$\phi =$	7,66428	$\times \Delta T$	1,2620
TUB2-050/31D50	1104	579	1,2620	50	7,91975	$\phi =$	7,91975	$\times \Delta T$	1,2620
TUB2-050/32D50	1139	598	1,2620	50	8,17523	$\phi =$	8,17523	$\times \Delta T$	1,2620
TUB2-050/33D50	1175	617	1,2620	50	8,43070	$\phi =$	8,43070	$\times \Delta T$	1,2620
TUB2-050/34D50	1210	635	1,2620	50	8,68618	$\phi =$	8,68618	$\times \Delta T$	1,2620
TUB2-050/35D50	1246	654	1,2620	50	8,94165	$\phi =$	8,94165	$\times \Delta T$	1,2620
TUB2-050/36D50	1282	673	1,2620	50	9,19713	$\phi =$	9,19713	$\times \Delta T$	1,2620
TUB2-050/37D50	1317	691	1,2620	50	9,45261	$\phi =$	9,45261	$\times \Delta T$	1,2620
TUB2-050/38D50	1353	710	1,2620	50	9,70808	$\phi =$	9,70808	$\times \Delta T$	1,2620
TUB2-050/39D50	1388	729	1,2620	50	9,96356	$\phi =$	9,96356	$\times \Delta T$	1,2620
TUB2-050/40D50	1424	747	1,2620	50	10,21903	$\phi =$	10,21903	$\times \Delta T$	1,2620
TUB2-050/41D50	1460	766	1,2620	50	10,47451	$\phi =$	10,47451	$\times \Delta T$	1,2620
TUB2-050/42D50	1495	785	1,2620	50	10,72999	$\phi =$	10,72999	$\times \Delta T$	1,2620
TUB2-050/43D50	1531	803	1,2620	50	10,98546	$\phi =$	10,98546	$\times \Delta T$	1,2620
TUB2-050/44D50	1566	822	1,2620	50	11,24094	$\phi =$	11,24094	$\times \Delta T$	1,2620
TUB2-050/45D50	1602	841	1,2620	50	11,49641	$\phi =$	11,49641	$\times \Delta T$	1,2620
TUB2-070/02D50	103	54	1,2631	50	0,73741	$\phi =$	0,73741	$\times \Delta T$	1,2631
TUB2-070/03D50	155	81	1,2631	50	1,10612	$\phi =$	1,10612	$\times \Delta T$	1,2631
TUB2-070/04D50	206	108	1,2631	50	1,47483	$\phi =$	1,47483	$\times \Delta T$	1,2631
TUB2-070/05D50	258	135	1,2631	50	1,84353	$\phi =$	1,84353	$\times \Delta T$	1,2631
TUB2-070/06D50	310	162	1,2631	50	2,21224	$\phi =$	2,21224	$\times \Delta T$	1,2631
TUB2-070/07D50	361	189	1,2631	50	2,58094	$\phi =$	2,58094	$\times \Delta T$	1,2631
TUB2-070/08D50	413	217	1,2631	50	2,94965	$\phi =$	2,94965	$\times \Delta T$	1,2631
TUB2-070/09D50	464	244	1,2631	50	3,31836	$\phi =$	3,31836	$\times \Delta T$	1,2631
TUB2-070/10D50	516	271	1,2631	50	3,68706	$\phi =$	3,68706	$\times \Delta T$	1,2631
TUB2-070/11D50	568	298	1,2631	50	4,05577	$\phi =$	4,05577	$\times \Delta T$	1,2631
TUB2-070/12D50	619	325	1,2631	50	4,42448	$\phi =$	4,42448	$\times \Delta T$	1,2631
TUB2-070/13D50	671	352	1,2631	50	4,79318	$\phi =$	4,79318	$\times \Delta T$	1,2631
TUB2-070/14D50	722	379	1,2631	50	5,16189	$\phi =$	5,16189	$\times \Delta T$	1,2631

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TUB2-070/15D50	774	406	1,2631	50	5,53060	$\phi =$	5,53060	$\times \Delta T$	1,2631
TUB2-070/16D50	826	433	1,2631	50	5,89930	$\phi =$	5,89930	$\times \Delta T$	1,2631
TUB2-070/17D50	877	460	1,2631	50	6,26801	$\phi =$	6,26801	$\times \Delta T$	1,2631
TUB2-070/18D50	929	487	1,2631	50	6,63672	$\phi =$	6,63672	$\times \Delta T$	1,2631
TUB2-070/19D50	980	514	1,2631	50	7,00542	$\phi =$	7,00542	$\times \Delta T$	1,2631
TUB2-070/20D50	1032	541	1,2631	50	7,37413	$\phi =$	7,37413	$\times \Delta T$	1,2631
TUB2-070/21D50	1084	568	1,2631	50	7,74283	$\phi =$	7,74283	$\times \Delta T$	1,2631
TUB2-070/22D50	1135	595	1,2631	50	8,11154	$\phi =$	8,11154	$\times \Delta T$	1,2631
TUB2-070/23D50	1187	623	1,2631	50	8,48025	$\phi =$	8,48025	$\times \Delta T$	1,2631
TUB2-070/24D50	1238	650	1,2631	50	8,84895	$\phi =$	8,84895	$\times \Delta T$	1,2631
TUB2-070/25D50	1290	677	1,2631	50	9,21766	$\phi =$	9,21766	$\times \Delta T$	1,2631
TUB2-070/26D50	1342	704	1,2631	50	9,58637	$\phi =$	9,58637	$\times \Delta T$	1,2631
TUB2-070/27D50	1393	731	1,2631	50	9,95507	$\phi =$	9,95507	$\times \Delta T$	1,2631
TUB2-070/28D50	1445	758	1,2631	50	10,32378	$\phi =$	10,32378	$\times \Delta T$	1,2631
TUB2-070/29D50	1496	785	1,2631	50	10,69249	$\phi =$	10,69249	$\times \Delta T$	1,2631
TUB2-070/30D50	1548	812	1,2631	50	11,06119	$\phi =$	11,06119	$\times \Delta T$	1,2631
TUB2-070/31D50	1600	839	1,2631	50	11,42990	$\phi =$	11,42990	$\times \Delta T$	1,2631
TUB2-070/32D50	1651	866	1,2631	50	11,79861	$\phi =$	11,79861	$\times \Delta T$	1,2631
TUB2-070/33D50	1703	893	1,2631	50	12,16731	$\phi =$	12,16731	$\times \Delta T$	1,2631
TUB2-070/34D50	1754	920	1,2631	50	12,53602	$\phi =$	12,53602	$\times \Delta T$	1,2631
TUB2-070/35D50	1806	947	1,2631	50	12,90472	$\phi =$	12,90472	$\times \Delta T$	1,2631
TUB2-070/36D50	1858	974	1,2631	50	13,27343	$\phi =$	13,27343	$\times \Delta T$	1,2631
TUB2-070/37D50	1909	1001	1,2631	50	13,64214	$\phi =$	13,64214	$\times \Delta T$	1,2631
TUB2-070/38D50	1961	1029	1,2631	50	14,01084	$\phi =$	14,01084	$\times \Delta T$	1,2631
TUB2-070/39D50	2012	1056	1,2631	50	14,37955	$\phi =$	14,37955	$\times \Delta T$	1,2631
TUB2-070/40D50	2064	1083	1,2631	50	14,74826	$\phi =$	14,74826	$\times \Delta T$	1,2631
TUB2-070/41D50	2116	1110	1,2631	50	15,11696	$\phi =$	15,11696	$\times \Delta T$	1,2631
TUB2-070/42D50	2167	1137	1,2631	50	15,48567	$\phi =$	15,48567	$\times \Delta T$	1,2631
TUB2-070/43D50	2219	1164	1,2631	50	15,85438	$\phi =$	15,85438	$\times \Delta T$	1,2631
TUB2-070/44D50	2270	1191	1,2631	50	16,22308	$\phi =$	16,22308	$\times \Delta T$	1,2631
TUB2-070/45D50	2322	1218	1,2631	50	16,59179	$\phi =$	16,59179	$\times \Delta T$	1,2631
TUB2-080/02D50	119	63	1,2638	50	0,84941	$\phi =$	0,84941	$\times \Delta T$	1,2638
TUB2-080/03D50	179	94	1,2638	50	1,27412	$\phi =$	1,27412	$\times \Delta T$	1,2638
TUB2-080/04D50	238	125	1,2638	50	1,69882	$\phi =$	1,69882	$\times \Delta T$	1,2638
TUB2-080/05D50	298	156	1,2638	50	2,12353	$\phi =$	2,12353	$\times \Delta T$	1,2638
TUB2-080/06D50	358	188	1,2638	50	2,54823	$\phi =$	2,54823	$\times \Delta T$	1,2638
TUB2-080/07D50	417	219	1,2638	50	2,97294	$\phi =$	2,97294	$\times \Delta T$	1,2638
TUB2-080/08D50	477	250	1,2638	50	3,39764	$\phi =$	3,39764	$\times \Delta T$	1,2638
TUB2-080/09D50	536	281	1,2638	50	3,82235	$\phi =$	3,82235	$\times \Delta T$	1,2638
TUB2-080/10D50	596	313	1,2638	50	4,24706	$\phi =$	4,24706	$\times \Delta T$	1,2638
TUB2-080/11D50	656	344	1,2638	50	4,67176	$\phi =$	4,67176	$\times \Delta T$	1,2638
TUB2-080/12D50	715	375	1,2638	50	5,09647	$\phi =$	5,09647	$\times \Delta T$	1,2638
TUB2-080/13D50	775	406	1,2638	50	5,52117	$\phi =$	5,52117	$\times \Delta T$	1,2638
TUB2-080/14D50	834	438	1,2638	50	5,94588	$\phi =$	5,94588	$\times \Delta T$	1,2638
TUB2-080/15D50	894	469	1,2638	50	6,37058	$\phi =$	6,37058	$\times \Delta T$	1,2638
TUB2-080/16D50	954	500	1,2638	50	6,79529	$\phi =$	6,79529	$\times \Delta T$	1,2638
TUB2-080/17D50	1013	531	1,2638	50	7,21999	$\phi =$	7,21999	$\times \Delta T$	1,2638
TUB2-080/18D50	1073	563	1,2638	50	7,64470	$\phi =$	7,64470	$\times \Delta T$	1,2638
TUB2-080/19D50	1132	594	1,2638	50	8,06941	$\phi =$	8,06941	$\times \Delta T$	1,2638
TUB2-080/20D50	1192	625	1,2638	50	8,49411	$\phi =$	8,49411	$\times \Delta T$	1,2638
TUB2-080/21D50	1252	656	1,2638	50	8,91882	$\phi =$	8,91882	$\times \Delta T$	1,2638
TUB2-080/22D50	1311	688	1,2638	50	9,34352	$\phi =$	9,34352	$\times \Delta T$	1,2638
TUB2-080/23D50	1371	719	1,2638	50	9,76823	$\phi =$	9,76823	$\times \Delta T$	1,2638
TUB2-080/24D50	1430	750	1,2638	50	10,19293	$\phi =$	10,19293	$\times \Delta T$	1,2638
TUB2-080/25D50	1490	781	1,2638	50	10,61764	$\phi =$	10,61764	$\times \Delta T$	1,2638
TUB2-080/26D50	1550	813	1,2638	50	11,04235	$\phi =$	11,04235	$\times \Delta T$	1,2638
TUB2-080/27D50	1609	844	1,2638	50	11,46705	$\phi =$	11,46705	$\times \Delta T$	1,2638
TUB2-080/28D50	1669	875	1,2638	50	11,89176	$\phi =$	11,89176	$\times \Delta T$	1,2638
TUB2-080/29D50	1728	906	1,2638	50	12,31646	$\phi =$	12,31646	$\times \Delta T$	1,2638
TUB2-080/30D50	1788	938	1,2638	50	12,74117	$\phi =$	12,74117	$\times \Delta T$	1,2638
TUB2-080/31D50	1848	969	1,2638	50	13,16587	$\phi =$	13,16587	$\times \Delta T$	1,2638
TUB2-080/32D50	1907	1000	1,2638	50	13,59058	$\phi =$	13,59058	$\times \Delta T$	1,2638
TUB2-080/33D50	1967	1031	1,2638	50	14,01528	$\phi =$	14,01528	$\times \Delta T$	1,2638
TUB2-080/34D50	2026	1063	1,2638	50	14,43999	$\phi =$	14,43999	$\times \Delta T$	1,2638
TUB2-080/35D50	2086	1094	1,2638	50	14,86470	$\phi =$	14,86470	$\times \Delta T$	1,2638

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TUB2-080/36D50	2146	1125	1,2638	50	15,28940	$\phi =$	15,28940	$\times \Delta T$	1,2638
TUB2-080/37D50	2205	1156	1,2638	50	15,71411	$\phi =$	15,71411	$\times \Delta T$	1,2638
TUB2-080/38D50	2265	1188	1,2638	50	16,13881	$\phi =$	16,13881	$\times \Delta T$	1,2638
TUB2-080/39D50	2324	1219	1,2638	50	16,56352	$\phi =$	16,56352	$\times \Delta T$	1,2638
TUB2-080/40D50	2384	1250	1,2638	50	16,98822	$\phi =$	16,98822	$\times \Delta T$	1,2638
TUB2-080/41D50	2444	1281	1,2638	50	17,41293	$\phi =$	17,41293	$\times \Delta T$	1,2638
TUB2-080/42D50	2503	1313	1,2638	50	17,83763	$\phi =$	17,83763	$\times \Delta T$	1,2638
TUB2-080/43D50	2563	1344	1,2638	50	18,26234	$\phi =$	18,26234	$\times \Delta T$	1,2638
TUB2-080/44D50	2622	1375	1,2638	50	18,68705	$\phi =$	18,68705	$\times \Delta T$	1,2638
TUB2-080/45D50	2682	1406	1,2638	50	19,11175	$\phi =$	19,11175	$\times \Delta T$	1,2638
TUB2-090/02D50	135	71	1,2645	50	0,96079	$\phi =$	0,96079	$\times \Delta T$	1,2645
TUB2-090/03D50	203	106	1,2645	50	1,44119	$\phi =$	1,44119	$\times \Delta T$	1,2645
TUB2-090/04D50	270	142	1,2645	50	1,92158	$\phi =$	1,92158	$\times \Delta T$	1,2645
TUB2-090/05D50	338	177	1,2645	50	2,40198	$\phi =$	2,40198	$\times \Delta T$	1,2645
TUB2-090/06D50	406	213	1,2645	50	2,88237	$\phi =$	2,88237	$\times \Delta T$	1,2645
TUB2-090/07D50	473	248	1,2645	50	3,36277	$\phi =$	3,36277	$\times \Delta T$	1,2645
TUB2-090/08D50	541	283	1,2645	50	3,84317	$\phi =$	3,84317	$\times \Delta T$	1,2645
TUB2-090/09D50	608	319	1,2645	50	4,32356	$\phi =$	4,32356	$\times \Delta T$	1,2645
TUB2-090/10D50	676	354	1,2645	50	4,80396	$\phi =$	4,80396	$\times \Delta T$	1,2645
TUB2-090/11D50	744	390	1,2645	50	5,28435	$\phi =$	5,28435	$\times \Delta T$	1,2645
TUB2-090/12D50	811	425	1,2645	50	5,76475	$\phi =$	5,76475	$\times \Delta T$	1,2645
TUB2-090/13D50	879	461	1,2645	50	6,24514	$\phi =$	6,24514	$\times \Delta T$	1,2645
TUB2-090/14D50	946	496	1,2645	50	6,72554	$\phi =$	6,72554	$\times \Delta T$	1,2645
TUB2-090/15D50	1014	532	1,2645	50	7,20594	$\phi =$	7,20594	$\times \Delta T$	1,2645
TUB2-090/16D50	1082	567	1,2645	50	7,68633	$\phi =$	7,68633	$\times \Delta T$	1,2645
TUB2-090/17D50	1149	602	1,2645	50	8,16673	$\phi =$	8,16673	$\times \Delta T$	1,2645
TUB2-090/18D50	1217	638	1,2645	50	8,64712	$\phi =$	8,64712	$\times \Delta T$	1,2645
TUB2-090/19D50	1284	673	1,2645	50	9,12752	$\phi =$	9,12752	$\times \Delta T$	1,2645
TUB2-090/20D50	1352	709	1,2645	50	9,60791	$\phi =$	9,60791	$\times \Delta T$	1,2645
TUB2-090/21D50	1420	744	1,2645	50	10,08831	$\phi =$	10,08831	$\times \Delta T$	1,2645
TUB2-090/22D50	1487	780	1,2645	50	10,56871	$\phi =$	10,56871	$\times \Delta T$	1,2645
TUB2-090/23D50	1555	815	1,2645	50	11,04910	$\phi =$	11,04910	$\times \Delta T$	1,2645
TUB2-090/24D50	1622	850	1,2645	50	11,52950	$\phi =$	11,52950	$\times \Delta T$	1,2645
TUB2-090/25D50	1690	886	1,2645	50	12,00989	$\phi =$	12,00989	$\times \Delta T$	1,2645
TUB2-090/26D50	1758	921	1,2645	50	12,49029	$\phi =$	12,49029	$\times \Delta T$	1,2645
TUB2-090/27D50	1825	957	1,2645	50	12,97068	$\phi =$	12,97068	$\times \Delta T$	1,2645
TUB2-090/28D50	1893	992	1,2645	50	13,45108	$\phi =$	13,45108	$\times \Delta T$	1,2645
TUB2-090/29D50	1960	1028	1,2645	50	13,93148	$\phi =$	13,93148	$\times \Delta T$	1,2645
TUB2-090/30D50	2028	1063	1,2645	50	14,41187	$\phi =$	14,41187	$\times \Delta T$	1,2645
TUB2-090/31D50	2096	1098	1,2645	50	14,89227	$\phi =$	14,89227	$\times \Delta T$	1,2645
TUB2-090/32D50	2163	1134	1,2645	50	15,37266	$\phi =$	15,37266	$\times \Delta T$	1,2645
TUB2-090/33D50	2231	1169	1,2645	50	15,85306	$\phi =$	15,85306	$\times \Delta T$	1,2645
TUB2-090/34D50	2298	1205	1,2645	50	16,33345	$\phi =$	16,33345	$\times \Delta T$	1,2645
TUB2-090/35D50	2366	1240	1,2645	50	16,81385	$\phi =$	16,81385	$\times \Delta T$	1,2645
TUB2-090/36D50	2434	1276	1,2645	50	17,29425	$\phi =$	17,29425	$\times \Delta T$	1,2645
TUB2-090/37D50	2501	1311	1,2645	50	17,77464	$\phi =$	17,77464	$\times \Delta T$	1,2645
TUB2-090/38D50	2569	1346	1,2645	50	18,25504	$\phi =$	18,25504	$\times \Delta T$	1,2645
TUB2-090/39D50	2636	1382	1,2645	50	18,73543	$\phi =$	18,73543	$\times \Delta T$	1,2645
TUB2-090/40D50	2704	1417	1,2645	50	19,21583	$\phi =$	19,21583	$\times \Delta T$	1,2645
TUB2-090/41D50	2772	1453	1,2645	50	19,69622	$\phi =$	19,69622	$\times \Delta T$	1,2645
TUB2-090/42D50	2839	1488	1,2645	50	20,17662	$\phi =$	20,17662	$\times \Delta T$	1,2645
TUB2-090/43D50	2907	1524	1,2645	50	20,65702	$\phi =$	20,65702	$\times \Delta T$	1,2645
TUB2-090/44D50	2974	1559	1,2645	50	21,13741	$\phi =$	21,13741	$\times \Delta T$	1,2645
TUB2-090/45D50	3042	1595	1,2645	50	21,61781	$\phi =$	21,61781	$\times \Delta T$	1,2645
TUB2-100/02D50	151	79	1,2635	50	1,07443	$\phi =$	1,07443	$\times \Delta T$	1,2635
TUB2-100/03D50	226	118	1,2635	50	1,61164	$\phi =$	1,61164	$\times \Delta T$	1,2635
TUB2-100/04D50	301	158	1,2635	50	2,14885	$\phi =$	2,14885	$\times \Delta T$	1,2635
TUB2-100/05D50	377	197	1,2635	50	2,68606	$\phi =$	2,68606	$\times \Delta T$	1,2635
TUB2-100/06D50	452	237	1,2635	50	3,22328	$\phi =$	3,22328	$\times \Delta T$	1,2635
TUB2-100/07D50	527	276	1,2635	50	3,76049	$\phi =$	3,76049	$\times \Delta T$	1,2635
TUB2-100/08D50	602	316	1,2635	50	4,29770	$\phi =$	4,29770	$\times \Delta T$	1,2635
TUB2-100/09D50	678	355	1,2635	50	4,83492	$\phi =$	4,83492	$\times \Delta T$	1,2635
TUB2-100/10D50	753	395	1,2635	50	5,37213	$\phi =$	5,37213	$\times \Delta T$	1,2635
TUB2-100/11D50	828	434	1,2635	50	5,90934	$\phi =$	5,90934	$\times \Delta T$	1,2635
TUB2-100/12D50	904	474	1,2635	50	6,44655	$\phi =$	6,44655	$\times \Delta T$	1,2635

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TUB2-100/13D50	979	513	1,2635	50	6,98377	$\phi =$	6,98377	$\times \Delta T$	1,2635
TUB2-100/14D50	1054	553	1,2635	50	7,52098	$\phi =$	7,52098	$\times \Delta T$	1,2635
TUB2-100/15D50	1130	592	1,2635	50	8,05819	$\phi =$	8,05819	$\times \Delta T$	1,2635
TUB2-100/16D50	1205	632	1,2635	50	8,59541	$\phi =$	8,59541	$\times \Delta T$	1,2635
TUB2-100/17D50	1280	671	1,2635	50	9,13262	$\phi =$	9,13262	$\times \Delta T$	1,2635
TUB2-100/18D50	1355	711	1,2635	50	9,66983	$\phi =$	9,66983	$\times \Delta T$	1,2635
TUB2-100/19D50	1431	750	1,2635	50	10,20704	$\phi =$	10,20704	$\times \Delta T$	1,2635
TUB2-100/20D50	1506	790	1,2635	50	10,74426	$\phi =$	10,74426	$\times \Delta T$	1,2635
TUB2-100/21D50	1581	829	1,2635	50	11,28147	$\phi =$	11,28147	$\times \Delta T$	1,2635
TUB2-100/22D50	1657	869	1,2635	50	11,81868	$\phi =$	11,81868	$\times \Delta T$	1,2635
TUB2-100/23D50	1732	908	1,2635	50	12,35590	$\phi =$	12,35590	$\times \Delta T$	1,2635
TUB2-100/24D50	1807	948	1,2635	50	12,89311	$\phi =$	12,89311	$\times \Delta T$	1,2635
TUB2-100/25D50	1883	987	1,2635	50	13,43032	$\phi =$	13,43032	$\times \Delta T$	1,2635
TUB2-100/26D50	1958	1027	1,2635	50	13,96753	$\phi =$	13,96753	$\times \Delta T$	1,2635
TUB2-100/27D50	2033	1066	1,2635	50	14,50475	$\phi =$	14,50475	$\times \Delta T$	1,2635
TUB2-100/28D50	2108	1106	1,2635	50	15,04196	$\phi =$	15,04196	$\times \Delta T$	1,2635
TUB2-100/29D50	2184	1145	1,2635	50	15,57917	$\phi =$	15,57917	$\times \Delta T$	1,2635
TUB2-100/30D50	2259	1185	1,2635	50	16,11638	$\phi =$	16,11638	$\times \Delta T$	1,2635
TUB2-100/31D50	2334	1224	1,2635	50	16,65360	$\phi =$	16,65360	$\times \Delta T$	1,2635
TUB2-100/32D50	2410	1264	1,2635	50	17,19081	$\phi =$	17,19081	$\times \Delta T$	1,2635
TUB2-100/33D50	2485	1303	1,2635	50	17,72802	$\phi =$	17,72802	$\times \Delta T$	1,2635
TUB2-100/34D50	2560	1343	1,2635	50	18,26524	$\phi =$	18,26524	$\times \Delta T$	1,2635
TUB2-100/35D50	2636	1382	1,2635	50	18,80245	$\phi =$	18,80245	$\times \Delta T$	1,2635
TUB2-100/36D50	2711	1422	1,2635	50	19,33966	$\phi =$	19,33966	$\times \Delta T$	1,2635
TUB2-100/37D50	2786	1461	1,2635	50	19,87687	$\phi =$	19,87687	$\times \Delta T$	1,2635
TUB2-100/38D50	2861	1501	1,2635	50	20,41409	$\phi =$	20,41409	$\times \Delta T$	1,2635
TUB2-100/39D50	2937	1540	1,2635	50	20,95130	$\phi =$	20,95130	$\times \Delta T$	1,2635
TUB2-100/40D50	3012	1580	1,2635	50	21,48851	$\phi =$	21,48851	$\times \Delta T$	1,2635
TUB2-100/41D50	3087	1619	1,2635	50	22,02573	$\phi =$	22,02573	$\times \Delta T$	1,2635
TUB2-100/42D50	3163	1659	1,2635	50	22,56294	$\phi =$	22,56294	$\times \Delta T$	1,2635
TUB2-120/02D50	181	95	1,2672	50	1,27416	$\phi =$	1,27416	$\times \Delta T$	1,2672
TUB2-120/03D50	272	142	1,2672	50	1,91124	$\phi =$	1,91124	$\times \Delta T$	1,2672
TUB2-120/04D50	362	190	1,2672	50	2,54832	$\phi =$	2,54832	$\times \Delta T$	1,2672
TUB2-120/05D50	453	237	1,2672	50	3,18540	$\phi =$	3,18540	$\times \Delta T$	1,2672
TUB2-120/06D50	544	285	1,2672	50	3,82248	$\phi =$	3,82248	$\times \Delta T$	1,2672
TUB2-120/07D50	634	332	1,2672	50	4,45955	$\phi =$	4,45955	$\times \Delta T$	1,2672
TUB2-120/08D50	725	379	1,2672	50	5,09663	$\phi =$	5,09663	$\times \Delta T$	1,2672
TUB2-120/09D50	815	427	1,2672	50	5,73371	$\phi =$	5,73371	$\times \Delta T$	1,2672
TUB2-120/10D50	906	474	1,2672	50	6,37079	$\phi =$	6,37079	$\times \Delta T$	1,2672
TUB2-120/11D50	997	522	1,2672	50	7,00787	$\phi =$	7,00787	$\times \Delta T$	1,2672
TUB2-120/12D50	1087	569	1,2672	50	7,64495	$\phi =$	7,64495	$\times \Delta T$	1,2672
TUB2-120/13D50	1178	617	1,2672	50	8,28203	$\phi =$	8,28203	$\times \Delta T$	1,2672
TUB2-120/14D50	1268	664	1,2672	50	8,91911	$\phi =$	8,91911	$\times \Delta T$	1,2672
TUB2-120/15D50	1359	711	1,2672	50	9,55619	$\phi =$	9,55619	$\times \Delta T$	1,2672
TUB2-120/16D50	1450	759	1,2672	50	10,19327	$\phi =$	10,19327	$\times \Delta T$	1,2672
TUB2-120/17D50	1540	806	1,2672	50	10,83035	$\phi =$	10,83035	$\times \Delta T$	1,2672
TUB2-120/18D50	1631	854	1,2672	50	11,46743	$\phi =$	11,46743	$\times \Delta T$	1,2672
TUB2-120/19D50	1721	901	1,2672	50	12,10450	$\phi =$	12,10450	$\times \Delta T$	1,2672
TUB2-120/20D50	1812	948	1,2672	50	12,74158	$\phi =$	12,74158	$\times \Delta T$	1,2672
TUB2-120/21D50	1903	996	1,2672	50	13,37866	$\phi =$	13,37866	$\times \Delta T$	1,2672
TUB2-120/22D50	1993	1043	1,2672	50	14,01574	$\phi =$	14,01574	$\times \Delta T$	1,2672
TUB2-120/23D50	2084	1091	1,2672	50	14,65282	$\phi =$	14,65282	$\times \Delta T$	1,2672
TUB2-120/24D50	2174	1138	1,2672	50	15,28990	$\phi =$	15,28990	$\times \Delta T$	1,2672
TUB2-120/25D50	2265	1186	1,2672	50	15,92698	$\phi =$	15,92698	$\times \Delta T$	1,2672
TUB2-120/26D50	2356	1233	1,2672	50	16,56406	$\phi =$	16,56406	$\times \Delta T$	1,2672
TUB2-120/27D50	2446	1280	1,2672	50	17,20114	$\phi =$	17,20114	$\times \Delta T$	1,2672
TUB2-120/28D50	2537	1328	1,2672	50	17,83822	$\phi =$	17,83822	$\times \Delta T$	1,2672
TUB2-120/29D50	2627	1375	1,2672	50	18,47530	$\phi =$	18,47530	$\times \Delta T$	1,2672
TUB2-120/30D50	2718	1423	1,2672	50	19,11238	$\phi =$	19,11238	$\times \Delta T$	1,2672
TUB2-120/31D50	2809	1470	1,2672	50	19,74945	$\phi =$	19,74945	$\times \Delta T$	1,2672
TUB2-120/32D50	2899	1518	1,2672	50	20,38653	$\phi =$	20,38653	$\times \Delta T$	1,2672
TUB2-120/33D50	2990	1565	1,2672	50	21,02361	$\phi =$	21,02361	$\times \Delta T$	1,2672
TUB2-120/34D50	3080	1612	1,2672	50	21,66069	$\phi =$	21,66069	$\times \Delta T$	1,2672
TUB2-120/35D50	3171	1660	1,2672	50	22,29777	$\phi =$	22,29777	$\times \Delta T$	1,2672
TUB2-150/02D50	225	117	1,2706	50	1,55847	$\phi =$	1,55847	$\times \Delta T$	1,2706

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TUB2-150/03D50	337	176	1,2706	50	2,33771	$\phi =$	2,33771	$\times \Delta T$	1,2706
TUB2-150/04D50	449	235	1,2706	50	3,11694	$\phi =$	3,11694	$\times \Delta T$	1,2706
TUB2-150/05D50	562	293	1,2706	50	3,89618	$\phi =$	3,89618	$\times \Delta T$	1,2706
TUB2-150/06D50	674	352	1,2706	50	4,67541	$\phi =$	4,67541	$\times \Delta T$	1,2706
TUB2-150/07D50	786	411	1,2706	50	5,45465	$\phi =$	5,45465	$\times \Delta T$	1,2706
TUB2-150/08D50	898	469	1,2706	50	6,23388	$\phi =$	6,23388	$\times \Delta T$	1,2706
TUB2-150/09D50	1011	528	1,2706	50	7,01312	$\phi =$	7,01312	$\times \Delta T$	1,2706
TUB2-150/10D50	1123	587	1,2706	50	7,79235	$\phi =$	7,79235	$\times \Delta T$	1,2706
TUB2-150/11D50	1235	645	1,2706	50	8,57159	$\phi =$	8,57159	$\times \Delta T$	1,2706
TUB2-150/12D50	1348	704	1,2706	50	9,35082	$\phi =$	9,35082	$\times \Delta T$	1,2706
TUB2-150/13D50	1460	763	1,2706	50	10,13006	$\phi =$	10,13006	$\times \Delta T$	1,2706
TUB2-150/14D50	1572	822	1,2706	50	10,90929	$\phi =$	10,90929	$\times \Delta T$	1,2706
TUB2-150/15D50	1685	880	1,2706	50	11,68853	$\phi =$	11,68853	$\times \Delta T$	1,2706
TUB2-150/16D50	1797	939	1,2706	50	12,46776	$\phi =$	12,46776	$\times \Delta T$	1,2706
TUB2-150/17D50	1909	998	1,2706	50	13,24700	$\phi =$	13,24700	$\times \Delta T$	1,2706
TUB2-150/18D50	2021	1056	1,2706	50	14,02623	$\phi =$	14,02623	$\times \Delta T$	1,2706
TUB2-150/19D50	2134	1115	1,2706	50	14,80547	$\phi =$	14,80547	$\times \Delta T$	1,2706
TUB2-150/20D50	2246	1174	1,2706	50	15,58470	$\phi =$	15,58470	$\times \Delta T$	1,2706
TUB2-150/21D50	2358	1232	1,2706	50	16,36394	$\phi =$	16,36394	$\times \Delta T$	1,2706
TUB2-150/22D50	2471	1291	1,2706	50	17,14317	$\phi =$	17,14317	$\times \Delta T$	1,2706
TUB2-150/23D50	2583	1350	1,2706	50	17,92241	$\phi =$	17,92241	$\times \Delta T$	1,2706
TUB2-150/24D50	2695	1408	1,2706	50	18,70164	$\phi =$	18,70164	$\times \Delta T$	1,2706
TUB2-150/25D50	2808	1467	1,2706	50	19,48088	$\phi =$	19,48088	$\times \Delta T$	1,2706
TUB2-150/26D50	2920	1526	1,2706	50	20,26011	$\phi =$	20,26011	$\times \Delta T$	1,2706
TUB2-150/27D50	3032	1584	1,2706	50	21,03935	$\phi =$	21,03935	$\times \Delta T$	1,2706
TUB2-150/28D50	3144	1643	1,2706	50	21,81858	$\phi =$	21,81858	$\times \Delta T$	1,2706
TUB2-180/02D50	265	138	1,2747	50	1,80818	$\phi =$	1,80818	$\times \Delta T$	1,2747
TUB2-180/03D50	397	207	1,2747	50	2,71227	$\phi =$	2,71227	$\times \Delta T$	1,2747
TUB2-180/04D50	530	276	1,2747	50	3,61635	$\phi =$	3,61635	$\times \Delta T$	1,2747
TUB2-180/05D50	662	345	1,2747	50	4,52044	$\phi =$	4,52044	$\times \Delta T$	1,2747
TUB2-180/06D50	794	414	1,2747	50	5,42453	$\phi =$	5,42453	$\times \Delta T$	1,2747
TUB2-180/07D50	927	483	1,2747	50	6,32862	$\phi =$	6,32862	$\times \Delta T$	1,2747
TUB2-180/08D50	1059	552	1,2747	50	7,23271	$\phi =$	7,23271	$\times \Delta T$	1,2747
TUB2-180/09D50	1192	621	1,2747	50	8,13680	$\phi =$	8,13680	$\times \Delta T$	1,2747
TUB2-180/10D50	1324	690	1,2747	50	9,04088	$\phi =$	9,04088	$\times \Delta T$	1,2747
TUB2-180/11D50	1456	759	1,2747	50	9,94497	$\phi =$	9,94497	$\times \Delta T$	1,2747
TUB2-180/12D50	1589	828	1,2747	50	10,84906	$\phi =$	10,84906	$\times \Delta T$	1,2747
TUB2-180/13D50	1721	898	1,2747	50	11,75315	$\phi =$	11,75315	$\times \Delta T$	1,2747
TUB2-180/14D50	1854	967	1,2747	50	12,65724	$\phi =$	12,65724	$\times \Delta T$	1,2747
TUB2-180/15D50	1986	1036	1,2747	50	13,56133	$\phi =$	13,56133	$\times \Delta T$	1,2747
TUB2-180/16D50	2118	1105	1,2747	50	14,46542	$\phi =$	14,46542	$\times \Delta T$	1,2747
TUB2-180/17D50	2251	1174	1,2747	50	15,36950	$\phi =$	15,36950	$\times \Delta T$	1,2747
TUB2-180/18D50	2383	1243	1,2747	50	16,27359	$\phi =$	16,27359	$\times \Delta T$	1,2747
TUB2-180/19D50	2516	1312	1,2747	50	17,17768	$\phi =$	17,17768	$\times \Delta T$	1,2747
TUB2-180/20D50	2648	1381	1,2747	50	18,08177	$\phi =$	18,08177	$\times \Delta T$	1,2747
TUB2-180/21D50	2780	1450	1,2747	50	18,98586	$\phi =$	18,98586	$\times \Delta T$	1,2747
TUB2-180/22D50	2913	1519	1,2747	50	19,88995	$\phi =$	19,88995	$\times \Delta T$	1,2747
TUB2-180/23D50	3045	1588	1,2747	50	20,79403	$\phi =$	20,79403	$\times \Delta T$	1,2747
TUB2-200/02D50	290	151	1,2778	50	1,95369	$\phi =$	1,95369	$\times \Delta T$	1,2778
TUB2-200/03D50	434	226	1,2778	50	2,93053	$\phi =$	2,93053	$\times \Delta T$	1,2778
TUB2-200/04D50	579	302	1,2778	50	3,90737	$\phi =$	3,90737	$\times \Delta T$	1,2778
TUB2-200/05D50	724	377	1,2778	50	4,88421	$\phi =$	4,88421	$\times \Delta T$	1,2778
TUB2-200/06D50	869	452	1,2778	50	5,86106	$\phi =$	5,86106	$\times \Delta T$	1,2778
TUB2-200/07D50	1014	528	1,2778	50	6,83790	$\phi =$	6,83790	$\times \Delta T$	1,2778
TUB2-200/08D50	1158	603	1,2778	50	7,81474	$\phi =$	7,81474	$\times \Delta T$	1,2778
TUB2-200/09D50	1303	678	1,2778	50	8,79159	$\phi =$	8,79159	$\times \Delta T$	1,2778
TUB2-200/10D50	1448	754	1,2778	50	9,76843	$\phi =$	9,76843	$\times \Delta T$	1,2778
TUB2-200/11D50	1593	829	1,2778	50	10,74527	$\phi =$	10,74527	$\times \Delta T$	1,2778
TUB2-200/12D50	1738	905	1,2778	50	11,72211	$\phi =$	11,72211	$\times \Delta T$	1,2778
TUB2-200/13D50	1882	980	1,2778	50	12,69896	$\phi =$	12,69896	$\times \Delta T$	1,2778
TUB2-200/14D50	2027	1055	1,2778	50	13,67580	$\phi =$	13,67580	$\times \Delta T$	1,2778
TUB2-200/15D50	2172	1131	1,2778	50	14,65264	$\phi =$	14,65264	$\times \Delta T$	1,2778
TUB2-200/16D50	2317	1206	1,2778	50	15,62949	$\phi =$	15,62949	$\times \Delta T$	1,2778
TUB2-200/17D50	2462	1282	1,2778	50	16,60633	$\phi =$	16,60633	$\times \Delta T$	1,2778
TUB2-200/18D50	2606	1357	1,2778	50	17,58317	$\phi =$	17,58317	$\times \Delta T$	1,2778

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TUB2-200/19D50	2751	1432	1,2778	50	18,56001	$\phi =$	18,56001	x ΔT	1,2778
TUB2-200/20D50	2896	1508	1,2778	50	19,53686	$\phi =$	19,53686	x ΔT	1,2778
TUB2-200/21D50	3041	1583	1,2778	50	20,51370	$\phi =$	20,51370	x ΔT	1,2778

W imieniu producenta podpisać:

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

Z-ca Prezesa ds. realizacji

Bartosz Ścierzyński

Nowa Wieś 03.03.2023

INSTAL PROJEKT sp. z o.o.

(dawniej INSTAL-PROJEKT Gawłowski, Ścierzyński Sp. J.)

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Bartosz Ścierzyński
Bartosz Ścierzyński
 Członek Zarządu

.....
(podpis)

(signature)