

**DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH**  
(DECLARATION OF PERFORMANCE)  
Nr (No.) NDWU/1/TUBUS 2 D50/2021

<b>1. Niepowtarzalny kod identyfikacyjny typu wyrobu:</b> (Unique identification code of the product-type:)  <b>TUBUS 2</b>																								
<b>2. Zamierzone zastosowanie lub zastosowania:</b> W instalacjach grzewczych w budynkach (Intended use/es: In heating systems in buildings)																								
<b>3. Producent:</b> (Manufacturer:)  INSTAL-PROJEKT Gawłowscy, Ścierzyńscy Spółka jawna, Nowa Wieś k/ Włocławka, ul. Jana Pawła II 12A, 87-853 Kruszyn, Polska. (INSTAL-PROJEKT Gawłowscy, Ścierzyńscy Spółka jawna, 87-853 Kruszyn, Nowa Wieś near Włocławek, Jana Pawła II 12A str., Poland.)																								
<b>4. System(-y) oceny i weryfikacji stałości właściwości użytkowych:</b> (System/s of AVCP:)  System 3																								
<b>5. Norma zharmonizowana:</b> (Harmonised standard:)  PN-EN 442-1:2015 EN 442-1:2014																								
<b>6. Jednostka lub jednostki notyfikowane:</b> (Notified body /ies:)  Notyfikowana jednostka badawcza Instytut Energetyki - Oddział Techniki Grzewczej i Sanitarnej ul. Wilcza 8, PL- 26-610 Radom . Nr akredytacji: AB.143, Nr notyfikacji: 1452, wykonała wstępne badanie typu i wydała sprawozdanie z badań. (Notified/accredited body Instytut Energetyki - Oddział Techniki Grzewczej i Sanitarnej ul. Wilcza 8, PL- 26-610 Radom. Accreditation no. AB 143, Notification no. 1452, performed initial type testing and issued test reports)																								
<b>7. Deklarowane właściwości użytkowe:</b> (Declared performance/s:) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%; text-align: center;">Zasadnicze charakterystyki Essential characteristics</th> <th style="width: 33%; text-align: center;">Właściwości użytkowe Performance</th> <th style="width: 33%; text-align: center;">Zharmonizowana specyfikacja techniczna Harmonised technical specification</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;"> <b>Reakcja na ogień</b> (Reaction to fire)                 </td> <td style="text-align: center; padding: 2px;">A1</td> <td rowspan="10" style="text-align: center; vertical-align: middle; padding: 2px;">                     PN-EN 442-1:2015                      EN 442-1:2014                 </td> </tr> <tr> <td style="padding: 2px;"> <b>Uwalnianie substancji niebezpiecznych</b> (Release of dangerous substances)                 </td> <td style="text-align: center; padding: 2px;">Nie ma (None)</td> </tr> <tr> <td style="padding: 2px;"> <b>Szczelność pod działaniem ciśnienia</b> (Pressure tightness)                 </td> <td style="padding: 2px;">Brak przecieku przy ciśnieniu 1,3 krotnie większym od maksymalnego ciśnienia [kPa] (No leakage at 1,3 x maximum operating pressure [kPa])                 </td> </tr> <tr> <td style="padding: 2px;"> <b>Temperatura powierzchni</b> (Surface temperature)                 </td> <td style="text-align: center; padding: 2px;">Maksymalnie 95 °C (Maximum 95 °C)</td> </tr> <tr> <td style="padding: 2px;"> <b>Odporność na działanie ciśnienia</b> (Resistance to pressure)                 </td> <td style="padding: 2px;">Brak pęknięć przy ciśnieniu 1,69 krotnie większym od maksymalnego dopuszczalnego ciśnienia roboczego [kPa]. (No breakage at 1,69 x maximum operating pressure [kPa])                       Maksymalne dopuszczalne ciśnienie robocze: 1000 [kPa] (Maximum operating pressure 1000 [kPa])                 </td> </tr> <tr> <td style="padding: 2px;"> <b>Nominalna moc cieplna (Φ 50 , Φ 30)</b> (Rated thermal output) (Φ 50 , Φ 30)                 </td> <td style="text-align: center; padding: 2px;">Patrz Tabela nr.1 (See Table No.1)</td> </tr> <tr> <td style="padding: 2px;"> <b>Moc cieplna w różnych warunkach eksploatacyjnych (charakterystyka)</b> (Thermal output in different operating conditions (characteristic curve))                 </td> <td style="text-align: center; padding: 2px;">Patrz Tabela nr.1 (See Table No.1)</td> </tr> <tr> <td style="padding: 2px;"> <b>Odporność na korozję</b> (Resistance against corrosion)                 </td> <td style="padding: 2px;">Brak korozji po 100 h w wilgoci (No corrosion after 100 h humidity)</td> </tr> <tr> <td style="padding: 2px;"> <b>Odporność na słabe uderzenia</b> (Resistance against minor impact)                 </td> <td style="text-align: center; padding: 2px;">Klasa 0 (Class 0)</td> </tr> </tbody> </table>			Zasadnicze charakterystyki Essential characteristics	Właściwości użytkowe Performance	Zharmonizowana specyfikacja techniczna Harmonised technical specification	<b>Reakcja na ogień</b> (Reaction to fire)	A1	PN-EN 442-1:2015 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: 1000 [kPa] (Maximum operating pressure 1000 [kPa])	<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)
Zasadnicze charakterystyki Essential characteristics	Właściwości użytkowe Performance	Zharmonizowana specyfikacja techniczna Harmonised technical specification																						
<b>Reakcja na ogień</b> (Reaction to fire)	A1	PN-EN 442-1:2015 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])																							
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<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)																							

8. Właściwości użytkowe określonego powyżej wyrobu są zgodne z zestawem deklarowanych właściwości użytkowych. Niniejsza deklaracja właściwości użytkowych wydana zostaje zgodnie z rozporządzeniem (UE) nr 305/2011 na wyłączną odpowiedzialność producenta określonego powyżej.  
(The performance of the product identified above is in conformity with the set of declared performance's. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.)

Tabela nr 1

(Table no. 1)

Model grzejnika	Normalna moc cieplna [W] (75/65/20°C) Φ <sub>50</sub>	Moc cieplna [W] (55/45/20°C) Φ <sub>30</sub>	Wykładnik n	ΔT	K <sub>M</sub>	Moc cieplna w różnych warunkach eksploatacji				
Radiator model	Rated thermal output (75/65/20°C) Φ <sub>50</sub>	Rated thermal output (55/45/20°C) Φ <sub>30</sub>	Index exponent n	ΔT	K <sub>M</sub>	Thermal output in different operating conditions (characteristic curve)				
TUB2-020/02D50	24	13	1,2611	50	0,1757	φ =	0,1757	x	ΔT	1,2611
TUB2-020/03D50	37	19	1,2611	50	0,2636	φ =	0,2636	x	ΔT	1,2611
TUB2-020/04D50	49	26	1,2611	50	0,3514	φ =	0,3514	x	ΔT	1,2611
TUB2-020/05D50	61	32	1,2611	50	0,4393	φ =	0,4393	x	ΔT	1,2611
TUB2-020/06D50	73	38	1,2611	50	0,5272	φ =	0,5272	x	ΔT	1,2611
TUB2-020/07D50	85	45	1,2611	50	0,6150	φ =	0,6150	x	ΔT	1,2611
TUB2-020/08D50	98	51	1,2611	50	0,7029	φ =	0,7029	x	ΔT	1,2611
TUB2-020/09D50	110	58	1,2611	50	0,7907	φ =	0,7907	x	ΔT	1,2611
TUB2-020/10D50	122	64	1,2611	50	0,8786	φ =	0,8786	x	ΔT	1,2611
TUB2-020/11D50	134	70	1,2611	50	0,9665	φ =	0,9665	x	ΔT	1,2611
TUB2-020/12D50	146	77	1,2611	50	1,0543	φ =	1,0543	x	ΔT	1,2611
TUB2-020/13D50	159	83	1,2611	50	1,1422	φ =	1,1422	x	ΔT	1,2611
TUB2-020/14D50	171	90	1,2611	50	1,2300	φ =	1,2300	x	ΔT	1,2611
TUB2-020/15D50	183	96	1,2611	50	1,3179	φ =	1,3179	x	ΔT	1,2611
TUB2-020/16D50	195	102	1,2611	50	1,4058	φ =	1,4058	x	ΔT	1,2611
TUB2-020/17D50	207	109	1,2611	50	1,4936	φ =	1,4936	x	ΔT	1,2611
TUB2-020/18D50	220	115	1,2611	50	1,5815	φ =	1,5815	x	ΔT	1,2611
TUB2-020/19D50	232	122	1,2611	50	1,6693	φ =	1,6693	x	ΔT	1,2611
TUB2-020/20D50	244	128	1,2611	50	1,7572	φ =	1,7572	x	ΔT	1,2611
TUB2-020/21D50	256	135	1,2611	50	1,8450	φ =	1,8450	x	ΔT	1,2611
TUB2-020/22D50	268	141	1,2611	50	1,9329	φ =	1,9329	x	ΔT	1,2611
TUB2-020/23D50	281	147	1,2611	50	2,0208	φ =	2,0208	x	ΔT	1,2611
TUB2-020/24D50	293	154	1,2611	50	2,1086	φ =	2,1086	x	ΔT	1,2611
TUB2-020/25D50	305	160	1,2611	50	2,1965	φ =	2,1965	x	ΔT	1,2611
TUB2-020/26D50	317	167	1,2611	50	2,2843	φ =	2,2843	x	ΔT	1,2611
TUB2-020/27D50	329	173	1,2611	50	2,3722	φ =	2,3722	x	ΔT	1,2611
TUB2-020/28D50	342	179	1,2611	50	2,4601	φ =	2,4601	x	ΔT	1,2611
TUB2-020/29D50	354	186	1,2611	50	2,5479	φ =	2,5479	x	ΔT	1,2611
TUB2-020/30D50	366	192	1,2611	50	2,6358	φ =	2,6358	x	ΔT	1,2611
TUB2-020/31D50	378	199	1,2611	50	2,7236	φ =	2,7236	x	ΔT	1,2611
TUB2-020/32D50	390	205	1,2611	50	2,8115	φ =	2,8115	x	ΔT	1,2611
TUB2-020/33D50	403	211	1,2611	50	2,8994	φ =	2,8994	x	ΔT	1,2611
TUB2-020/34D50	415	218	1,2611	50	2,9872	φ =	2,9872	x	ΔT	1,2611
TUB2-020/35D50	427	224	1,2611	50	3,0751	φ =	3,0751	x	ΔT	1,2611
TUB2-020/36D50	439	231	1,2611	50	3,1629	φ =	3,1629	x	ΔT	1,2611
TUB2-020/37D50	451	237	1,2611	50	3,2508	φ =	3,2508	x	ΔT	1,2611

TUB2-020/38D50	464	243	1,2611	50	3,3387	$\phi =$	3,3387	x	$\Delta T$	1,2611
TUB2-020/39D50	476	250	1,2611	50	3,4265	$\phi =$	3,4265	x	$\Delta T$	1,2611
TUB2-020/40D50	488	256	1,2611	50	3,5144	$\phi =$	3,5144	x	$\Delta T$	1,2611
TUB2-020/41D50	500	263	1,2611	50	3,6022	$\phi =$	3,6022	x	$\Delta T$	1,2611
TUB2-020/42D50	512	269	1,2611	50	3,6901	$\phi =$	3,6901	x	$\Delta T$	1,2611
TUB2-020/43D50	525	275	1,2611	50	3,7780	$\phi =$	3,7780	x	$\Delta T$	1,2611
TUB2-020/44D50	537	282	1,2611	50	3,8658	$\phi =$	3,8658	x	$\Delta T$	1,2611
TUB2-020/45D50	549	288	1,2611	50	3,9537	$\phi =$	3,9537	x	$\Delta T$	1,2611
TUB2-030/02D50	40	21	1,2613	50	0,2850	$\phi =$	0,2850	x	$\Delta T$	1,2613
TUB2-030/03D50	59	31	1,2613	50	0,4274	$\phi =$	0,4274	x	$\Delta T$	1,2613
TUB2-030/04D50	79	42	1,2613	50	0,5699	$\phi =$	0,5699	x	$\Delta T$	1,2613
TUB2-030/05D50	99	52	1,2613	50	0,7124	$\phi =$	0,7124	x	$\Delta T$	1,2613
TUB2-030/06D50	119	62	1,2613	50	0,8549	$\phi =$	0,8549	x	$\Delta T$	1,2613
TUB2-030/07D50	139	73	1,2613	50	0,9974	$\phi =$	0,9974	x	$\Delta T$	1,2613
TUB2-030/08D50	158	83	1,2613	50	1,1398	$\phi =$	1,1398	x	$\Delta T$	1,2613
TUB2-030/09D50	178	94	1,2613	50	1,2823	$\phi =$	1,2823	x	$\Delta T$	1,2613
TUB2-030/10D50	198	104	1,2613	50	1,4248	$\phi =$	1,4248	x	$\Delta T$	1,2613
TUB2-030/11D50	218	114	1,2613	50	1,5673	$\phi =$	1,5673	x	$\Delta T$	1,2613
TUB2-030/12D50	238	125	1,2613	50	1,7098	$\phi =$	1,7098	x	$\Delta T$	1,2613
TUB2-030/13D50	257	135	1,2613	50	1,8522	$\phi =$	1,8522	x	$\Delta T$	1,2613
TUB2-030/14D50	277	146	1,2613	50	1,9947	$\phi =$	1,9947	x	$\Delta T$	1,2613
TUB2-030/15D50	297	156	1,2613	50	2,1372	$\phi =$	2,1372	x	$\Delta T$	1,2613
TUB2-030/16D50	317	166	1,2613	50	2,2797	$\phi =$	2,2797	x	$\Delta T$	1,2613
TUB2-030/17D50	337	177	1,2613	50	2,4222	$\phi =$	2,4222	x	$\Delta T$	1,2613
TUB2-030/18D50	356	187	1,2613	50	2,5646	$\phi =$	2,5646	x	$\Delta T$	1,2613
TUB2-030/19D50	376	198	1,2613	50	2,7071	$\phi =$	2,7071	x	$\Delta T$	1,2613
TUB2-030/20D50	396	208	1,2613	50	2,8496	$\phi =$	2,8496	x	$\Delta T$	1,2613
TUB2-030/21D50	416	218	1,2613	50	2,9921	$\phi =$	2,9921	x	$\Delta T$	1,2613
TUB2-030/22D50	436	229	1,2613	50	3,1346	$\phi =$	3,1346	x	$\Delta T$	1,2613
TUB2-030/23D50	455	239	1,2613	50	3,2770	$\phi =$	3,2770	x	$\Delta T$	1,2613
TUB2-030/24D50	475	249	1,2613	50	3,4195	$\phi =$	3,4195	x	$\Delta T$	1,2613
TUB2-030/25D50	495	260	1,2613	50	3,5620	$\phi =$	3,5620	x	$\Delta T$	1,2613
TUB2-030/26D50	515	270	1,2613	50	3,7045	$\phi =$	3,7045	x	$\Delta T$	1,2613
TUB2-030/27D50	535	281	1,2613	50	3,8470	$\phi =$	3,8470	x	$\Delta T$	1,2613
TUB2-030/28D50	554	291	1,2613	50	3,9894	$\phi =$	3,9894	x	$\Delta T$	1,2613
TUB2-030/29D50	574	301	1,2613	50	4,1319	$\phi =$	4,1319	x	$\Delta T$	1,2613
TUB2-030/30D50	594	312	1,2613	50	4,2744	$\phi =$	4,2744	x	$\Delta T$	1,2613
TUB2-030/31D50	614	322	1,2613	50	4,4169	$\phi =$	4,4169	x	$\Delta T$	1,2613
TUB2-030/32D50	634	333	1,2613	50	4,5594	$\phi =$	4,5594	x	$\Delta T$	1,2613
TUB2-030/33D50	653	343	1,2613	50	4,7018	$\phi =$	4,7018	x	$\Delta T$	1,2613
TUB2-030/34D50	673	353	1,2613	50	4,8443	$\phi =$	4,8443	x	$\Delta T$	1,2613
TUB2-030/35D50	693	364	1,2613	50	4,9868	$\phi =$	4,9868	x	$\Delta T$	1,2613
TUB2-030/36D50	713	374	1,2613	50	5,1293	$\phi =$	5,1293	x	$\Delta T$	1,2613
TUB2-030/37D50	733	385	1,2613	50	5,2718	$\phi =$	5,2718	x	$\Delta T$	1,2613
TUB2-030/38D50	752	395	1,2613	50	5,4142	$\phi =$	5,4142	x	$\Delta T$	1,2613
TUB2-030/39D50	772	405	1,2613	50	5,5567	$\phi =$	5,5567	x	$\Delta T$	1,2613
TUB2-030/40D50	792	416	1,2613	50	5,6992	$\phi =$	5,6992	x	$\Delta T$	1,2613

TUB2-030/41D50	812	426	1,2613	50	5,8417	$\phi =$	5,8417	x	$\Delta T$	1,2613
TUB2-030/42D50	832	437	1,2613	50	5,9842	$\phi =$	5,9842	x	$\Delta T$	1,2613
TUB2-030/43D50	851	447	1,2613	50	6,1266	$\phi =$	6,1266	x	$\Delta T$	1,2613
TUB2-030/44D50	871	457	1,2613	50	6,2691	$\phi =$	6,2691	x	$\Delta T$	1,2613
TUB2-030/45D50	891	468	1,2613	50	6,4116	$\phi =$	6,4116	x	$\Delta T$	1,2613
TUB2-040/02D50	55	29	1,2616	50	0,3968	$\phi =$	0,3968	x	$\Delta T$	1,2616
TUB2-040/03D50	83	43	1,2616	50	0,5951	$\phi =$	0,5951	x	$\Delta T$	1,2616
TUB2-040/04D50	110	58	1,2616	50	0,7935	$\phi =$	0,7935	x	$\Delta T$	1,2616
TUB2-040/05D50	138	72	1,2616	50	0,9919	$\phi =$	0,9919	x	$\Delta T$	1,2616
TUB2-040/06D50	166	87	1,2616	50	1,1903	$\phi =$	1,1903	x	$\Delta T$	1,2616
TUB2-040/07D50	193	101	1,2616	50	1,3886	$\phi =$	1,3886	x	$\Delta T$	1,2616
TUB2-040/08D50	221	116	1,2616	50	1,5870	$\phi =$	1,5870	x	$\Delta T$	1,2616
TUB2-040/09D50	248	130	1,2616	50	1,7854	$\phi =$	1,7854	x	$\Delta T$	1,2616
TUB2-040/10D50	276	145	1,2616	50	1,9838	$\phi =$	1,9838	x	$\Delta T$	1,2616
TUB2-040/11D50	304	159	1,2616	50	2,1821	$\phi =$	2,1821	x	$\Delta T$	1,2616
TUB2-040/12D50	331	174	1,2616	50	2,3805	$\phi =$	2,3805	x	$\Delta T$	1,2616
TUB2-040/13D50	359	188	1,2616	50	2,5789	$\phi =$	2,5789	x	$\Delta T$	1,2616
TUB2-040/14D50	386	203	1,2616	50	2,7773	$\phi =$	2,7773	x	$\Delta T$	1,2616
TUB2-040/15D50	414	217	1,2616	50	2,9756	$\phi =$	2,9756	x	$\Delta T$	1,2616
TUB2-040/16D50	442	232	1,2616	50	3,1740	$\phi =$	3,1740	x	$\Delta T$	1,2616
TUB2-040/17D50	469	246	1,2616	50	3,3724	$\phi =$	3,3724	x	$\Delta T$	1,2616
TUB2-040/18D50	497	261	1,2616	50	3,5708	$\phi =$	3,5708	x	$\Delta T$	1,2616
TUB2-040/19D50	524	275	1,2616	50	3,7691	$\phi =$	3,7691	x	$\Delta T$	1,2616
TUB2-040/20D50	552	290	1,2616	50	3,9675	$\phi =$	3,9675	x	$\Delta T$	1,2616
TUB2-040/21D50	580	304	1,2616	50	4,1659	$\phi =$	4,1659	x	$\Delta T$	1,2616
TUB2-040/22D50	607	319	1,2616	50	4,3643	$\phi =$	4,3643	x	$\Delta T$	1,2616
TUB2-040/23D50	635	333	1,2616	50	4,5626	$\phi =$	4,5626	x	$\Delta T$	1,2616
TUB2-040/24D50	662	348	1,2616	50	4,7610	$\phi =$	4,7610	x	$\Delta T$	1,2616
TUB2-040/25D50	690	362	1,2616	50	4,9594	$\phi =$	4,9594	x	$\Delta T$	1,2616
TUB2-040/26D50	718	377	1,2616	50	5,1578	$\phi =$	5,1578	x	$\Delta T$	1,2616
TUB2-040/27D50	745	391	1,2616	50	5,3561	$\phi =$	5,3561	x	$\Delta T$	1,2616
TUB2-040/28D50	773	406	1,2616	50	5,5545	$\phi =$	5,5545	x	$\Delta T$	1,2616
TUB2-040/29D50	800	420	1,2616	50	5,7529	$\phi =$	5,7529	x	$\Delta T$	1,2616
TUB2-040/30D50	828	435	1,2616	50	5,9513	$\phi =$	5,9513	x	$\Delta T$	1,2616
TUB2-040/31D50	856	449	1,2616	50	6,1496	$\phi =$	6,1496	x	$\Delta T$	1,2616
TUB2-040/32D50	883	464	1,2616	50	6,3480	$\phi =$	6,3480	x	$\Delta T$	1,2616
TUB2-040/33D50	911	478	1,2616	50	6,5464	$\phi =$	6,5464	x	$\Delta T$	1,2616
TUB2-040/34D50	938	493	1,2616	50	6,7448	$\phi =$	6,7448	x	$\Delta T$	1,2616
TUB2-040/35D50	966	507	1,2616	50	6,9432	$\phi =$	6,9432	x	$\Delta T$	1,2616
TUB2-040/36D50	994	522	1,2616	50	7,1415	$\phi =$	7,1415	x	$\Delta T$	1,2616
TUB2-040/37D50	1021	536	1,2616	50	7,3399	$\phi =$	7,3399	x	$\Delta T$	1,2616
TUB2-040/38D50	1049	551	1,2616	50	7,5383	$\phi =$	7,5383	x	$\Delta T$	1,2616
TUB2-040/39D50	1076	565	1,2616	50	7,7367	$\phi =$	7,7367	x	$\Delta T$	1,2616
TUB2-040/40D50	1104	580	1,2616	50	7,9350	$\phi =$	7,9350	x	$\Delta T$	1,2616
TUB2-040/41D50	1132	594	1,2616	50	8,1334	$\phi =$	8,1334	x	$\Delta T$	1,2616
TUB2-040/42D50	1159	609	1,2616	50	8,3318	$\phi =$	8,3318	x	$\Delta T$	1,2616
TUB2-040/43D50	1187	623	1,2616	50	8,5302	$\phi =$	8,5302	x	$\Delta T$	1,2616

TUB2-040/44D50	1214	637	1,2616	50	8,7285	$\phi =$	8,7285	x	$\Delta T$	1,2616
TUB2-040/45D50	1242	652	1,2616	50	8,9269	$\phi =$	8,9269	x	$\Delta T$	1,2616
TUB2-050/02D50	71	37	1,2620	50	0,5110	$\phi =$	0,5110	x	$\Delta T$	1,2620
TUB2-050/03D50	107	56	1,2620	50	0,7664	$\phi =$	0,7664	x	$\Delta T$	1,2620
TUB2-050/04D50	142	75	1,2620	50	1,0219	$\phi =$	1,0219	x	$\Delta T$	1,2620
TUB2-050/05D50	178	93	1,2620	50	1,2774	$\phi =$	1,2774	x	$\Delta T$	1,2620
TUB2-050/06D50	214	112	1,2620	50	1,5329	$\phi =$	1,5329	x	$\Delta T$	1,2620
TUB2-050/07D50	249	131	1,2620	50	1,7883	$\phi =$	1,7883	x	$\Delta T$	1,2620
TUB2-050/08D50	285	149	1,2620	50	2,0438	$\phi =$	2,0438	x	$\Delta T$	1,2620
TUB2-050/09D50	320	168	1,2620	50	2,2993	$\phi =$	2,2993	x	$\Delta T$	1,2620
TUB2-050/10D50	356	187	1,2620	50	2,5548	$\phi =$	2,5548	x	$\Delta T$	1,2620
TUB2-050/11D50	392	206	1,2620	50	2,8102	$\phi =$	2,8102	x	$\Delta T$	1,2620
TUB2-050/12D50	427	224	1,2620	50	3,0657	$\phi =$	3,0657	x	$\Delta T$	1,2620
TUB2-050/13D50	463	243	1,2620	50	3,3212	$\phi =$	3,3212	x	$\Delta T$	1,2620
TUB2-050/14D50	498	262	1,2620	50	3,5767	$\phi =$	3,5767	x	$\Delta T$	1,2620
TUB2-050/15D50	534	280	1,2620	50	3,8321	$\phi =$	3,8321	x	$\Delta T$	1,2620
TUB2-050/16D50	570	299	1,2620	50	4,0876	$\phi =$	4,0876	x	$\Delta T$	1,2620
TUB2-050/17D50	605	318	1,2620	50	4,3431	$\phi =$	4,3431	x	$\Delta T$	1,2620
TUB2-050/18D50	641	336	1,2620	50	4,5986	$\phi =$	4,5986	x	$\Delta T$	1,2620
TUB2-050/19D50	676	355	1,2620	50	4,8540	$\phi =$	4,8540	x	$\Delta T$	1,2620
TUB2-050/20D50	712	374	1,2620	50	5,1095	$\phi =$	5,1095	x	$\Delta T$	1,2620
TUB2-050/21D50	748	392	1,2620	50	5,3650	$\phi =$	5,3650	x	$\Delta T$	1,2620
TUB2-050/22D50	783	411	1,2620	50	5,6205	$\phi =$	5,6205	x	$\Delta T$	1,2620
TUB2-050/23D50	819	430	1,2620	50	5,8759	$\phi =$	5,8759	x	$\Delta T$	1,2620
TUB2-050/24D50	854	448	1,2620	50	6,1314	$\phi =$	6,1314	x	$\Delta T$	1,2620
TUB2-050/25D50	890	467	1,2620	50	6,3869	$\phi =$	6,3869	x	$\Delta T$	1,2620
TUB2-050/26D50	926	486	1,2620	50	6,6424	$\phi =$	6,6424	x	$\Delta T$	1,2620
TUB2-050/27D50	961	504	1,2620	50	6,8978	$\phi =$	6,8978	x	$\Delta T$	1,2620
TUB2-050/28D50	997	523	1,2620	50	7,1533	$\phi =$	7,1533	x	$\Delta T$	1,2620
TUB2-050/29D50	1032	542	1,2620	50	7,4088	$\phi =$	7,4088	x	$\Delta T$	1,2620
TUB2-050/30D50	1068	561	1,2620	50	7,6643	$\phi =$	7,6643	x	$\Delta T$	1,2620
TUB2-050/31D50	1104	579	1,2620	50	7,9198	$\phi =$	7,9198	x	$\Delta T$	1,2620
TUB2-050/32D50	1139	598	1,2620	50	8,1752	$\phi =$	8,1752	x	$\Delta T$	1,2620
TUB2-050/33D50	1175	617	1,2620	50	8,4307	$\phi =$	8,4307	x	$\Delta T$	1,2620
TUB2-050/34D50	1210	635	1,2620	50	8,6862	$\phi =$	8,6862	x	$\Delta T$	1,2620
TUB2-050/35D50	1246	654	1,2620	50	8,9417	$\phi =$	8,9417	x	$\Delta T$	1,2620
TUB2-050/36D50	1282	673	1,2620	50	9,1971	$\phi =$	9,1971	x	$\Delta T$	1,2620
TUB2-050/37D50	1317	691	1,2620	50	9,4526	$\phi =$	9,4526	x	$\Delta T$	1,2620
TUB2-050/38D50	1353	710	1,2620	50	9,7081	$\phi =$	9,7081	x	$\Delta T$	1,2620
TUB2-050/39D50	1388	729	1,2620	50	9,9636	$\phi =$	9,9636	x	$\Delta T$	1,2620
TUB2-050/40D50	1424	747	1,2620	50	10,2190	$\phi =$	10,2190	x	$\Delta T$	1,2620
TUB2-050/41D50	1460	766	1,2620	50	10,4745	$\phi =$	10,4745	x	$\Delta T$	1,2620
TUB2-050/42D50	1495	785	1,2620	50	10,7300	$\phi =$	10,7300	x	$\Delta T$	1,2620
TUB2-050/43D50	1531	803	1,2620	50	10,9855	$\phi =$	10,9855	x	$\Delta T$	1,2620
TUB2-050/44D50	1566	822	1,2620	50	11,2409	$\phi =$	11,2409	x	$\Delta T$	1,2620
TUB2-050/45D50	1602	841	1,2620	50	11,4964	$\phi =$	11,4964	x	$\Delta T$	1,2620
TUB2-070/02D50	103	54	1,2631	50	0,7374	$\phi =$	0,7374	x	$\Delta T$	1,2631

TUB2-070/03D50	155	81	1,2631	50	1,1061	$\phi =$	1,1061	x	$\Delta T$	1,2631
TUB2-070/04D50	206	108	1,2631	50	1,4748	$\phi =$	1,4748	x	$\Delta T$	1,2631
TUB2-070/05D50	258	135	1,2631	50	1,8435	$\phi =$	1,8435	x	$\Delta T$	1,2631
TUB2-070/06D50	310	162	1,2631	50	2,2122	$\phi =$	2,2122	x	$\Delta T$	1,2631
TUB2-070/07D50	361	189	1,2631	50	2,5809	$\phi =$	2,5809	x	$\Delta T$	1,2631
TUB2-070/08D50	413	217	1,2631	50	2,9497	$\phi =$	2,9497	x	$\Delta T$	1,2631
TUB2-070/09D50	464	244	1,2631	50	3,3184	$\phi =$	3,3184	x	$\Delta T$	1,2631
TUB2-070/10D50	516	271	1,2631	50	3,6871	$\phi =$	3,6871	x	$\Delta T$	1,2631
TUB2-070/11D50	568	298	1,2631	50	4,0558	$\phi =$	4,0558	x	$\Delta T$	1,2631
TUB2-070/12D50	619	325	1,2631	50	4,4245	$\phi =$	4,4245	x	$\Delta T$	1,2631
TUB2-070/13D50	671	352	1,2631	50	4,7932	$\phi =$	4,7932	x	$\Delta T$	1,2631
TUB2-070/14D50	722	379	1,2631	50	5,1619	$\phi =$	5,1619	x	$\Delta T$	1,2631
TUB2-070/15D50	774	406	1,2631	50	5,5306	$\phi =$	5,5306	x	$\Delta T$	1,2631
TUB2-070/16D50	826	433	1,2631	50	5,8993	$\phi =$	5,8993	x	$\Delta T$	1,2631
TUB2-070/17D50	877	460	1,2631	50	6,2680	$\phi =$	6,2680	x	$\Delta T$	1,2631
TUB2-070/18D50	929	487	1,2631	50	6,6367	$\phi =$	6,6367	x	$\Delta T$	1,2631
TUB2-070/19D50	980	514	1,2631	50	7,0054	$\phi =$	7,0054	x	$\Delta T$	1,2631
TUB2-070/20D50	1032	541	1,2631	50	7,3741	$\phi =$	7,3741	x	$\Delta T$	1,2631
TUB2-070/21D50	1084	568	1,2631	50	7,7428	$\phi =$	7,7428	x	$\Delta T$	1,2631
TUB2-070/22D50	1135	595	1,2631	50	8,1115	$\phi =$	8,1115	x	$\Delta T$	1,2631
TUB2-070/23D50	1187	623	1,2631	50	8,4802	$\phi =$	8,4802	x	$\Delta T$	1,2631
TUB2-070/24D50	1238	650	1,2631	50	8,8490	$\phi =$	8,8490	x	$\Delta T$	1,2631
TUB2-070/25D50	1290	677	1,2631	50	9,2177	$\phi =$	9,2177	x	$\Delta T$	1,2631
TUB2-070/26D50	1342	704	1,2631	50	9,5864	$\phi =$	9,5864	x	$\Delta T$	1,2631
TUB2-070/27D50	1393	731	1,2631	50	9,9551	$\phi =$	9,9551	x	$\Delta T$	1,2631
TUB2-070/28D50	1445	758	1,2631	50	10,3238	$\phi =$	10,3238	x	$\Delta T$	1,2631
TUB2-070/29D50	1496	785	1,2631	50	10,6925	$\phi =$	10,6925	x	$\Delta T$	1,2631
TUB2-070/30D50	1548	812	1,2631	50	11,0612	$\phi =$	11,0612	x	$\Delta T$	1,2631
TUB2-070/31D50	1600	839	1,2631	50	11,4299	$\phi =$	11,4299	x	$\Delta T$	1,2631
TUB2-070/32D50	1651	866	1,2631	50	11,7986	$\phi =$	11,7986	x	$\Delta T$	1,2631
TUB2-070/33D50	1703	893	1,2631	50	12,1673	$\phi =$	12,1673	x	$\Delta T$	1,2631
TUB2-070/34D50	1754	920	1,2631	50	12,5360	$\phi =$	12,5360	x	$\Delta T$	1,2631
TUB2-070/35D50	1806	947	1,2631	50	12,9047	$\phi =$	12,9047	x	$\Delta T$	1,2631
TUB2-070/36D50	1858	974	1,2631	50	13,2734	$\phi =$	13,2734	x	$\Delta T$	1,2631
TUB2-070/37D50	1909	1001	1,2631	50	13,6421	$\phi =$	13,6421	x	$\Delta T$	1,2631
TUB2-070/38D50	1961	1029	1,2631	50	14,0108	$\phi =$	14,0108	x	$\Delta T$	1,2631
TUB2-070/39D50	2012	1056	1,2631	50	14,3796	$\phi =$	14,3796	x	$\Delta T$	1,2631
TUB2-070/40D50	2064	1083	1,2631	50	14,7483	$\phi =$	14,7483	x	$\Delta T$	1,2631
TUB2-070/41D50	2116	1110	1,2631	50	15,1170	$\phi =$	15,1170	x	$\Delta T$	1,2631
TUB2-070/42D50	2167	1137	1,2631	50	15,4857	$\phi =$	15,4857	x	$\Delta T$	1,2631
TUB2-070/43D50	2219	1164	1,2631	50	15,8544	$\phi =$	15,8544	x	$\Delta T$	1,2631
TUB2-070/44D50	2270	1191	1,2631	50	16,2231	$\phi =$	16,2231	x	$\Delta T$	1,2631
TUB2-070/45D50	2322	1218	1,2631	50	16,5918	$\phi =$	16,5918	x	$\Delta T$	1,2631
TUB2-080/02D50	119	63	1,2638	50	0,8494	$\phi =$	0,8494	x	$\Delta T$	1,2638
TUB2-080/03D50	179	94	1,2638	50	1,2741	$\phi =$	1,2741	x	$\Delta T$	1,2638
TUB2-080/04D50	238	125	1,2638	50	1,6988	$\phi =$	1,6988	x	$\Delta T$	1,2638
TUB2-080/05D50	298	156	1,2638	50	2,1235	$\phi =$	2,1235	x	$\Delta T$	1,2638

TUB2-080/06D50	358	188	1,2638	50	2,5482	$\phi =$	2,5482	x	$\Delta T$	1,2638
TUB2-080/07D50	417	219	1,2638	50	2,9729	$\phi =$	2,9729	x	$\Delta T$	1,2638
TUB2-080/08D50	477	250	1,2638	50	3,3976	$\phi =$	3,3976	x	$\Delta T$	1,2638
TUB2-080/09D50	536	281	1,2638	50	3,8224	$\phi =$	3,8224	x	$\Delta T$	1,2638
TUB2-080/10D50	596	313	1,2638	50	4,2471	$\phi =$	4,2471	x	$\Delta T$	1,2638
TUB2-080/11D50	656	344	1,2638	50	4,6718	$\phi =$	4,6718	x	$\Delta T$	1,2638
TUB2-080/12D50	715	375	1,2638	50	5,0965	$\phi =$	5,0965	x	$\Delta T$	1,2638
TUB2-080/13D50	775	406	1,2638	50	5,5212	$\phi =$	5,5212	x	$\Delta T$	1,2638
TUB2-080/14D50	834	438	1,2638	50	5,9459	$\phi =$	5,9459	x	$\Delta T$	1,2638
TUB2-080/15D50	894	469	1,2638	50	6,3706	$\phi =$	6,3706	x	$\Delta T$	1,2638
TUB2-080/16D50	954	500	1,2638	50	6,7953	$\phi =$	6,7953	x	$\Delta T$	1,2638
TUB2-080/17D50	1013	531	1,2638	50	7,2200	$\phi =$	7,2200	x	$\Delta T$	1,2638
TUB2-080/18D50	1073	563	1,2638	50	7,6447	$\phi =$	7,6447	x	$\Delta T$	1,2638
TUB2-080/19D50	1132	594	1,2638	50	8,0694	$\phi =$	8,0694	x	$\Delta T$	1,2638
TUB2-080/20D50	1192	625	1,2638	50	8,4941	$\phi =$	8,4941	x	$\Delta T$	1,2638
TUB2-080/21D50	1252	656	1,2638	50	8,9188	$\phi =$	8,9188	x	$\Delta T$	1,2638
TUB2-080/22D50	1311	688	1,2638	50	9,3435	$\phi =$	9,3435	x	$\Delta T$	1,2638
TUB2-080/23D50	1371	719	1,2638	50	9,7682	$\phi =$	9,7682	x	$\Delta T$	1,2638
TUB2-080/24D50	1430	750	1,2638	50	10,1929	$\phi =$	10,1929	x	$\Delta T$	1,2638
TUB2-080/25D50	1490	781	1,2638	50	10,6176	$\phi =$	10,6176	x	$\Delta T$	1,2638
TUB2-080/26D50	1550	813	1,2638	50	11,0423	$\phi =$	11,0423	x	$\Delta T$	1,2638
TUB2-080/27D50	1609	844	1,2638	50	11,4671	$\phi =$	11,4671	x	$\Delta T$	1,2638
TUB2-080/28D50	1669	875	1,2638	50	11,8918	$\phi =$	11,8918	x	$\Delta T$	1,2638
TUB2-080/29D50	1728	906	1,2638	50	12,3165	$\phi =$	12,3165	x	$\Delta T$	1,2638
TUB2-080/30D50	1788	938	1,2638	50	12,7412	$\phi =$	12,7412	x	$\Delta T$	1,2638
TUB2-080/31D50	1848	969	1,2638	50	13,1659	$\phi =$	13,1659	x	$\Delta T$	1,2638
TUB2-080/32D50	1907	1000	1,2638	50	13,5906	$\phi =$	13,5906	x	$\Delta T$	1,2638
TUB2-080/33D50	1967	1031	1,2638	50	14,0153	$\phi =$	14,0153	x	$\Delta T$	1,2638
TUB2-080/34D50	2026	1063	1,2638	50	14,4400	$\phi =$	14,4400	x	$\Delta T$	1,2638
TUB2-080/35D50	2086	1094	1,2638	50	14,8647	$\phi =$	14,8647	x	$\Delta T$	1,2638
TUB2-080/36D50	2146	1125	1,2638	50	15,2894	$\phi =$	15,2894	x	$\Delta T$	1,2638
TUB2-080/37D50	2205	1156	1,2638	50	15,7141	$\phi =$	15,7141	x	$\Delta T$	1,2638
TUB2-080/38D50	2265	1188	1,2638	50	16,1388	$\phi =$	16,1388	x	$\Delta T$	1,2638
TUB2-080/39D50	2324	1219	1,2638	50	16,5635	$\phi =$	16,5635	x	$\Delta T$	1,2638
TUB2-080/40D50	2384	1250	1,2638	50	16,9882	$\phi =$	16,9882	x	$\Delta T$	1,2638
TUB2-080/41D50	2444	1281	1,2638	50	17,4129	$\phi =$	17,4129	x	$\Delta T$	1,2638
TUB2-080/42D50	2503	1313	1,2638	50	17,8376	$\phi =$	17,8376	x	$\Delta T$	1,2638
TUB2-080/43D50	2563	1344	1,2638	50	18,2623	$\phi =$	18,2623	x	$\Delta T$	1,2638
TUB2-080/44D50	2622	1375	1,2638	50	18,6870	$\phi =$	18,6870	x	$\Delta T$	1,2638
TUB2-080/45D50	2682	1406	1,2638	50	19,1118	$\phi =$	19,1118	x	$\Delta T$	1,2638
TUB2-090/02D50	135	71	1,2645	50	0,9608	$\phi =$	0,9608	x	$\Delta T$	1,2645
TUB2-090/03D50	203	106	1,2645	50	1,4412	$\phi =$	1,4412	x	$\Delta T$	1,2645
TUB2-090/04D50	270	142	1,2645	50	1,9216	$\phi =$	1,9216	x	$\Delta T$	1,2645
TUB2-090/05D50	338	177	1,2645	50	2,4020	$\phi =$	2,4020	x	$\Delta T$	1,2645
TUB2-090/06D50	406	213	1,2645	50	2,8824	$\phi =$	2,8824	x	$\Delta T$	1,2645
TUB2-090/07D50	473	248	1,2645	50	3,3628	$\phi =$	3,3628	x	$\Delta T$	1,2645
TUB2-090/08D50	541	283	1,2645	50	3,8432	$\phi =$	3,8432	x	$\Delta T$	1,2645

TUB2-090/09D50	608	319	1,2645	50	4,3236	$\phi =$	4,3236	x	$\Delta T$	1,2645
TUB2-090/10D50	676	354	1,2645	50	4,8040	$\phi =$	4,8040	x	$\Delta T$	1,2645
TUB2-090/11D50	744	390	1,2645	50	5,2844	$\phi =$	5,2844	x	$\Delta T$	1,2645
TUB2-090/12D50	811	425	1,2645	50	5,7647	$\phi =$	5,7647	x	$\Delta T$	1,2645
TUB2-090/13D50	879	461	1,2645	50	6,2451	$\phi =$	6,2451	x	$\Delta T$	1,2645
TUB2-090/14D50	946	496	1,2645	50	6,7255	$\phi =$	6,7255	x	$\Delta T$	1,2645
TUB2-090/15D50	1014	532	1,2645	50	7,2059	$\phi =$	7,2059	x	$\Delta T$	1,2645
TUB2-090/16D50	1082	567	1,2645	50	7,6863	$\phi =$	7,6863	x	$\Delta T$	1,2645
TUB2-090/17D50	1149	602	1,2645	50	8,1667	$\phi =$	8,1667	x	$\Delta T$	1,2645
TUB2-090/18D50	1217	638	1,2645	50	8,6471	$\phi =$	8,6471	x	$\Delta T$	1,2645
TUB2-090/19D50	1284	673	1,2645	50	9,1275	$\phi =$	9,1275	x	$\Delta T$	1,2645
TUB2-090/20D50	1352	709	1,2645	50	9,6079	$\phi =$	9,6079	x	$\Delta T$	1,2645
TUB2-090/21D50	1420	744	1,2645	50	10,0883	$\phi =$	10,0883	x	$\Delta T$	1,2645
TUB2-090/22D50	1487	780	1,2645	50	10,5687	$\phi =$	10,5687	x	$\Delta T$	1,2645
TUB2-090/23D50	1555	815	1,2645	50	11,0491	$\phi =$	11,0491	x	$\Delta T$	1,2645
TUB2-090/24D50	1622	850	1,2645	50	11,5295	$\phi =$	11,5295	x	$\Delta T$	1,2645
TUB2-090/25D50	1690	886	1,2645	50	12,0099	$\phi =$	12,0099	x	$\Delta T$	1,2645
TUB2-090/26D50	1758	921	1,2645	50	12,4903	$\phi =$	12,4903	x	$\Delta T$	1,2645
TUB2-090/27D50	1825	957	1,2645	50	12,9707	$\phi =$	12,9707	x	$\Delta T$	1,2645
TUB2-090/28D50	1893	992	1,2645	50	13,4511	$\phi =$	13,4511	x	$\Delta T$	1,2645
TUB2-090/29D50	1960	1028	1,2645	50	13,9315	$\phi =$	13,9315	x	$\Delta T$	1,2645
TUB2-090/30D50	2028	1063	1,2645	50	14,4119	$\phi =$	14,4119	x	$\Delta T$	1,2645
TUB2-090/31D50	2096	1098	1,2645	50	14,8923	$\phi =$	14,8923	x	$\Delta T$	1,2645
TUB2-090/32D50	2163	1134	1,2645	50	15,3727	$\phi =$	15,3727	x	$\Delta T$	1,2645
TUB2-090/33D50	2231	1169	1,2645	50	15,8531	$\phi =$	15,8531	x	$\Delta T$	1,2645
TUB2-090/34D50	2298	1205	1,2645	50	16,3335	$\phi =$	16,3335	x	$\Delta T$	1,2645
TUB2-090/35D50	2366	1240	1,2645	50	16,8139	$\phi =$	16,8139	x	$\Delta T$	1,2645
TUB2-090/36D50	2434	1276	1,2645	50	17,2942	$\phi =$	17,2942	x	$\Delta T$	1,2645
TUB2-090/37D50	2501	1311	1,2645	50	17,7746	$\phi =$	17,7746	x	$\Delta T$	1,2645
TUB2-090/38D50	2569	1346	1,2645	50	18,2550	$\phi =$	18,2550	x	$\Delta T$	1,2645
TUB2-090/39D50	2636	1382	1,2645	50	18,7354	$\phi =$	18,7354	x	$\Delta T$	1,2645
TUB2-090/40D50	2704	1417	1,2645	50	19,2158	$\phi =$	19,2158	x	$\Delta T$	1,2645
TUB2-090/41D50	2772	1453	1,2645	50	19,6962	$\phi =$	19,6962	x	$\Delta T$	1,2645
TUB2-090/42D50	2839	1488	1,2645	50	20,1766	$\phi =$	20,1766	x	$\Delta T$	1,2645
TUB2-090/43D50	2907	1524	1,2645	50	20,6570	$\phi =$	20,6570	x	$\Delta T$	1,2645
TUB2-090/44D50	2974	1559	1,2645	50	21,1374	$\phi =$	21,1374	x	$\Delta T$	1,2645
TUB2-090/45D50	3042	1595	1,2645	50	21,6178	$\phi =$	21,6178	x	$\Delta T$	1,2645
TUB2-100/02D50	151	79	1,2635	50	1,0744	$\phi =$	1,0744	x	$\Delta T$	1,2635
TUB2-100/03D50	226	118	1,2635	50	1,6116	$\phi =$	1,6116	x	$\Delta T$	1,2635
TUB2-100/04D50	301	158	1,2635	50	2,1489	$\phi =$	2,1489	x	$\Delta T$	1,2635
TUB2-100/05D50	377	197	1,2635	50	2,6861	$\phi =$	2,6861	x	$\Delta T$	1,2635
TUB2-100/06D50	452	237	1,2635	50	3,2233	$\phi =$	3,2233	x	$\Delta T$	1,2635
TUB2-100/07D50	527	276	1,2635	50	3,7605	$\phi =$	3,7605	x	$\Delta T$	1,2635
TUB2-100/08D50	602	316	1,2635	50	4,2977	$\phi =$	4,2977	x	$\Delta T$	1,2635
TUB2-100/09D50	678	355	1,2635	50	4,8349	$\phi =$	4,8349	x	$\Delta T$	1,2635
TUB2-100/10D50	753	395	1,2635	50	5,3721	$\phi =$	5,3721	x	$\Delta T$	1,2635
TUB2-100/11D50	828	434	1,2635	50	5,9093	$\phi =$	5,9093	x	$\Delta T$	1,2635

TUB2-100/12D50	904	474	1,2635	50	6,4466	$\phi =$	6,4466	x	$\Delta T$	1,2635
TUB2-100/13D50	979	513	1,2635	50	6,9838	$\phi =$	6,9838	x	$\Delta T$	1,2635
TUB2-100/14D50	1054	553	1,2635	50	7,5210	$\phi =$	7,5210	x	$\Delta T$	1,2635
TUB2-100/15D50	1130	592	1,2635	50	8,0582	$\phi =$	8,0582	x	$\Delta T$	1,2635
TUB2-100/16D50	1205	632	1,2635	50	8,5954	$\phi =$	8,5954	x	$\Delta T$	1,2635
TUB2-100/17D50	1280	671	1,2635	50	9,1326	$\phi =$	9,1326	x	$\Delta T$	1,2635
TUB2-100/18D50	1355	711	1,2635	50	9,6698	$\phi =$	9,6698	x	$\Delta T$	1,2635
TUB2-100/19D50	1431	750	1,2635	50	10,2070	$\phi =$	10,2070	x	$\Delta T$	1,2635
TUB2-100/20D50	1506	790	1,2635	50	10,7443	$\phi =$	10,7443	x	$\Delta T$	1,2635
TUB2-100/21D50	1581	829	1,2635	50	11,2815	$\phi =$	11,2815	x	$\Delta T$	1,2635
TUB2-100/22D50	1657	869	1,2635	50	11,8187	$\phi =$	11,8187	x	$\Delta T$	1,2635
TUB2-100/23D50	1732	908	1,2635	50	12,3559	$\phi =$	12,3559	x	$\Delta T$	1,2635
TUB2-100/24D50	1807	948	1,2635	50	12,8931	$\phi =$	12,8931	x	$\Delta T$	1,2635
TUB2-100/25D50	1883	987	1,2635	50	13,4303	$\phi =$	13,4303	x	$\Delta T$	1,2635
TUB2-100/26D50	1958	1027	1,2635	50	13,9675	$\phi =$	13,9675	x	$\Delta T$	1,2635
TUB2-100/27D50	2033	1066	1,2635	50	14,5047	$\phi =$	14,5047	x	$\Delta T$	1,2635
TUB2-100/28D50	2108	1106	1,2635	50	15,0420	$\phi =$	15,0420	x	$\Delta T$	1,2635
TUB2-100/29D50	2184	1145	1,2635	50	15,5792	$\phi =$	15,5792	x	$\Delta T$	1,2635
TUB2-100/30D50	2259	1185	1,2635	50	16,1164	$\phi =$	16,1164	x	$\Delta T$	1,2635
TUB2-100/31D50	2334	1224	1,2635	50	16,6536	$\phi =$	16,6536	x	$\Delta T$	1,2635
TUB2-100/32D50	2410	1264	1,2635	50	17,1908	$\phi =$	17,1908	x	$\Delta T$	1,2635
TUB2-100/33D50	2485	1303	1,2635	50	17,7280	$\phi =$	17,7280	x	$\Delta T$	1,2635
TUB2-100/34D50	2560	1343	1,2635	50	18,2652	$\phi =$	18,2652	x	$\Delta T$	1,2635
TUB2-100/35D50	2636	1382	1,2635	50	18,8024	$\phi =$	18,8024	x	$\Delta T$	1,2635
TUB2-100/36D50	2711	1422	1,2635	50	19,3397	$\phi =$	19,3397	x	$\Delta T$	1,2635
TUB2-100/37D50	2786	1461	1,2635	50	19,8769	$\phi =$	19,8769	x	$\Delta T$	1,2635
TUB2-100/38D50	2861	1501	1,2635	50	20,4141	$\phi =$	20,4141	x	$\Delta T$	1,2635
TUB2-100/39D50	2937	1540	1,2635	50	20,9513	$\phi =$	20,9513	x	$\Delta T$	1,2635
TUB2-100/40D50	3012	1580	1,2635	50	21,4885	$\phi =$	21,4885	x	$\Delta T$	1,2635
TUB2-100/41D50	3087	1619	1,2635	50	22,0257	$\phi =$	22,0257	x	$\Delta T$	1,2635
TUB2-100/42D50	3163	1659	1,2635	50	22,5629	$\phi =$	22,5629	x	$\Delta T$	1,2635
TUB2-120/02D50	181	95	1,2672	50	1,2742	$\phi =$	1,2742	x	$\Delta T$	1,2672
TUB2-120/03D50	272	142	1,2672	50	1,9112	$\phi =$	1,9112	x	$\Delta T$	1,2672
TUB2-120/04D50	362	190	1,2672	50	2,5483	$\phi =$	2,5483	x	$\Delta T$	1,2672
TUB2-120/05D50	453	237	1,2672	50	3,1854	$\phi =$	3,1854	x	$\Delta T$	1,2672
TUB2-120/06D50	544	285	1,2672	50	3,8225	$\phi =$	3,8225	x	$\Delta T$	1,2672
TUB2-120/07D50	634	332	1,2672	50	4,4596	$\phi =$	4,4596	x	$\Delta T$	1,2672
TUB2-120/08D50	725	379	1,2672	50	5,0966	$\phi =$	5,0966	x	$\Delta T$	1,2672
TUB2-120/09D50	815	427	1,2672	50	5,7337	$\phi =$	5,7337	x	$\Delta T$	1,2672
TUB2-120/10D50	906	474	1,2672	50	6,3708	$\phi =$	6,3708	x	$\Delta T$	1,2672
TUB2-120/11D50	997	522	1,2672	50	7,0079	$\phi =$	7,0079	x	$\Delta T$	1,2672
TUB2-120/12D50	1087	569	1,2672	50	7,6450	$\phi =$	7,6450	x	$\Delta T$	1,2672
TUB2-120/13D50	1178	617	1,2672	50	8,2820	$\phi =$	8,2820	x	$\Delta T$	1,2672
TUB2-120/14D50	1268	664	1,2672	50	8,9191	$\phi =$	8,9191	x	$\Delta T$	1,2672
TUB2-120/15D50	1359	711	1,2672	50	9,5562	$\phi =$	9,5562	x	$\Delta T$	1,2672
TUB2-120/16D50	1450	759	1,2672	50	10,1933	$\phi =$	10,1933	x	$\Delta T$	1,2672
TUB2-120/17D50	1540	806	1,2672	50	10,8303	$\phi =$	10,8303	x	$\Delta T$	1,2672

TUB2-120/18D50	1631	854	1,2672	50	11,4674	$\phi =$	11,4674	x	$\Delta T$	1,2672
TUB2-120/19D50	1721	901	1,2672	50	12,1045	$\phi =$	12,1045	x	$\Delta T$	1,2672
TUB2-120/20D50	1812	948	1,2672	50	12,7416	$\phi =$	12,7416	x	$\Delta T$	1,2672
TUB2-120/21D50	1903	996	1,2672	50	13,3787	$\phi =$	13,3787	x	$\Delta T$	1,2672
TUB2-120/22D50	1993	1043	1,2672	50	14,0157	$\phi =$	14,0157	x	$\Delta T$	1,2672
TUB2-120/23D50	2084	1091	1,2672	50	14,6528	$\phi =$	14,6528	x	$\Delta T$	1,2672
TUB2-120/24D50	2174	1138	1,2672	50	15,2899	$\phi =$	15,2899	x	$\Delta T$	1,2672
TUB2-120/25D50	2265	1186	1,2672	50	15,9270	$\phi =$	15,9270	x	$\Delta T$	1,2672
TUB2-120/26D50	2356	1233	1,2672	50	16,5641	$\phi =$	16,5641	x	$\Delta T$	1,2672
TUB2-120/27D50	2446	1280	1,2672	50	17,2011	$\phi =$	17,2011	x	$\Delta T$	1,2672
TUB2-120/28D50	2537	1328	1,2672	50	17,8382	$\phi =$	17,8382	x	$\Delta T$	1,2672
TUB2-120/29D50	2627	1375	1,2672	50	18,4753	$\phi =$	18,4753	x	$\Delta T$	1,2672
TUB2-120/30D50	2718	1423	1,2672	50	19,1124	$\phi =$	19,1124	x	$\Delta T$	1,2672
TUB2-120/31D50	2809	1470	1,2672	50	19,7495	$\phi =$	19,7495	x	$\Delta T$	1,2672
TUB2-120/32D50	2899	1518	1,2672	50	20,3865	$\phi =$	20,3865	x	$\Delta T$	1,2672
TUB2-120/33D50	2990	1565	1,2672	50	21,0236	$\phi =$	21,0236	x	$\Delta T$	1,2672
TUB2-120/34D50	3080	1612	1,2672	50	21,6607	$\phi =$	21,6607	x	$\Delta T$	1,2672
TUB2-120/35D50	3171	1660	1,2672	50	22,2978	$\phi =$	22,2978	x	$\Delta T$	1,2672
TUB2-150/02D50	225	117	1,2706	50	1,5585	$\phi =$	1,5585	x	$\Delta T$	1,2706
TUB2-150/03D50	337	176	1,2706	50	2,3377	$\phi =$	2,3377	x	$\Delta T$	1,2706
TUB2-150/04D50	449	235	1,2706	50	3,1169	$\phi =$	3,1169	x	$\Delta T$	1,2706
TUB2-150/05D50	562	293	1,2706	50	3,8962	$\phi =$	3,8962	x	$\Delta T$	1,2706
TUB2-150/06D50	674	352	1,2706	50	4,6754	$\phi =$	4,6754	x	$\Delta T$	1,2706
TUB2-150/07D50	786	411	1,2706	50	5,4546	$\phi =$	5,4546	x	$\Delta T$	1,2706
TUB2-150/08D50	898	469	1,2706	50	6,2339	$\phi =$	6,2339	x	$\Delta T$	1,2706
TUB2-150/09D50	1011	528	1,2706	50	7,0131	$\phi =$	7,0131	x	$\Delta T$	1,2706
TUB2-150/10D50	1123	587	1,2706	50	7,7924	$\phi =$	7,7924	x	$\Delta T$	1,2706
TUB2-150/11D50	1235	645	1,2706	50	8,5716	$\phi =$	8,5716	x	$\Delta T$	1,2706
TUB2-150/12D50	1348	704	1,2706	50	9,3508	$\phi =$	9,3508	x	$\Delta T$	1,2706
TUB2-150/13D50	1460	763	1,2706	50	10,1301	$\phi =$	10,1301	x	$\Delta T$	1,2706
TUB2-150/14D50	1572	822	1,2706	50	10,9093	$\phi =$	10,9093	x	$\Delta T$	1,2706
TUB2-150/15D50	1685	880	1,2706	50	11,6885	$\phi =$	11,6885	x	$\Delta T$	1,2706
TUB2-150/16D50	1797	939	1,2706	50	12,4678	$\phi =$	12,4678	x	$\Delta T$	1,2706
TUB2-150/17D50	1909	998	1,2706	50	13,2470	$\phi =$	13,2470	x	$\Delta T$	1,2706
TUB2-150/18D50	2021	1056	1,2706	50	14,0262	$\phi =$	14,0262	x	$\Delta T$	1,2706
TUB2-150/19D50	2134	1115	1,2706	50	14,8055	$\phi =$	14,8055	x	$\Delta T$	1,2706
TUB2-150/20D50	2246	1174	1,2706	50	15,5847	$\phi =$	15,5847	x	$\Delta T$	1,2706
TUB2-150/21D50	2358	1232	1,2706	50	16,3639	$\phi =$	16,3639	x	$\Delta T$	1,2706
TUB2-150/22D50	2471	1291	1,2706	50	17,1432	$\phi =$	17,1432	x	$\Delta T$	1,2706
TUB2-150/23D50	2583	1350	1,2706	50	17,9224	$\phi =$	17,9224	x	$\Delta T$	1,2706
TUB2-150/24D50	2695	1408	1,2706	50	18,7016	$\phi =$	18,7016	x	$\Delta T$	1,2706
TUB2-150/25D50	2808	1467	1,2706	50	19,4809	$\phi =$	19,4809	x	$\Delta T$	1,2706
TUB2-150/26D50	2920	1526	1,2706	50	20,2601	$\phi =$	20,2601	x	$\Delta T$	1,2706
TUB2-150/27D50	3032	1584	1,2706	50	21,0393	$\phi =$	21,0393	x	$\Delta T$	1,2706
TUB2-150/28D50	3144	1643	1,2706	50	21,8186	$\phi =$	21,8186	x	$\Delta T$	1,2706
TUB2-180/02D50	265	138	1,2747	50	1,8082	$\phi =$	1,8082	x	$\Delta T$	1,2747
TUB2-180/03D50	397	207	1,2747	50	2,7123	$\phi =$	2,7123	x	$\Delta T$	1,2747

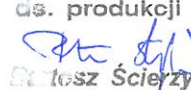
TUB2-180/04D50	530	276	1,2747	50	3,6164	$\phi =$	3,6164	x	$\Delta T$	1,2747
TUB2-180/05D50	662	345	1,2747	50	4,5204	$\phi =$	4,5204	x	$\Delta T$	1,2747
TUB2-180/06D50	794	414	1,2747	50	5,4245	$\phi =$	5,4245	x	$\Delta T$	1,2747
TUB2-180/07D50	927	483	1,2747	50	6,3286	$\phi =$	6,3286	x	$\Delta T$	1,2747
TUB2-180/08D50	1059	552	1,2747	50	7,2327	$\phi =$	7,2327	x	$\Delta T$	1,2747
TUB2-180/09D50	1192	621	1,2747	50	8,1368	$\phi =$	8,1368	x	$\Delta T$	1,2747
TUB2-180/10D50	1324	690	1,2747	50	9,0409	$\phi =$	9,0409	x	$\Delta T$	1,2747
TUB2-180/11D50	1456	759	1,2747	50	9,9450	$\phi =$	9,9450	x	$\Delta T$	1,2747
TUB2-180/12D50	1589	828	1,2747	50	10,8491	$\phi =$	10,8491	x	$\Delta T$	1,2747
TUB2-180/13D50	1721	898	1,2747	50	11,7531	$\phi =$	11,7531	x	$\Delta T$	1,2747
TUB2-180/14D50	1854	967	1,2747	50	12,6572	$\phi =$	12,6572	x	$\Delta T$	1,2747
TUB2-180/15D50	1986	1036	1,2747	50	13,5613	$\phi =$	13,5613	x	$\Delta T$	1,2747
TUB2-180/16D50	2118	1105	1,2747	50	14,4654	$\phi =$	14,4654	x	$\Delta T$	1,2747
TUB2-180/17D50	2251	1174	1,2747	50	15,3695	$\phi =$	15,3695	x	$\Delta T$	1,2747
TUB2-180/18D50	2383	1243	1,2747	50	16,2736	$\phi =$	16,2736	x	$\Delta T$	1,2747
TUB2-180/19D50	2516	1312	1,2747	50	17,1777	$\phi =$	17,1777	x	$\Delta T$	1,2747
TUB2-180/20D50	2648	1381	1,2747	50	18,0818	$\phi =$	18,0818	x	$\Delta T$	1,2747
TUB2-180/21D50	2780	1450	1,2747	50	18,9859	$\phi =$	18,9859	x	$\Delta T$	1,2747
TUB2-180/22D50	2913	1519	1,2747	50	19,8899	$\phi =$	19,8899	x	$\Delta T$	1,2747
TUB2-180/23D50	3045	1588	1,2747	50	20,7940	$\phi =$	20,7940	x	$\Delta T$	1,2747
TUB2-200/02D50	290	151	1,2778	50	1,9537	$\phi =$	1,9537	x	$\Delta T$	1,2778
TUB2-200/03D50	434	226	1,2778	50	2,9305	$\phi =$	2,9305	x	$\Delta T$	1,2778
TUB2-200/04D50	579	302	1,2778	50	3,9074	$\phi =$	3,9074	x	$\Delta T$	1,2778
TUB2-200/05D50	724	377	1,2778	50	4,8842	$\phi =$	4,8842	x	$\Delta T$	1,2778
TUB2-200/06D50	869	452	1,2778	50	5,8611	$\phi =$	5,8611	x	$\Delta T$	1,2778
TUB2-200/07D50	1014	528	1,2778	50	6,8379	$\phi =$	6,8379	x	$\Delta T$	1,2778
TUB2-200/08D50	1158	603	1,2778	50	7,8147	$\phi =$	7,8147	x	$\Delta T$	1,2778
TUB2-200/09D50	1303	678	1,2778	50	8,7916	$\phi =$	8,7916	x	$\Delta T$	1,2778
TUB2-200/10D50	1448	754	1,2778	50	9,7684	$\phi =$	9,7684	x	$\Delta T$	1,2778
TUB2-200/11D50	1593	829	1,2778	50	10,7453	$\phi =$	10,7453	x	$\Delta T$	1,2778
TUB2-200/12D50	1738	905	1,2778	50	11,7221	$\phi =$	11,7221	x	$\Delta T$	1,2778
TUB2-200/13D50	1882	980	1,2778	50	12,6990	$\phi =$	12,6990	x	$\Delta T$	1,2778
TUB2-200/14D50	2027	1055	1,2778	50	13,6758	$\phi =$	13,6758	x	$\Delta T$	1,2778
TUB2-200/15D50	2172	1131	1,2778	50	14,6526	$\phi =$	14,6526	x	$\Delta T$	1,2778
TUB2-200/16D50	2317	1206	1,2778	50	15,6295	$\phi =$	15,6295	x	$\Delta T$	1,2778
TUB2-200/17D50	2462	1282	1,2778	50	16,6063	$\phi =$	16,6063	x	$\Delta T$	1,2778
TUB2-200/18D50	2606	1357	1,2778	50	17,5832	$\phi =$	17,5832	x	$\Delta T$	1,2778
TUB2-200/19D50	2751	1432	1,2778	50	18,5600	$\phi =$	18,5600	x	$\Delta T$	1,2778
TUB2-200/20D50	2896	1508	1,2778	50	19,5369	$\phi =$	19,5369	x	$\Delta T$	1,2778
TUB2-200/21D50	3041	1583	1,2778	50	20,5137	$\phi =$	20,5137	x	$\Delta T$	1,2778

W imieniu producenta podpisał:  
(Signed for and on behalf of the manufacturer by:)

Z-ca Prezesa ds. Produkcji  
Bartosz Ścierzyński  
Nowa Wieś 19.05.2021 r.

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**Z-ca PREZESA**  
ds. produkcji  
  
Bartosz Ścierzyński

(podpis)  
(signature)