

**DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH**  
(DECLARATION OF PERFORMANCE)

Nr (No.) **NDWU/1/TUBUS 2 D50L/2021**

<b>1. Niepowtarzalny kod identyfikacyjny typu wyrobu (Unique identification code of the product-type):</b> TUBUS 2		
<b>2. Zamierzone zastosowanie lub zastosowania: W instalacjach grzewczych w budynkach</b> (Intended use/es: In heating systems in buildings)		
<b>3. Producent (Manufacturer):</b> 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.)		
<b>4. System(-y) oceny i weryfikacji stałości właściwości użytkowych (System/s of AVCP):</b> System 3		
<b>5. Norma zharmonizowana (Harmonised standard):</b> EN 442-1:2014		
<b>6. Jednostka lub jednostki notyfikowane (Notified body/ies):</b> INSTYTUT ENERGETYKI. Numer jednostki notyfikowanej (Notification no.): 1452.		
<b>7. Deklarowane właściwości użytkowe (Declared performance/s):</b>		
Zasadnicze charakterystyki	Właściwości użytkowe	Zharmonizowana specyfikacja techniczna
Essential characteristics	Performance	Harmonised technical specification
<b>Reakcja na ogień</b> (Reaction to fire)	A1	EN 442-1:2014
<b>Uwalnianie substancji niebezpiecznych</b> (Release of dangerous substances)	Nie ma (None)	
<b>Szczelność pod działaniem ciśnienia</b> (Pressure tightness)	Brak przecieku przy ciśnieniu 1,3 krotnie większym od maksymalnego ciśnienia [kPa] (No leakage at 1,3 x maximum operating pressure [kPa])	
<b>Temperatura powierzchni</b> (Surface temperature)	Maksymalnie 95 °C (Maximum 95 °C)	
<b>Odporność na działanie ciśnienia</b> (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: <b>1000 [kPa]</b> (Maximum operating pressure)	
<b>Nominalna moc cieplna (Φ 50 , Φ 30)</b> (Rated thermal output) (Φ 50 , Φ 30)	Patrz Tabela nr.1 (See Table No.1)	
<b>Moc cieplna w różnych warunkach eksploatacyjnych (charakterystyka)</b> (Thermal output in different operating conditions (characteristic curve))	Patrz Tabela nr.1 (See Table No.1)	
<b>Odporność na korozję</b> (Resistance against corrosion)	Brak korozji po 100 h w wilgoci (No corrosion after 100 h humidity)	
<b>Odporność na słabe uderzenia</b> (Resistance against minor impact)	Klasa 0 (Class 0)	
<b>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.</b> (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 2 D50L/2021

Tabela nr 1

(Table no. 1)

Model grzejnika	Normalna moc cieplna [W] (75/65/20°C) $\phi$ 50	Moc cieplna [W] (55/45/20°C) $\phi$ 30	Wykładnik n	$\Delta T$	$K_M$	Moc cieplna w różnych warunkach eksploatacji			
Radiator model	Rated thermal output (75/65/20°C) $\phi$ 50	Rated thermal output (55/45/20°C) $\phi$ 30	Index exponent n	$\Delta T$	$K_M$	Thermal output in different operating conditions (characteristic curve)			
TUB2-020/02D50L	25	13	1,2611	50	0,17716	$\phi =$	0,17716	x $\Delta T$	1,2611
TUB2-020/03D50L	37	19	1,2611	50	0,26574	$\phi =$	0,26574	x $\Delta T$	1,2611
TUB2-020/04D50L	49	26	1,2611	50	0,35432	$\phi =$	0,35432	x $\Delta T$	1,2611
TUB2-020/05D50L	62	32	1,2611	50	0,44290	$\phi =$	0,44290	x $\Delta T$	1,2611
TUB2-020/06D50L	74	39	1,2611	50	0,53148	$\phi =$	0,53148	x $\Delta T$	1,2611
TUB2-020/07D50L	86	45	1,2611	50	0,62006	$\phi =$	0,62006	x $\Delta T$	1,2611
TUB2-020/08D50L	98	52	1,2611	50	0,70864	$\phi =$	0,70864	x $\Delta T$	1,2611
TUB2-020/09D50L	111	58	1,2611	50	0,79722	$\phi =$	0,79722	x $\Delta T$	1,2611
TUB2-020/10D50L	123	65	1,2611	50	0,88580	$\phi =$	0,88580	x $\Delta T$	1,2611
TUB2-020/11D50L	135	71	1,2611	50	0,97438	$\phi =$	0,97438	x $\Delta T$	1,2611
TUB2-020/12D50L	148	78	1,2611	50	1,06296	$\phi =$	1,06296	x $\Delta T$	1,2611
TUB2-020/13D50L	160	84	1,2611	50	1,15154	$\phi =$	1,15154	x $\Delta T$	1,2611
TUB2-020/14D50L	172	90	1,2611	50	1,24012	$\phi =$	1,24012	x $\Delta T$	1,2611
TUB2-020/15D50L	185	97	1,2611	50	1,32869	$\phi =$	1,32869	x $\Delta T$	1,2611
TUB2-020/16D50L	197	103	1,2611	50	1,41727	$\phi =$	1,41727	x $\Delta T$	1,2611
TUB2-020/17D50L	209	110	1,2611	50	1,50585	$\phi =$	1,50585	x $\Delta T$	1,2611
TUB2-020/18D50L	221	116	1,2611	50	1,59443	$\phi =$	1,59443	x $\Delta T$	1,2611
TUB2-020/19D50L	234	123	1,2611	50	1,68301	$\phi =$	1,68301	x $\Delta T$	1,2611
TUB2-020/20D50L	246	129	1,2611	50	1,77159	$\phi =$	1,77159	x $\Delta T$	1,2611
TUB2-020/21D50L	258	136	1,2611	50	1,86017	$\phi =$	1,86017	x $\Delta T$	1,2611
TUB2-020/22D50L	271	142	1,2611	50	1,94875	$\phi =$	1,94875	x $\Delta T$	1,2611
TUB2-020/23D50L	283	149	1,2611	50	2,03733	$\phi =$	2,03733	x $\Delta T$	1,2611
TUB2-020/24D50L	295	155	1,2611	50	2,12591	$\phi =$	2,12591	x $\Delta T$	1,2611
TUB2-020/25D50L	308	161	1,2611	50	2,21449	$\phi =$	2,21449	x $\Delta T$	1,2611
TUB2-020/26D50L	320	168	1,2611	50	2,30307	$\phi =$	2,30307	x $\Delta T$	1,2611
TUB2-020/27D50L	332	174	1,2611	50	2,39165	$\phi =$	2,39165	x $\Delta T$	1,2611
TUB2-020/28D50L	344	181	1,2611	50	2,48023	$\phi =$	2,48023	x $\Delta T$	1,2611
TUB2-020/29D50L	357	187	1,2611	50	2,56881	$\phi =$	2,56881	x $\Delta T$	1,2611
TUB2-020/30D50L	369	194	1,2611	50	2,65739	$\phi =$	2,65739	x $\Delta T$	1,2611
TUB2-020/31D50L	381	200	1,2611	50	2,74597	$\phi =$	2,74597	x $\Delta T$	1,2611
TUB2-020/32D50L	394	207	1,2611	50	2,83455	$\phi =$	2,83455	x $\Delta T$	1,2611
TUB2-020/33D50L	406	213	1,2611	50	2,92313	$\phi =$	2,92313	x $\Delta T$	1,2611
TUB2-020/34D50L	418	220	1,2611	50	3,01171	$\phi =$	3,01171	x $\Delta T$	1,2611
TUB2-020/35D50L	431	226	1,2611	50	3,10029	$\phi =$	3,10029	x $\Delta T$	1,2611
TUB2-020/36D50L	443	233	1,2611	50	3,18887	$\phi =$	3,18887	x $\Delta T$	1,2611
TUB2-020/37D50L	455	239	1,2611	50	3,27745	$\phi =$	3,27745	x $\Delta T$	1,2611
TUB2-020/38D50L	467	245	1,2611	50	3,36603	$\phi =$	3,36603	x $\Delta T$	1,2611
TUB2-020/39D50L	480	252	1,2611	50	3,45461	$\phi =$	3,45461	x $\Delta T$	1,2611
TUB2-020/40D50L	492	258	1,2611	50	3,54319	$\phi =$	3,54319	x $\Delta T$	1,2611
TUB2-020/41D50L	504	265	1,2611	50	3,63177	$\phi =$	3,63177	x $\Delta T$	1,2611
TUB2-020/42D50L	517	271	1,2611	50	3,72035	$\phi =$	3,72035	x $\Delta T$	1,2611
TUB2-020/43D50L	529	278	1,2611	50	3,80893	$\phi =$	3,80893	x $\Delta T$	1,2611
TUB2-020/44D50L	541	284	1,2611	50	3,89751	$\phi =$	3,89751	x $\Delta T$	1,2611
TUB2-020/45D50L	554	291	1,2611	50	3,98608	$\phi =$	3,98608	x $\Delta T$	1,2611
TUB2-030/02D50L	40	21	1,2613	50	0,28640	$\phi =$	0,28640	x $\Delta T$	1,2613
TUB2-030/03D50L	60	31	1,2613	50	0,42960	$\phi =$	0,42960	x $\Delta T$	1,2613
TUB2-030/04D50L	80	42	1,2613	50	0,57280	$\phi =$	0,57280	x $\Delta T$	1,2613
TUB2-030/05D50L	100	52	1,2613	50	0,71600	$\phi =$	0,71600	x $\Delta T$	1,2613
TUB2-030/06D50L	119	63	1,2613	50	0,85920	$\phi =$	0,85920	x $\Delta T$	1,2613
TUB2-030/07D50L	139	73	1,2613	50	1,00240	$\phi =$	1,00240	x $\Delta T$	1,2613
TUB2-030/08D50L	159	84	1,2613	50	1,14560	$\phi =$	1,14560	x $\Delta T$	1,2613
TUB2-030/09D50L	179	94	1,2613	50	1,28880	$\phi =$	1,28880	x $\Delta T$	1,2613
TUB2-030/10D50L	199	104	1,2613	50	1,43200	$\phi =$	1,43200	x $\Delta T$	1,2613
TUB2-030/11D50L	219	115	1,2613	50	1,57520	$\phi =$	1,57520	x $\Delta T$	1,2613
TUB2-030/12D50L	239	125	1,2613	50	1,71840	$\phi =$	1,71840	x $\Delta T$	1,2613
TUB2-030/13D50L	259	136	1,2613	50	1,86160	$\phi =$	1,86160	x $\Delta T$	1,2613
TUB2-030/14D50L	279	146	1,2613	50	2,00480	$\phi =$	2,00480	x $\Delta T$	1,2613
TUB2-030/15D50L	299	157	1,2613	50	2,14800	$\phi =$	2,14800	x $\Delta T$	1,2613
TUB2-030/16D50L	318	167	1,2613	50	2,29120	$\phi =$	2,29120	x $\Delta T$	1,2613

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TUB2-030/17D50L	338	178	1,2613	50	2,43440	$\phi =$	2,43440	$\times \Delta T$	1,2613
TUB2-030/18D50L	358	188	1,2613	50	2,57760	$\phi =$	2,57760	$\times \Delta T$	1,2613
TUB2-030/19D50L	378	199	1,2613	50	2,72079	$\phi =$	2,72079	$\times \Delta T$	1,2613
TUB2-030/20D50L	398	209	1,2613	50	2,86399	$\phi =$	2,86399	$\times \Delta T$	1,2613
TUB2-030/21D50L	418	219	1,2613	50	3,00719	$\phi =$	3,00719	$\times \Delta T$	1,2613
TUB2-030/22D50L	438	230	1,2613	50	3,15039	$\phi =$	3,15039	$\times \Delta T$	1,2613
TUB2-030/23D50L	458	240	1,2613	50	3,29359	$\phi =$	3,29359	$\times \Delta T$	1,2613
TUB2-030/24D50L	478	251	1,2613	50	3,43679	$\phi =$	3,43679	$\times \Delta T$	1,2613
TUB2-030/25D50L	498	261	1,2613	50	3,57999	$\phi =$	3,57999	$\times \Delta T$	1,2613
TUB2-030/26D50L	517	272	1,2613	50	3,72319	$\phi =$	3,72319	$\times \Delta T$	1,2613
TUB2-030/27D50L	537	282	1,2613	50	3,86639	$\phi =$	3,86639	$\times \Delta T$	1,2613
TUB2-030/28D50L	557	293	1,2613	50	4,00959	$\phi =$	4,00959	$\times \Delta T$	1,2613
TUB2-030/29D50L	577	303	1,2613	50	4,15279	$\phi =$	4,15279	$\times \Delta T$	1,2613
TUB2-030/30D50L	597	313	1,2613	50	4,29599	$\phi =$	4,29599	$\times \Delta T$	1,2613
TUB2-030/31D50L	617	324	1,2613	50	4,43919	$\phi =$	4,43919	$\times \Delta T$	1,2613
TUB2-030/32D50L	637	334	1,2613	50	4,58239	$\phi =$	4,58239	$\times \Delta T$	1,2613
TUB2-030/33D50L	657	345	1,2613	50	4,72559	$\phi =$	4,72559	$\times \Delta T$	1,2613
TUB2-030/34D50L	677	355	1,2613	50	4,86879	$\phi =$	4,86879	$\times \Delta T$	1,2613
TUB2-030/35D50L	697	366	1,2613	50	5,01199	$\phi =$	5,01199	$\times \Delta T$	1,2613
TUB2-030/36D50L	716	376	1,2613	50	5,15519	$\phi =$	5,15519	$\times \Delta T$	1,2613
TUB2-030/37D50L	736	387	1,2613	50	5,29839	$\phi =$	5,29839	$\times \Delta T$	1,2613
TUB2-030/38D50L	756	397	1,2613	50	5,44159	$\phi =$	5,44159	$\times \Delta T$	1,2613
TUB2-030/39D50L	776	407	1,2613	50	5,58479	$\phi =$	5,58479	$\times \Delta T$	1,2613
TUB2-030/40D50L	796	418	1,2613	50	5,72799	$\phi =$	5,72799	$\times \Delta T$	1,2613
TUB2-030/41D50L	816	428	1,2613	50	5,87119	$\phi =$	5,87119	$\times \Delta T$	1,2613
TUB2-030/42D50L	836	439	1,2613	50	6,01439	$\phi =$	6,01439	$\times \Delta T$	1,2613
TUB2-030/43D50L	856	449	1,2613	50	6,15759	$\phi =$	6,15759	$\times \Delta T$	1,2613
TUB2-030/44D50L	876	460	1,2613	50	6,30079	$\phi =$	6,30079	$\times \Delta T$	1,2613
TUB2-030/45D50L	896	470	1,2613	50	6,44399	$\phi =$	6,44399	$\times \Delta T$	1,2613
TUB2-040/02D50L	56	29	1,2616	50	0,39963	$\phi =$	0,39963	$\times \Delta T$	1,2616
TUB2-040/03D50L	83	44	1,2616	50	0,59944	$\phi =$	0,59944	$\times \Delta T$	1,2616
TUB2-040/04D50L	111	58	1,2616	50	0,79925	$\phi =$	0,79925	$\times \Delta T$	1,2616
TUB2-040/05D50L	139	73	1,2616	50	0,99907	$\phi =$	0,99907	$\times \Delta T$	1,2616
TUB2-040/06D50L	167	88	1,2616	50	1,19888	$\phi =$	1,19888	$\times \Delta T$	1,2616
TUB2-040/07D50L	195	102	1,2616	50	1,39869	$\phi =$	1,39869	$\times \Delta T$	1,2616
TUB2-040/08D50L	222	117	1,2616	50	1,59851	$\phi =$	1,59851	$\times \Delta T$	1,2616
TUB2-040/09D50L	250	131	1,2616	50	1,79832	$\phi =$	1,79832	$\times \Delta T$	1,2616
TUB2-040/10D50L	278	146	1,2616	50	1,99813	$\phi =$	1,99813	$\times \Delta T$	1,2616
TUB2-040/11D50L	306	161	1,2616	50	2,19795	$\phi =$	2,19795	$\times \Delta T$	1,2616
TUB2-040/12D50L	334	175	1,2616	50	2,39776	$\phi =$	2,39776	$\times \Delta T$	1,2616
TUB2-040/13D50L	361	190	1,2616	50	2,59757	$\phi =$	2,59757	$\times \Delta T$	1,2616
TUB2-040/14D50L	389	204	1,2616	50	2,79739	$\phi =$	2,79739	$\times \Delta T$	1,2616
TUB2-040/15D50L	417	219	1,2616	50	2,99720	$\phi =$	2,99720	$\times \Delta T$	1,2616
TUB2-040/16D50L	445	233	1,2616	50	3,19701	$\phi =$	3,19701	$\times \Delta T$	1,2616
TUB2-040/17D50L	473	248	1,2616	50	3,39682	$\phi =$	3,39682	$\times \Delta T$	1,2616
TUB2-040/18D50L	500	263	1,2616	50	3,59664	$\phi =$	3,59664	$\times \Delta T$	1,2616
TUB2-040/19D50L	528	277	1,2616	50	3,79645	$\phi =$	3,79645	$\times \Delta T$	1,2616
TUB2-040/20D50L	556	292	1,2616	50	3,99626	$\phi =$	3,99626	$\times \Delta T$	1,2616
TUB2-040/21D50L	584	306	1,2616	50	4,19608	$\phi =$	4,19608	$\times \Delta T$	1,2616
TUB2-040/22D50L	612	321	1,2616	50	4,39589	$\phi =$	4,39589	$\times \Delta T$	1,2616
TUB2-040/23D50L	639	336	1,2616	50	4,59570	$\phi =$	4,59570	$\times \Delta T$	1,2616
TUB2-040/24D50L	667	350	1,2616	50	4,79552	$\phi =$	4,79552	$\times \Delta T$	1,2616
TUB2-040/25D50L	695	365	1,2616	50	4,99533	$\phi =$	4,99533	$\times \Delta T$	1,2616
TUB2-040/26D50L	723	379	1,2616	50	5,19514	$\phi =$	5,19514	$\times \Delta T$	1,2616
TUB2-040/27D50L	751	394	1,2616	50	5,39496	$\phi =$	5,39496	$\times \Delta T$	1,2616
TUB2-040/28D50L	778	409	1,2616	50	5,59477	$\phi =$	5,59477	$\times \Delta T$	1,2616
TUB2-040/29D50L	806	423	1,2616	50	5,79458	$\phi =$	5,79458	$\times \Delta T$	1,2616
TUB2-040/30D50L	834	438	1,2616	50	5,99440	$\phi =$	5,99440	$\times \Delta T$	1,2616
TUB2-040/31D50L	862	452	1,2616	50	6,19421	$\phi =$	6,19421	$\times \Delta T$	1,2616
TUB2-040/32D50L	890	467	1,2616	50	6,39402	$\phi =$	6,39402	$\times \Delta T$	1,2616
TUB2-040/33D50L	917	482	1,2616	50	6,59384	$\phi =$	6,59384	$\times \Delta T$	1,2616
TUB2-040/34D50L	945	496	1,2616	50	6,79365	$\phi =$	6,79365	$\times \Delta T$	1,2616
TUB2-040/35D50L	973	511	1,2616	50	6,99346	$\phi =$	6,99346	$\times \Delta T$	1,2616
TUB2-040/36D50L	1001	525	1,2616	50	7,19328	$\phi =$	7,19328	$\times \Delta T$	1,2616
TUB2-040/37D50L	1029	540	1,2616	50	7,39309	$\phi =$	7,39309	$\times \Delta T$	1,2616

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TUB2-040/38D50L	1056	555	1,2616	50	7,59290	$\phi =$	7,59290	$\times \Delta T$	1,2616
TUB2-040/39D50L	1084	569	1,2616	50	7,79272	$\phi =$	7,79272	$\times \Delta T$	1,2616
TUB2-040/40D50L	1112	584	1,2616	50	7,99253	$\phi =$	7,99253	$\times \Delta T$	1,2616
TUB2-040/41D50L	1140	598	1,2616	50	8,19234	$\phi =$	8,19234	$\times \Delta T$	1,2616
TUB2-040/42D50L	1168	613	1,2616	50	8,39216	$\phi =$	8,39216	$\times \Delta T$	1,2616
TUB2-040/43D50L	1195	628	1,2616	50	8,59197	$\phi =$	8,59197	$\times \Delta T$	1,2616
TUB2-040/44D50L	1223	642	1,2616	50	8,79178	$\phi =$	8,79178	$\times \Delta T$	1,2616
TUB2-040/45D50L	1251	657	1,2616	50	8,99160	$\phi =$	8,99160	$\times \Delta T$	1,2616
TUB2-050/02D50L	72	38	1,2620	50	0,51526	$\phi =$	0,51526	$\times \Delta T$	1,2620
TUB2-050/03D50L	108	57	1,2620	50	0,77289	$\phi =$	0,77289	$\times \Delta T$	1,2620
TUB2-050/04D50L	144	75	1,2620	50	1,03051	$\phi =$	1,03051	$\times \Delta T$	1,2620
TUB2-050/05D50L	180	94	1,2620	50	1,28814	$\phi =$	1,28814	$\times \Delta T$	1,2620
TUB2-050/06D50L	215	113	1,2620	50	1,54577	$\phi =$	1,54577	$\times \Delta T$	1,2620
TUB2-050/07D50L	251	132	1,2620	50	1,80340	$\phi =$	1,80340	$\times \Delta T$	1,2620
TUB2-050/08D50L	287	151	1,2620	50	2,06103	$\phi =$	2,06103	$\times \Delta T$	1,2620
TUB2-050/09D50L	323	170	1,2620	50	2,31866	$\phi =$	2,31866	$\times \Delta T$	1,2620
TUB2-050/10D50L	359	188	1,2620	50	2,57629	$\phi =$	2,57629	$\times \Delta T$	1,2620
TUB2-050/11D50L	395	207	1,2620	50	2,83392	$\phi =$	2,83392	$\times \Delta T$	1,2620
TUB2-050/12D50L	431	226	1,2620	50	3,09154	$\phi =$	3,09154	$\times \Delta T$	1,2620
TUB2-050/13D50L	467	245	1,2620	50	3,34917	$\phi =$	3,34917	$\times \Delta T$	1,2620
TUB2-050/14D50L	503	264	1,2620	50	3,60680	$\phi =$	3,60680	$\times \Delta T$	1,2620
TUB2-050/15D50L	539	283	1,2620	50	3,86443	$\phi =$	3,86443	$\times \Delta T$	1,2620
TUB2-050/16D50L	574	301	1,2620	50	4,12206	$\phi =$	4,12206	$\times \Delta T$	1,2620
TUB2-050/17D50L	610	320	1,2620	50	4,37969	$\phi =$	4,37969	$\times \Delta T$	1,2620
TUB2-050/18D50L	646	339	1,2620	50	4,63732	$\phi =$	4,63732	$\times \Delta T$	1,2620
TUB2-050/19D50L	682	358	1,2620	50	4,89495	$\phi =$	4,89495	$\times \Delta T$	1,2620
TUB2-050/20D50L	718	377	1,2620	50	5,15257	$\phi =$	5,15257	$\times \Delta T$	1,2620
TUB2-050/21D50L	754	396	1,2620	50	5,41020	$\phi =$	5,41020	$\times \Delta T$	1,2620
TUB2-050/22D50L	790	415	1,2620	50	5,66783	$\phi =$	5,66783	$\times \Delta T$	1,2620
TUB2-050/23D50L	826	433	1,2620	50	5,92546	$\phi =$	5,92546	$\times \Delta T$	1,2620
TUB2-050/24D50L	862	452	1,2620	50	6,18309	$\phi =$	6,18309	$\times \Delta T$	1,2620
TUB2-050/25D50L	898	471	1,2620	50	6,44072	$\phi =$	6,44072	$\times \Delta T$	1,2620
TUB2-050/26D50L	933	490	1,2620	50	6,69835	$\phi =$	6,69835	$\times \Delta T$	1,2620
TUB2-050/27D50L	969	509	1,2620	50	6,95598	$\phi =$	6,95598	$\times \Delta T$	1,2620
TUB2-050/28D50L	1005	528	1,2620	50	7,21360	$\phi =$	7,21360	$\times \Delta T$	1,2620
TUB2-050/29D50L	1041	546	1,2620	50	7,47123	$\phi =$	7,47123	$\times \Delta T$	1,2620
TUB2-050/30D50L	1077	565	1,2620	50	7,72886	$\phi =$	7,72886	$\times \Delta T$	1,2620
TUB2-050/31D50L	1113	584	1,2620	50	7,98649	$\phi =$	7,98649	$\times \Delta T$	1,2620
TUB2-050/32D50L	1149	603	1,2620	50	8,24412	$\phi =$	8,24412	$\times \Delta T$	1,2620
TUB2-050/33D50L	1185	622	1,2620	50	8,50175	$\phi =$	8,50175	$\times \Delta T$	1,2620
TUB2-050/34D50L	1221	641	1,2620	50	8,75938	$\phi =$	8,75938	$\times \Delta T$	1,2620
TUB2-050/35D50L	1257	659	1,2620	50	9,01701	$\phi =$	9,01701	$\times \Delta T$	1,2620
TUB2-050/36D50L	1292	678	1,2620	50	9,27463	$\phi =$	9,27463	$\times \Delta T$	1,2620
TUB2-050/37D50L	1328	697	1,2620	50	9,53226	$\phi =$	9,53226	$\times \Delta T$	1,2620
TUB2-050/38D50L	1364	716	1,2620	50	9,78989	$\phi =$	9,78989	$\times \Delta T$	1,2620
TUB2-050/39D50L	1400	735	1,2620	50	10,04752	$\phi =$	10,04752	$\times \Delta T$	1,2620
TUB2-050/40D50L	1436	754	1,2620	50	10,30515	$\phi =$	10,30515	$\times \Delta T$	1,2620
TUB2-050/41D50L	1472	773	1,2620	50	10,56278	$\phi =$	10,56278	$\times \Delta T$	1,2620
TUB2-050/42D50L	1508	791	1,2620	50	10,82041	$\phi =$	10,82041	$\times \Delta T$	1,2620
TUB2-050/43D50L	1544	810	1,2620	50	11,07804	$\phi =$	11,07804	$\times \Delta T$	1,2620
TUB2-050/44D50L	1580	829	1,2620	50	11,33566	$\phi =$	11,33566	$\times \Delta T$	1,2620
TUB2-050/45D50L	1616	848	1,2620	50	11,59329	$\phi =$	11,59329	$\times \Delta T$	1,2620
TUB2-070/02D50L	105	55	1,2631	50	0,74742	$\phi =$	0,74742	$\times \Delta T$	1,2631
TUB2-070/03D50L	157	82	1,2631	50	1,12112	$\phi =$	1,12112	$\times \Delta T$	1,2631
TUB2-070/04D50L	209	110	1,2631	50	1,49483	$\phi =$	1,49483	$\times \Delta T$	1,2631
TUB2-070/05D50L	262	137	1,2631	50	1,86854	$\phi =$	1,86854	$\times \Delta T$	1,2631
TUB2-070/06D50L	314	165	1,2631	50	2,24225	$\phi =$	2,24225	$\times \Delta T$	1,2631
TUB2-070/07D50L	366	192	1,2631	50	2,61596	$\phi =$	2,61596	$\times \Delta T$	1,2631
TUB2-070/08D50L	418	219	1,2631	50	2,98967	$\phi =$	2,98967	$\times \Delta T$	1,2631
TUB2-070/09D50L	471	247	1,2631	50	3,36337	$\phi =$	3,36337	$\times \Delta T$	1,2631
TUB2-070/10D50L	523	274	1,2631	50	3,73708	$\phi =$	3,73708	$\times \Delta T$	1,2631
TUB2-070/11D50L	575	302	1,2631	50	4,11079	$\phi =$	4,11079	$\times \Delta T$	1,2631
TUB2-070/12D50L	628	329	1,2631	50	4,48450	$\phi =$	4,48450	$\times \Delta T$	1,2631
TUB2-070/13D50L	680	357	1,2631	50	4,85821	$\phi =$	4,85821	$\times \Delta T$	1,2631
TUB2-070/14D50L	732	384	1,2631	50	5,23192	$\phi =$	5,23192	$\times \Delta T$	1,2631

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TUB2-070/15D50L	785	412	1,2631	50	5,60562	$\phi =$	5,60562	$\times \Delta T$	1,2631
TUB2-070/16D50L	837	439	1,2631	50	5,97933	$\phi =$	5,97933	$\times \Delta T$	1,2631
TUB2-070/17D50L	889	466	1,2631	50	6,35304	$\phi =$	6,35304	$\times \Delta T$	1,2631
TUB2-070/18D50L	941	494	1,2631	50	6,72675	$\phi =$	6,72675	$\times \Delta T$	1,2631
TUB2-070/19D50L	994	521	1,2631	50	7,10046	$\phi =$	7,10046	$\times \Delta T$	1,2631
TUB2-070/20D50L	1046	549	1,2631	50	7,47416	$\phi =$	7,47416	$\times \Delta T$	1,2631
TUB2-070/21D50L	1098	576	1,2631	50	7,84787	$\phi =$	7,84787	$\times \Delta T$	1,2631
TUB2-070/22D50L	1151	604	1,2631	50	8,22158	$\phi =$	8,22158	$\times \Delta T$	1,2631
TUB2-070/23D50L	1203	631	1,2631	50	8,59529	$\phi =$	8,59529	$\times \Delta T$	1,2631
TUB2-070/24D50L	1255	658	1,2631	50	8,96900	$\phi =$	8,96900	$\times \Delta T$	1,2631
TUB2-070/25D50L	1308	686	1,2631	50	9,34271	$\phi =$	9,34271	$\times \Delta T$	1,2631
TUB2-070/26D50L	1360	713	1,2631	50	9,71641	$\phi =$	9,71641	$\times \Delta T$	1,2631
TUB2-070/27D50L	1412	741	1,2631	50	10,09012	$\phi =$	10,09012	$\times \Delta T$	1,2631
TUB2-070/28D50L	1464	768	1,2631	50	10,46383	$\phi =$	10,46383	$\times \Delta T$	1,2631
TUB2-070/29D50L	1517	796	1,2631	50	10,83754	$\phi =$	10,83754	$\times \Delta T$	1,2631
TUB2-070/30D50L	1569	823	1,2631	50	11,21125	$\phi =$	11,21125	$\times \Delta T$	1,2631
TUB2-070/31D50L	1621	850	1,2631	50	11,58496	$\phi =$	11,58496	$\times \Delta T$	1,2631
TUB2-070/32D50L	1674	878	1,2631	50	11,95866	$\phi =$	11,95866	$\times \Delta T$	1,2631
TUB2-070/33D50L	1726	905	1,2631	50	12,33237	$\phi =$	12,33237	$\times \Delta T$	1,2631
TUB2-070/34D50L	1778	933	1,2631	50	12,70608	$\phi =$	12,70608	$\times \Delta T$	1,2631
TUB2-070/35D50L	1831	960	1,2631	50	13,07979	$\phi =$	13,07979	$\times \Delta T$	1,2631
TUB2-070/36D50L	1883	988	1,2631	50	13,45350	$\phi =$	13,45350	$\times \Delta T$	1,2631
TUB2-070/37D50L	1935	1015	1,2631	50	13,82720	$\phi =$	13,82720	$\times \Delta T$	1,2631
TUB2-070/38D50L	1987	1042	1,2631	50	14,20091	$\phi =$	14,20091	$\times \Delta T$	1,2631
TUB2-070/39D50L	2040	1070	1,2631	50	14,57462	$\phi =$	14,57462	$\times \Delta T$	1,2631
TUB2-070/40D50L	2092	1097	1,2631	50	14,94833	$\phi =$	14,94833	$\times \Delta T$	1,2631
TUB2-070/41D50L	2144	1125	1,2631	50	15,32204	$\phi =$	15,32204	$\times \Delta T$	1,2631
TUB2-070/42D50L	2197	1152	1,2631	50	15,69575	$\phi =$	15,69575	$\times \Delta T$	1,2631
TUB2-070/43D50L	2249	1180	1,2631	50	16,06945	$\phi =$	16,06945	$\times \Delta T$	1,2631
TUB2-070/44D50L	2301	1207	1,2631	50	16,44316	$\phi =$	16,44316	$\times \Delta T$	1,2631
TUB2-070/45D50L	2354	1235	1,2631	50	16,81687	$\phi =$	16,81687	$\times \Delta T$	1,2631
TUB2-080/02D50L	121	63	1,2638	50	0,86224	$\phi =$	0,86224	$\times \Delta T$	1,2638
TUB2-080/03D50L	182	95	1,2638	50	1,29336	$\phi =$	1,29336	$\times \Delta T$	1,2638
TUB2-080/04D50L	242	127	1,2638	50	1,72448	$\phi =$	1,72448	$\times \Delta T$	1,2638
TUB2-080/05D50L	303	159	1,2638	50	2,15559	$\phi =$	2,15559	$\times \Delta T$	1,2638
TUB2-080/06D50L	363	190	1,2638	50	2,58671	$\phi =$	2,58671	$\times \Delta T$	1,2638
TUB2-080/07D50L	424	222	1,2638	50	3,01783	$\phi =$	3,01783	$\times \Delta T$	1,2638
TUB2-080/08D50L	484	254	1,2638	50	3,44895	$\phi =$	3,44895	$\times \Delta T$	1,2638
TUB2-080/09D50L	545	286	1,2638	50	3,88007	$\phi =$	3,88007	$\times \Delta T$	1,2638
TUB2-080/10D50L	605	317	1,2638	50	4,31119	$\phi =$	4,31119	$\times \Delta T$	1,2638
TUB2-080/11D50L	666	349	1,2638	50	4,74231	$\phi =$	4,74231	$\times \Delta T$	1,2638
TUB2-080/12D50L	726	381	1,2638	50	5,17343	$\phi =$	5,17343	$\times \Delta T$	1,2638
TUB2-080/13D50L	787	412	1,2638	50	5,60455	$\phi =$	5,60455	$\times \Delta T$	1,2638
TUB2-080/14D50L	847	444	1,2638	50	6,03566	$\phi =$	6,03566	$\times \Delta T$	1,2638
TUB2-080/15D50L	908	476	1,2638	50	6,46678	$\phi =$	6,46678	$\times \Delta T$	1,2638
TUB2-080/16D50L	968	508	1,2638	50	6,89790	$\phi =$	6,89790	$\times \Delta T$	1,2638
TUB2-080/17D50L	1029	539	1,2638	50	7,32902	$\phi =$	7,32902	$\times \Delta T$	1,2638
TUB2-080/18D50L	1089	571	1,2638	50	7,76014	$\phi =$	7,76014	$\times \Delta T$	1,2638
TUB2-080/19D50L	1150	603	1,2638	50	8,19126	$\phi =$	8,19126	$\times \Delta T$	1,2638
TUB2-080/20D50L	1210	634	1,2638	50	8,62238	$\phi =$	8,62238	$\times \Delta T$	1,2638
TUB2-080/21D50L	1271	666	1,2638	50	9,05350	$\phi =$	9,05350	$\times \Delta T$	1,2638
TUB2-080/22D50L	1331	698	1,2638	50	9,48462	$\phi =$	9,48462	$\times \Delta T$	1,2638
TUB2-080/23D50L	1392	730	1,2638	50	9,91574	$\phi =$	9,91574	$\times \Delta T$	1,2638
TUB2-080/24D50L	1452	761	1,2638	50	10,34685	$\phi =$	10,34685	$\times \Delta T$	1,2638
TUB2-080/25D50L	1513	793	1,2638	50	10,77797	$\phi =$	10,77797	$\times \Delta T$	1,2638
TUB2-080/26D50L	1573	825	1,2638	50	11,20909	$\phi =$	11,20909	$\times \Delta T$	1,2638
TUB2-080/27D50L	1634	857	1,2638	50	11,64021	$\phi =$	11,64021	$\times \Delta T$	1,2638
TUB2-080/28D50L	1694	888	1,2638	50	12,07133	$\phi =$	12,07133	$\times \Delta T$	1,2638
TUB2-080/29D50L	1755	920	1,2638	50	12,50245	$\phi =$	12,50245	$\times \Delta T$	1,2638
TUB2-080/30D50L	1815	952	1,2638	50	12,93357	$\phi =$	12,93357	$\times \Delta T$	1,2638
TUB2-080/31D50L	1876	983	1,2638	50	13,36469	$\phi =$	13,36469	$\times \Delta T$	1,2638
TUB2-080/32D50L	1936	1015	1,2638	50	13,79581	$\phi =$	13,79581	$\times \Delta T$	1,2638
TUB2-080/33D50L	1997	1047	1,2638	50	14,22692	$\phi =$	14,22692	$\times \Delta T$	1,2638
TUB2-080/34D50L	2057	1079	1,2638	50	14,65804	$\phi =$	14,65804	$\times \Delta T$	1,2638
TUB2-080/35D50L	2118	1110	1,2638	50	15,08916	$\phi =$	15,08916	$\times \Delta T$	1,2638

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TUB2-080/36D50L	2178	1142	1,2638	50	15,52028	$\phi =$	15,52028	$\times \Delta T$	1,2638
TUB2-080/37D50L	2239	1174	1,2638	50	15,95140	$\phi =$	15,95140	$\times \Delta T$	1,2638
TUB2-080/38D50L	2299	1205	1,2638	50	16,38252	$\phi =$	16,38252	$\times \Delta T$	1,2638
TUB2-080/39D50L	2360	1237	1,2638	50	16,81364	$\phi =$	16,81364	$\times \Delta T$	1,2638
TUB2-080/40D50L	2420	1269	1,2638	50	17,24476	$\phi =$	17,24476	$\times \Delta T$	1,2638
TUB2-080/41D50L	2481	1301	1,2638	50	17,67588	$\phi =$	17,67588	$\times \Delta T$	1,2638
TUB2-080/42D50L	2541	1332	1,2638	50	18,10699	$\phi =$	18,10699	$\times \Delta T$	1,2638
TUB2-080/43D50L	2602	1364	1,2638	50	18,53811	$\phi =$	18,53811	$\times \Delta T$	1,2638
TUB2-080/44D50L	2662	1396	1,2638	50	18,96923	$\phi =$	18,96923	$\times \Delta T$	1,2638
TUB2-080/45D50L	2723	1428	1,2638	50	19,40035	$\phi =$	19,40035	$\times \Delta T$	1,2638
TUB2-090/02D50L	137	72	1,2645	50	0,97643	$\phi =$	0,97643	$\times \Delta T$	1,2645
TUB2-090/03D50L	206	108	1,2645	50	1,46464	$\phi =$	1,46464	$\times \Delta T$	1,2645
TUB2-090/04D50L	275	144	1,2645	50	1,95285	$\phi =$	1,95285	$\times \Delta T$	1,2645
TUB2-090/05D50L	344	180	1,2645	50	2,44106	$\phi =$	2,44106	$\times \Delta T$	1,2645
TUB2-090/06D50L	412	216	1,2645	50	2,92928	$\phi =$	2,92928	$\times \Delta T$	1,2645
TUB2-090/07D50L	481	252	1,2645	50	3,41749	$\phi =$	3,41749	$\times \Delta T$	1,2645
TUB2-090/08D50L	550	288	1,2645	50	3,90570	$\phi =$	3,90570	$\times \Delta T$	1,2645
TUB2-090/09D50L	618	324	1,2645	50	4,39392	$\phi =$	4,39392	$\times \Delta T$	1,2645
TUB2-090/10D50L	687	360	1,2645	50	4,88213	$\phi =$	4,88213	$\times \Delta T$	1,2645
TUB2-090/11D50L	756	396	1,2645	50	5,37034	$\phi =$	5,37034	$\times \Delta T$	1,2645
TUB2-090/12D50L	824	432	1,2645	50	5,85855	$\phi =$	5,85855	$\times \Delta T$	1,2645
TUB2-090/13D50L	893	468	1,2645	50	6,34677	$\phi =$	6,34677	$\times \Delta T$	1,2645
TUB2-090/14D50L	962	504	1,2645	50	6,83498	$\phi =$	6,83498	$\times \Delta T$	1,2645
TUB2-090/15D50L	1031	540	1,2645	50	7,32319	$\phi =$	7,32319	$\times \Delta T$	1,2645
TUB2-090/16D50L	1099	576	1,2645	50	7,81140	$\phi =$	7,81140	$\times \Delta T$	1,2645
TUB2-090/17D50L	1168	612	1,2645	50	8,29962	$\phi =$	8,29962	$\times \Delta T$	1,2645
TUB2-090/18D50L	1237	648	1,2645	50	8,78783	$\phi =$	8,78783	$\times \Delta T$	1,2645
TUB2-090/19D50L	1305	684	1,2645	50	9,27604	$\phi =$	9,27604	$\times \Delta T$	1,2645
TUB2-090/20D50L	1374	720	1,2645	50	9,76426	$\phi =$	9,76426	$\times \Delta T$	1,2645
TUB2-090/21D50L	1443	756	1,2645	50	10,25247	$\phi =$	10,25247	$\times \Delta T$	1,2645
TUB2-090/22D50L	1511	792	1,2645	50	10,74068	$\phi =$	10,74068	$\times \Delta T$	1,2645
TUB2-090/23D50L	1580	828	1,2645	50	11,22889	$\phi =$	11,22889	$\times \Delta T$	1,2645
TUB2-090/24D50L	1649	864	1,2645	50	11,71711	$\phi =$	11,71711	$\times \Delta T$	1,2645
TUB2-090/25D50L	1718	900	1,2645	50	12,20532	$\phi =$	12,20532	$\times \Delta T$	1,2645
TUB2-090/26D50L	1786	936	1,2645	50	12,69353	$\phi =$	12,69353	$\times \Delta T$	1,2645
TUB2-090/27D50L	1855	972	1,2645	50	13,18175	$\phi =$	13,18175	$\times \Delta T$	1,2645
TUB2-090/28D50L	1924	1008	1,2645	50	13,66996	$\phi =$	13,66996	$\times \Delta T$	1,2645
TUB2-090/29D50L	1992	1044	1,2645	50	14,15817	$\phi =$	14,15817	$\times \Delta T$	1,2645
TUB2-090/30D50L	2061	1080	1,2645	50	14,64638	$\phi =$	14,64638	$\times \Delta T$	1,2645
TUB2-090/31D50L	2130	1116	1,2645	50	15,13460	$\phi =$	15,13460	$\times \Delta T$	1,2645
TUB2-090/32D50L	2198	1152	1,2645	50	15,62281	$\phi =$	15,62281	$\times \Delta T$	1,2645
TUB2-090/33D50L	2267	1188	1,2645	50	16,11102	$\phi =$	16,11102	$\times \Delta T$	1,2645
TUB2-090/34D50L	2336	1224	1,2645	50	16,59924	$\phi =$	16,59924	$\times \Delta T$	1,2645
TUB2-090/35D50L	2405	1260	1,2645	50	17,08745	$\phi =$	17,08745	$\times \Delta T$	1,2645
TUB2-090/36D50L	2473	1296	1,2645	50	17,57566	$\phi =$	17,57566	$\times \Delta T$	1,2645
TUB2-090/37D50L	2542	1332	1,2645	50	18,06387	$\phi =$	18,06387	$\times \Delta T$	1,2645
TUB2-090/38D50L	2611	1368	1,2645	50	18,55209	$\phi =$	18,55209	$\times \Delta T$	1,2645
TUB2-090/39D50L	2679	1404	1,2645	50	19,04030	$\phi =$	19,04030	$\times \Delta T$	1,2645
TUB2-090/40D50L	2748	1440	1,2645	50	19,52851	$\phi =$	19,52851	$\times \Delta T$	1,2645
TUB2-090/41D50L	2817	1476	1,2645	50	20,01673	$\phi =$	20,01673	$\times \Delta T$	1,2645
TUB2-090/42D50L	2885	1512	1,2645	50	20,50494	$\phi =$	20,50494	$\times \Delta T$	1,2645
TUB2-090/43D50L	2954	1548	1,2645	50	20,99315	$\phi =$	20,99315	$\times \Delta T$	1,2645
TUB2-090/44D50L	3023	1584	1,2645	50	21,48136	$\phi =$	21,48136	$\times \Delta T$	1,2645
TUB2-090/45D50L	3092	1620	1,2645	50	21,96958	$\phi =$	21,96958	$\times \Delta T$	1,2645
TUB2-100/02D50L	153	80	1,2653	50	1,08672	$\phi =$	1,08672	$\times \Delta T$	1,2653
TUB2-100/03D50L	230	121	1,2653	50	1,63008	$\phi =$	1,63008	$\times \Delta T$	1,2653
TUB2-100/04D50L	307	161	1,2653	50	2,17344	$\phi =$	2,17344	$\times \Delta T$	1,2653
TUB2-100/05D50L	384	201	1,2653	50	2,71681	$\phi =$	2,71681	$\times \Delta T$	1,2653
TUB2-100/06D50L	460	241	1,2653	50	3,26017	$\phi =$	3,26017	$\times \Delta T$	1,2653
TUB2-100/07D50L	537	281	1,2653	50	3,80353	$\phi =$	3,80353	$\times \Delta T$	1,2653
TUB2-100/08D50L	614	321	1,2653	50	4,34689	$\phi =$	4,34689	$\times \Delta T$	1,2653
TUB2-100/09D50L	690	362	1,2653	50	4,89025	$\phi =$	4,89025	$\times \Delta T$	1,2653
TUB2-100/10D50L	767	402	1,2653	50	5,43361	$\phi =$	5,43361	$\times \Delta T$	1,2653
TUB2-100/11D50L	844	442	1,2653	50	5,97697	$\phi =$	5,97697	$\times \Delta T$	1,2653
TUB2-100/12D50L	920	482	1,2653	50	6,52033	$\phi =$	6,52033	$\times \Delta T$	1,2653



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TUB2-100/13D50L	997	522	1,2653	50	7,06370	$\phi =$	7,06370	$\times \Delta T$	1,2653
TUB2-100/14D50L	1074	563	1,2653	50	7,60706	$\phi =$	7,60706	$\times \Delta T$	1,2653
TUB2-100/15D50L	1151	603	1,2653	50	8,15042	$\phi =$	8,15042	$\times \Delta T$	1,2653
TUB2-100/16D50L	1227	643	1,2653	50	8,69378	$\phi =$	8,69378	$\times \Delta T$	1,2653
TUB2-100/17D50L	1304	683	1,2653	50	9,23714	$\phi =$	9,23714	$\times \Delta T$	1,2653
TUB2-100/18D50L	1381	723	1,2653	50	9,78050	$\phi =$	9,78050	$\times \Delta T$	1,2653
TUB2-100/19D50L	1457	764	1,2653	50	10,32386	$\phi =$	10,32386	$\times \Delta T$	1,2653
TUB2-100/20D50L	1534	804	1,2653	50	10,86722	$\phi =$	10,86722	$\times \Delta T$	1,2653
TUB2-100/21D50L	1611	844	1,2653	50	11,41059	$\phi =$	11,41059	$\times \Delta T$	1,2653
TUB2-100/22D50L	1687	884	1,2653	50	11,95395	$\phi =$	11,95395	$\times \Delta T$	1,2653
TUB2-100/23D50L	1764	924	1,2653	50	12,49731	$\phi =$	12,49731	$\times \Delta T$	1,2653
TUB2-100/24D50L	1841	964	1,2653	50	13,04067	$\phi =$	13,04067	$\times \Delta T$	1,2653
TUB2-100/25D50L	1918	1005	1,2653	50	13,58403	$\phi =$	13,58403	$\times \Delta T$	1,2653
TUB2-100/26D50L	1994	1045	1,2653	50	14,12739	$\phi =$	14,12739	$\times \Delta T$	1,2653
TUB2-100/27D50L	2071	1085	1,2653	50	14,67075	$\phi =$	14,67075	$\times \Delta T$	1,2653
TUB2-100/28D50L	2148	1125	1,2653	50	15,21411	$\phi =$	15,21411	$\times \Delta T$	1,2653
TUB2-100/29D50L	2224	1165	1,2653	50	15,75747	$\phi =$	15,75747	$\times \Delta T$	1,2653
TUB2-100/30D50L	2301	1206	1,2653	50	16,30084	$\phi =$	16,30084	$\times \Delta T$	1,2653
TUB2-100/31D50L	2378	1246	1,2653	50	16,84420	$\phi =$	16,84420	$\times \Delta T$	1,2653
TUB2-100/32D50L	2454	1286	1,2653	50	17,38756	$\phi =$	17,38756	$\times \Delta T$	1,2653
TUB2-100/33D50L	2531	1326	1,2653	50	17,93092	$\phi =$	17,93092	$\times \Delta T$	1,2653
TUB2-100/34D50L	2608	1366	1,2653	50	18,47428	$\phi =$	18,47428	$\times \Delta T$	1,2653
TUB2-100/35D50L	2685	1407	1,2653	50	19,01764	$\phi =$	19,01764	$\times \Delta T$	1,2653
TUB2-100/36D50L	2761	1447	1,2653	50	19,56100	$\phi =$	19,56100	$\times \Delta T$	1,2653
TUB2-100/37D50L	2838	1487	1,2653	50	20,10436	$\phi =$	20,10436	$\times \Delta T$	1,2653
TUB2-100/38D50L	2915	1527	1,2653	50	20,64773	$\phi =$	20,64773	$\times \Delta T$	1,2653
TUB2-100/39D50L	2991	1567	1,2653	50	21,19109	$\phi =$	21,19109	$\times \Delta T$	1,2653
TUB2-100/40D50L	3068	1607	1,2653	50	21,73445	$\phi =$	21,73445	$\times \Delta T$	1,2653
TUB2-100/41D50L	3145	1648	1,2653	50	22,27781	$\phi =$	22,27781	$\times \Delta T$	1,2653
TUB2-100/42D50L	3221	1688	1,2653	50	22,82117	$\phi =$	22,82117	$\times \Delta T$	1,2653
TUB2-120/02D50L	185	97	1,2672	50	1,30088	$\phi =$	1,30088	$\times \Delta T$	1,2672
TUB2-120/03D50L	278	145	1,2672	50	1,95132	$\phi =$	1,95132	$\times \Delta T$	1,2672
TUB2-120/04D50L	370	194	1,2672	50	2,60176	$\phi =$	2,60176	$\times \Delta T$	1,2672
TUB2-120/05D50L	463	242	1,2672	50	3,25220	$\phi =$	3,25220	$\times \Delta T$	1,2672
TUB2-120/06D50L	555	291	1,2672	50	3,90264	$\phi =$	3,90264	$\times \Delta T$	1,2672
TUB2-120/07D50L	648	339	1,2672	50	4,55308	$\phi =$	4,55308	$\times \Delta T$	1,2672
TUB2-120/08D50L	740	387	1,2672	50	5,20352	$\phi =$	5,20352	$\times \Delta T$	1,2672
TUB2-120/09D50L	833	436	1,2672	50	5,85396	$\phi =$	5,85396	$\times \Delta T$	1,2672
TUB2-120/10D50L	925	484	1,2672	50	6,50440	$\phi =$	6,50440	$\times \Delta T$	1,2672
TUB2-120/11D50L	1018	533	1,2672	50	7,15484	$\phi =$	7,15484	$\times \Delta T$	1,2672
TUB2-120/12D50L	1110	581	1,2672	50	7,80527	$\phi =$	7,80527	$\times \Delta T$	1,2672
TUB2-120/13D50L	1203	629	1,2672	50	8,45571	$\phi =$	8,45571	$\times \Delta T$	1,2672
TUB2-120/14D50L	1295	678	1,2672	50	9,10615	$\phi =$	9,10615	$\times \Delta T$	1,2672
TUB2-120/15D50L	1388	726	1,2672	50	9,75659	$\phi =$	9,75659	$\times \Delta T$	1,2672
TUB2-120/16D50L	1480	775	1,2672	50	10,40703	$\phi =$	10,40703	$\times \Delta T$	1,2672
TUB2-120/17D50L	1573	823	1,2672	50	11,05747	$\phi =$	11,05747	$\times \Delta T$	1,2672
TUB2-120/18D50L	1665	872	1,2672	50	11,70791	$\phi =$	11,70791	$\times \Delta T$	1,2672
TUB2-120/19D50L	1758	920	1,2672	50	12,35835	$\phi =$	12,35835	$\times \Delta T$	1,2672
TUB2-120/20D50L	1850	968	1,2672	50	13,00879	$\phi =$	13,00879	$\times \Delta T$	1,2672
TUB2-120/21D50L	1943	1017	1,2672	50	13,65923	$\phi =$	13,65923	$\times \Delta T$	1,2672
TUB2-120/22D50L	2035	1065	1,2672	50	14,30967	$\phi =$	14,30967	$\times \Delta T$	1,2672
TUB2-120/23D50L	2128	1114	1,2672	50	14,96011	$\phi =$	14,96011	$\times \Delta T$	1,2672
TUB2-120/24D50L	2220	1162	1,2672	50	15,61055	$\phi =$	15,61055	$\times \Delta T$	1,2672
TUB2-120/25D50L	2313	1210	1,2672	50	16,26099	$\phi =$	16,26099	$\times \Delta T$	1,2672
TUB2-120/26D50L	2405	1259	1,2672	50	16,91143	$\phi =$	16,91143	$\times \Delta T$	1,2672
TUB2-120/27D50L	2498	1307	1,2672	50	17,56187	$\phi =$	17,56187	$\times \Delta T$	1,2672
TUB2-120/28D50L	2590	1356	1,2672	50	18,21231	$\phi =$	18,21231	$\times \Delta T$	1,2672
TUB2-120/29D50L	2683	1404	1,2672	50	18,86275	$\phi =$	18,86275	$\times \Delta T$	1,2672
TUB2-120/30D50L	2775	1453	1,2672	50	19,51319	$\phi =$	19,51319	$\times \Delta T$	1,2672
TUB2-120/31D50L	2868	1501	1,2672	50	20,16363	$\phi =$	20,16363	$\times \Delta T$	1,2672
TUB2-120/32D50L	2960	1549	1,2672	50	20,81407	$\phi =$	20,81407	$\times \Delta T$	1,2672
TUB2-120/33D50L	3053	1598	1,2672	50	21,46451	$\phi =$	21,46451	$\times \Delta T$	1,2672
TUB2-120/34D50L	3145	1646	1,2672	50	22,11494	$\phi =$	22,11494	$\times \Delta T$	1,2672
TUB2-120/35D50L	3238	1695	1,2672	50	22,76538	$\phi =$	22,76538	$\times \Delta T$	1,2672
TUB2-150/02D50L	230	120	1,2706	50	1,59872	$\phi =$	1,59872	$\times \Delta T$	1,2706

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TUB2-150/03D50L	346	181	1,2706	50	2,39807	$\phi =$	2,39807	$\times \Delta T$	1,2706
TUB2-150/04D50L	461	241	1,2706	50	3,19743	$\phi =$	3,19743	$\times \Delta T$	1,2706
TUB2-150/05D50L	576	301	1,2706	50	3,99679	$\phi =$	3,99679	$\times \Delta T$	1,2706
TUB2-150/06D50L	691	361	1,2706	50	4,79615	$\phi =$	4,79615	$\times \Delta T$	1,2706
TUB2-150/07D50L	806	421	1,2706	50	5,59550	$\phi =$	5,59550	$\times \Delta T$	1,2706
TUB2-150/08D50L	922	482	1,2706	50	6,39486	$\phi =$	6,39486	$\times \Delta T$	1,2706
TUB2-150/09D50L	1037	542	1,2706	50	7,19422	$\phi =$	7,19422	$\times \Delta T$	1,2706
TUB2-150/10D50L	1152	602	1,2706	50	7,99358	$\phi =$	7,99358	$\times \Delta T$	1,2706
TUB2-150/11D50L	1267	662	1,2706	50	8,79294	$\phi =$	8,79294	$\times \Delta T$	1,2706
TUB2-150/12D50L	1382	722	1,2706	50	9,59229	$\phi =$	9,59229	$\times \Delta T$	1,2706
TUB2-150/13D50L	1498	783	1,2706	50	10,39165	$\phi =$	10,39165	$\times \Delta T$	1,2706
TUB2-150/14D50L	1613	843	1,2706	50	11,19101	$\phi =$	11,19101	$\times \Delta T$	1,2706
TUB2-150/15D50L	1728	903	1,2706	50	11,99037	$\phi =$	11,99037	$\times \Delta T$	1,2706
TUB2-150/16D50L	1843	963	1,2706	50	12,78972	$\phi =$	12,78972	$\times \Delta T$	1,2706
TUB2-150/17D50L	1958	1023	1,2706	50	13,58908	$\phi =$	13,58908	$\times \Delta T$	1,2706
TUB2-150/18D50L	2074	1084	1,2706	50	14,38844	$\phi =$	14,38844	$\times \Delta T$	1,2706
TUB2-150/19D50L	2189	1144	1,2706	50	15,18780	$\phi =$	15,18780	$\times \Delta T$	1,2706
TUB2-150/20D50L	2304	1204	1,2706	50	15,98716	$\phi =$	15,98716	$\times \Delta T$	1,2706
TUB2-150/21D50L	2419	1264	1,2706	50	16,78651	$\phi =$	16,78651	$\times \Delta T$	1,2706
TUB2-150/22D50L	2534	1324	1,2706	50	17,58587	$\phi =$	17,58587	$\times \Delta T$	1,2706
TUB2-150/23D50L	2650	1385	1,2706	50	18,38523	$\phi =$	18,38523	$\times \Delta T$	1,2706
TUB2-150/24D50L	2765	1445	1,2706	50	19,18459	$\phi =$	19,18459	$\times \Delta T$	1,2706
TUB2-150/25D50L	2880	1505	1,2706	50	19,98394	$\phi =$	19,98394	$\times \Delta T$	1,2706
TUB2-150/26D50L	2995	1565	1,2706	50	20,78330	$\phi =$	20,78330	$\times \Delta T$	1,2706
TUB2-150/27D50L	3110	1625	1,2706	50	21,58266	$\phi =$	21,58266	$\times \Delta T$	1,2706
TUB2-150/28D50L	3226	1686	1,2706	50	22,38202	$\phi =$	22,38202	$\times \Delta T$	1,2706
TUB2-180/02D50L	273	142	1,2747	50	1,86417	$\phi =$	1,86417	$\times \Delta T$	1,2747
TUB2-180/03D50L	410	214	1,2747	50	2,79626	$\phi =$	2,79626	$\times \Delta T$	1,2747
TUB2-180/04D50L	546	285	1,2747	50	3,72834	$\phi =$	3,72834	$\times \Delta T$	1,2747
TUB2-180/05D50L	683	356	1,2747	50	4,66043	$\phi =$	4,66043	$\times \Delta T$	1,2747
TUB2-180/06D50L	819	427	1,2747	50	5,59251	$\phi =$	5,59251	$\times \Delta T$	1,2747
TUB2-180/07D50L	956	498	1,2747	50	6,52460	$\phi =$	6,52460	$\times \Delta T$	1,2747
TUB2-180/08D50L	1092	569	1,2747	50	7,45668	$\phi =$	7,45668	$\times \Delta T$	1,2747
TUB2-180/09D50L	1229	641	1,2747	50	8,38877	$\phi =$	8,38877	$\times \Delta T$	1,2747
TUB2-180/10D50L	1365	712	1,2747	50	9,32085	$\phi =$	9,32085	$\times \Delta T$	1,2747
TUB2-180/11D50L	1502	783	1,2747	50	10,25294	$\phi =$	10,25294	$\times \Delta T$	1,2747
TUB2-180/12D50L	1638	854	1,2747	50	11,18502	$\phi =$	11,18502	$\times \Delta T$	1,2747
TUB2-180/13D50L	1775	925	1,2747	50	12,11711	$\phi =$	12,11711	$\times \Delta T$	1,2747
TUB2-180/14D50L	1911	996	1,2747	50	13,04919	$\phi =$	13,04919	$\times \Delta T$	1,2747
TUB2-180/15D50L	2048	1068	1,2747	50	13,98128	$\phi =$	13,98128	$\times \Delta T$	1,2747
TUB2-180/16D50L	2184	1139	1,2747	50	14,91336	$\phi =$	14,91336	$\times \Delta T$	1,2747
TUB2-180/17D50L	2321	1210	1,2747	50	15,84545	$\phi =$	15,84545	$\times \Delta T$	1,2747
TUB2-180/18D50L	2457	1281	1,2747	50	16,77753	$\phi =$	16,77753	$\times \Delta T$	1,2747
TUB2-180/19D50L	2594	1352	1,2747	50	17,70962	$\phi =$	17,70962	$\times \Delta T$	1,2747
TUB2-180/20D50L	2730	1424	1,2747	50	18,64170	$\phi =$	18,64170	$\times \Delta T$	1,2747
TUB2-180/21D50L	2867	1495	1,2747	50	19,57379	$\phi =$	19,57379	$\times \Delta T$	1,2747
TUB2-180/22D50L	3003	1566	1,2747	50	20,50587	$\phi =$	20,50587	$\times \Delta T$	1,2747
TUB2-180/23D50L	3140	1637	1,2747	50	21,43796	$\phi =$	21,43796	$\times \Delta T$	1,2747
TUB2-200/02D50L	300	156	1,2778	50	2,02115	$\phi =$	2,02115	$\times \Delta T$	1,2778
TUB2-200/03D50L	449	234	1,2778	50	3,03172	$\phi =$	3,03172	$\times \Delta T$	1,2778
TUB2-200/04D50L	599	312	1,2778	50	4,04229	$\phi =$	4,04229	$\times \Delta T$	1,2778
TUB2-200/05D50L	749	390	1,2778	50	5,05287	$\phi =$	5,05287	$\times \Delta T$	1,2778
TUB2-200/06D50L	899	468	1,2778	50	6,06344	$\phi =$	6,06344	$\times \Delta T$	1,2778
TUB2-200/07D50L	1049	546	1,2778	50	7,07402	$\phi =$	7,07402	$\times \Delta T$	1,2778
TUB2-200/08D50L	1198	624	1,2778	50	8,08459	$\phi =$	8,08459	$\times \Delta T$	1,2778
TUB2-200/09D50L	1348	702	1,2778	50	9,09516	$\phi =$	9,09516	$\times \Delta T$	1,2778
TUB2-200/10D50L	1498	780	1,2778	50	10,10574	$\phi =$	10,10574	$\times \Delta T$	1,2778
TUB2-200/11D50L	1648	858	1,2778	50	11,11631	$\phi =$	11,11631	$\times \Delta T$	1,2778
TUB2-200/12D50L	1798	936	1,2778	50	12,12688	$\phi =$	12,12688	$\times \Delta T$	1,2778
TUB2-200/13D50L	1947	1014	1,2778	50	13,13746	$\phi =$	13,13746	$\times \Delta T$	1,2778
TUB2-200/14D50L	2097	1092	1,2778	50	14,14803	$\phi =$	14,14803	$\times \Delta T$	1,2778
TUB2-200/15D50L	2247	1170	1,2778	50	15,15860	$\phi =$	15,15860	$\times \Delta T$	1,2778
TUB2-200/16D50L	2397	1248	1,2778	50	16,16918	$\phi =$	16,16918	$\times \Delta T$	1,2778
TUB2-200/17D50L	2547	1326	1,2778	50	17,17975	$\phi =$	17,17975	$\times \Delta T$	1,2778
TUB2-200/18D50L	2696	1404	1,2778	50	18,19032	$\phi =$	18,19032	$\times \Delta T$	1,2778



## Nr (No.) NDWU/1/TUBUS 2 D50L/2021

TUB2-200/19D50L	2846	1482	1,2778	50	19,20090	$\phi =$	19,20090	x $\Delta T$	1,2778
TUB2-200/20D50L	2996	1560	1,2778	50	20,21147	$\phi =$	20,21147	x $\Delta T$	1,2778
TUB2-200/21D50L	3146	1638	1,2778	50	21,22205	$\phi =$	21,22205	x $\Delta T$	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)