

DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH
(DECLARATION OF PERFORMANCE)
Nr (No.) **NDWU/1/TUBUS 2 D50L/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 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.)																								
4. System(-y) oceny i weryfikacji stałości właściwości użytkowych: (System/s of AVCP:) System 3																								
5. Norma zharmonizowana: (Harmonised standard:) PN-EN 442-1:2015 EN 442-1:2014																								
6. Jednostka lub jednostki notyfikowane: (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)																								
7. Deklarowane właściwości użytkowe: (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;"> Reakcja na ogień (Reaction to fire) </td> <td style="text-align: center; padding: 2px;">A1</td> <td rowspan="10" style="vertical-align: middle; text-align: center; padding: 2px;"> PN-EN 442-1:2015 EN 442-1:2014 </td> </tr> <tr> <td style="padding: 2px;"> Uwalnianie substancji niebezpiecznych (Release of dangerous substances) </td> <td style="text-align: center; padding: 2px;">Nie ma (None)</td> </tr> <tr> <td style="padding: 2px;"> Szczelność pod działaniem ciśnienia (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;"> Temperatura powierzchni (Surface temperature) </td> <td style="text-align: center; padding: 2px;">Maksymalnie 95 °C (Maximum 95 °C)</td> </tr> <tr> <td style="padding: 2px;"> Odporność na działanie ciśnienia (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;"> Nominalna moc cieplna (Φ 50 , Φ 30) (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;"> Moc cieplna w różnych warunkach eksploatacyjnych (charakterystyka) (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;"> Odporność na korozję (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;"> Odporność na słabe uderzenia (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	Reakcja na ogień (Reaction to fire)	A1	PN-EN 442-1:2015 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 1000 [kPa])	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)
Zasadnicze charakterystyki Essential characteristics	Właściwości użytkowe Performance	Zharmonizowana specyfikacja techniczna Harmonised technical specification																						
Reakcja na ogień (Reaction to fire)	A1	PN-EN 442-1:2015 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])																							
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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.)

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)				
TUB2-020/02D50L	25	13	1,2611	50	0,1772	φ =	0,1772	x	ΔT	1,2611
TUB2-020/03D50L	37	19	1,2611	50	0,2657	φ =	0,2657	x	ΔT	1,2611
TUB2-020/04D50L	49	26	1,2611	50	0,3543	φ =	0,3543	x	ΔT	1,2611
TUB2-020/05D50L	62	32	1,2611	50	0,4429	φ =	0,4429	x	ΔT	1,2611
TUB2-020/06D50L	74	39	1,2611	50	0,5315	φ =	0,5315	x	ΔT	1,2611
TUB2-020/07D50L	86	45	1,2611	50	0,6201	φ =	0,6201	x	ΔT	1,2611
TUB2-020/08D50L	98	52	1,2611	50	0,7086	φ =	0,7086	x	ΔT	1,2611
TUB2-020/09D50L	111	58	1,2611	50	0,7972	φ =	0,7972	x	ΔT	1,2611
TUB2-020/10D50L	123	65	1,2611	50	0,8858	φ =	0,8858	x	ΔT	1,2611
TUB2-020/11D50L	135	71	1,2611	50	0,9744	φ =	0,9744	x	ΔT	1,2611
TUB2-020/12D50L	148	78	1,2611	50	1,0630	φ =	1,0630	x	ΔT	1,2611
TUB2-020/13D50L	160	84	1,2611	50	1,1515	φ =	1,1515	x	ΔT	1,2611
TUB2-020/14D50L	172	90	1,2611	50	1,2401	φ =	1,2401	x	ΔT	1,2611
TUB2-020/15D50L	185	97	1,2611	50	1,3287	φ =	1,3287	x	ΔT	1,2611
TUB2-020/16D50L	197	103	1,2611	50	1,4173	φ =	1,4173	x	ΔT	1,2611
TUB2-020/17D50L	209	110	1,2611	50	1,5059	φ =	1,5059	x	ΔT	1,2611
TUB2-020/18D50L	221	116	1,2611	50	1,5944	φ =	1,5944	x	ΔT	1,2611
TUB2-020/19D50L	234	123	1,2611	50	1,6830	φ =	1,6830	x	ΔT	1,2611
TUB2-020/20D50L	246	129	1,2611	50	1,7716	φ =	1,7716	x	ΔT	1,2611
TUB2-020/21D50L	258	136	1,2611	50	1,8602	φ =	1,8602	x	ΔT	1,2611
TUB2-020/22D50L	271	142	1,2611	50	1,9488	φ =	1,9488	x	ΔT	1,2611
TUB2-020/23D50L	283	149	1,2611	50	2,0373	φ =	2,0373	x	ΔT	1,2611
TUB2-020/24D50L	295	155	1,2611	50	2,1259	φ =	2,1259	x	ΔT	1,2611
TUB2-020/25D50L	308	161	1,2611	50	2,2145	φ =	2,2145	x	ΔT	1,2611
TUB2-020/26D50L	320	168	1,2611	50	2,3031	φ =	2,3031	x	ΔT	1,2611
TUB2-020/27D50L	332	174	1,2611	50	2,3917	φ =	2,3917	x	ΔT	1,2611
TUB2-020/28D50L	344	181	1,2611	50	2,4802	φ =	2,4802	x	ΔT	1,2611
TUB2-020/29D50L	357	187	1,2611	50	2,5688	φ =	2,5688	x	ΔT	1,2611
TUB2-020/30D50L	369	194	1,2611	50	2,6574	φ =	2,6574	x	ΔT	1,2611
TUB2-020/31D50L	381	200	1,2611	50	2,7460	φ =	2,7460	x	ΔT	1,2611
TUB2-020/32D50L	394	207	1,2611	50	2,8345	φ =	2,8345	x	ΔT	1,2611
TUB2-020/33D50L	406	213	1,2611	50	2,9231	φ =	2,9231	x	ΔT	1,2611
TUB2-020/34D50L	418	220	1,2611	50	3,0117	φ =	3,0117	x	ΔT	1,2611
TUB2-020/35D50L	431	226	1,2611	50	3,1003	φ =	3,1003	x	ΔT	1,2611
TUB2-020/36D50L	443	233	1,2611	50	3,1889	φ =	3,1889	x	ΔT	1,2611
TUB2-020/37D50L	455	239	1,2611	50	3,2774	φ =	3,2774	x	ΔT	1,2611

TUB2-020/38D50L	467	245	1,2611	50	3,3660	$\phi =$	3,3660	x	ΔT	1,2611
TUB2-020/39D50L	480	252	1,2611	50	3,4546	$\phi =$	3,4546	x	ΔT	1,2611
TUB2-020/40D50L	492	258	1,2611	50	3,5432	$\phi =$	3,5432	x	ΔT	1,2611
TUB2-020/41D50L	504	265	1,2611	50	3,6318	$\phi =$	3,6318	x	ΔT	1,2611
TUB2-020/42D50L	517	271	1,2611	50	3,7203	$\phi =$	3,7203	x	ΔT	1,2611
TUB2-020/43D50L	529	278	1,2611	50	3,8089	$\phi =$	3,8089	x	ΔT	1,2611
TUB2-020/44D50L	541	284	1,2611	50	3,8975	$\phi =$	3,8975	x	ΔT	1,2611
TUB2-020/45D50L	554	291	1,2611	50	3,9861	$\phi =$	3,9861	x	ΔT	1,2611
TUB2-030/02D50L	40	21	1,2613	50	0,2864	$\phi =$	0,2864	x	ΔT	1,2613
TUB2-030/03D50L	60	31	1,2613	50	0,4296	$\phi =$	0,4296	x	ΔT	1,2613
TUB2-030/04D50L	80	42	1,2613	50	0,5728	$\phi =$	0,5728	x	ΔT	1,2613
TUB2-030/05D50L	100	52	1,2613	50	0,7160	$\phi =$	0,7160	x	ΔT	1,2613
TUB2-030/06D50L	119	63	1,2613	50	0,8592	$\phi =$	0,8592	x	ΔT	1,2613
TUB2-030/07D50L	139	73	1,2613	50	1,0024	$\phi =$	1,0024	x	ΔT	1,2613
TUB2-030/08D50L	159	84	1,2613	50	1,1456	$\phi =$	1,1456	x	ΔT	1,2613
TUB2-030/09D50L	179	94	1,2613	50	1,2888	$\phi =$	1,2888	x	ΔT	1,2613
TUB2-030/10D50L	199	104	1,2613	50	1,4320	$\phi =$	1,4320	x	ΔT	1,2613
TUB2-030/11D50L	219	115	1,2613	50	1,5752	$\phi =$	1,5752	x	ΔT	1,2613
TUB2-030/12D50L	239	125	1,2613	50	1,7184	$\phi =$	1,7184	x	ΔT	1,2613
TUB2-030/13D50L	259	136	1,2613	50	1,8616	$\phi =$	1,8616	x	ΔT	1,2613
TUB2-030/14D50L	279	146	1,2613	50	2,0048	$\phi =$	2,0048	x	ΔT	1,2613
TUB2-030/15D50L	299	157	1,2613	50	2,1480	$\phi =$	2,1480	x	ΔT	1,2613
TUB2-030/16D50L	318	167	1,2613	50	2,2912	$\phi =$	2,2912	x	ΔT	1,2613
TUB2-030/17D50L	338	178	1,2613	50	2,4344	$\phi =$	2,4344	x	ΔT	1,2613
TUB2-030/18D50L	358	188	1,2613	50	2,5776	$\phi =$	2,5776	x	ΔT	1,2613
TUB2-030/19D50L	378	199	1,2613	50	2,7208	$\phi =$	2,7208	x	ΔT	1,2613
TUB2-030/20D50L	398	209	1,2613	50	2,8640	$\phi =$	2,8640	x	ΔT	1,2613
TUB2-030/21D50L	418	219	1,2613	50	3,0072	$\phi =$	3,0072	x	ΔT	1,2613
TUB2-030/22D50L	438	230	1,2613	50	3,1504	$\phi =$	3,1504	x	ΔT	1,2613
TUB2-030/23D50L	458	240	1,2613	50	3,2936	$\phi =$	3,2936	x	ΔT	1,2613
TUB2-030/24D50L	478	251	1,2613	50	3,4368	$\phi =$	3,4368	x	ΔT	1,2613
TUB2-030/25D50L	498	261	1,2613	50	3,5800	$\phi =$	3,5800	x	ΔT	1,2613
TUB2-030/26D50L	517	272	1,2613	50	3,7232	$\phi =$	3,7232	x	ΔT	1,2613
TUB2-030/27D50L	537	282	1,2613	50	3,8664	$\phi =$	3,8664	x	ΔT	1,2613
TUB2-030/28D50L	557	293	1,2613	50	4,0096	$\phi =$	4,0096	x	ΔT	1,2613
TUB2-030/29D50L	577	303	1,2613	50	4,1528	$\phi =$	4,1528	x	ΔT	1,2613
TUB2-030/30D50L	597	313	1,2613	50	4,2960	$\phi =$	4,2960	x	ΔT	1,2613
TUB2-030/31D50L	617	324	1,2613	50	4,4392	$\phi =$	4,4392	x	ΔT	1,2613
TUB2-030/32D50L	637	334	1,2613	50	4,5824	$\phi =$	4,5824	x	ΔT	1,2613
TUB2-030/33D50L	657	345	1,2613	50	4,7256	$\phi =$	4,7256	x	ΔT	1,2613
TUB2-030/34D50L	677	355	1,2613	50	4,8688	$\phi =$	4,8688	x	ΔT	1,2613
TUB2-030/35D50L	697	366	1,2613	50	5,0120	$\phi =$	5,0120	x	ΔT	1,2613
TUB2-030/36D50L	716	376	1,2613	50	5,1552	$\phi =$	5,1552	x	ΔT	1,2613
TUB2-030/37D50L	736	387	1,2613	50	5,2984	$\phi =$	5,2984	x	ΔT	1,2613
TUB2-030/38D50L	756	397	1,2613	50	5,4416	$\phi =$	5,4416	x	ΔT	1,2613
TUB2-030/39D50L	776	407	1,2613	50	5,5848	$\phi =$	5,5848	x	ΔT	1,2613
TUB2-030/40D50L	796	418	1,2613	50	5,7280	$\phi =$	5,7280	x	ΔT	1,2613

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TUB2-030/41D50L	816	428	1,2613	50	5,8712	$\phi =$	5,8712	x	ΔT	1,2613
TUB2-030/42D50L	836	439	1,2613	50	6,0144	$\phi =$	6,0144	x	ΔT	1,2613
TUB2-030/43D50L	856	449	1,2613	50	6,1576	$\phi =$	6,1576	x	ΔT	1,2613
TUB2-030/44D50L	876	460	1,2613	50	6,3008	$\phi =$	6,3008	x	ΔT	1,2613
TUB2-030/45D50L	896	470	1,2613	50	6,4440	$\phi =$	6,4440	x	ΔT	1,2613
TUB2-040/02D50L	56	29	1,2616	50	0,3996	$\phi =$	0,3996	x	ΔT	1,2616
TUB2-040/03D50L	83	44	1,2616	50	0,5994	$\phi =$	0,5994	x	ΔT	1,2616
TUB2-040/04D50L	111	58	1,2616	50	0,7993	$\phi =$	0,7993	x	ΔT	1,2616
TUB2-040/05D50L	139	73	1,2616	50	0,9991	$\phi =$	0,9991	x	ΔT	1,2616
TUB2-040/06D50L	167	88	1,2616	50	1,1989	$\phi =$	1,1989	x	ΔT	1,2616
TUB2-040/07D50L	195	102	1,2616	50	1,3987	$\phi =$	1,3987	x	ΔT	1,2616
TUB2-040/08D50L	222	117	1,2616	50	1,5985	$\phi =$	1,5985	x	ΔT	1,2616
TUB2-040/09D50L	250	131	1,2616	50	1,7983	$\phi =$	1,7983	x	ΔT	1,2616
TUB2-040/10D50L	278	146	1,2616	50	1,9981	$\phi =$	1,9981	x	ΔT	1,2616
TUB2-040/11D50L	306	161	1,2616	50	2,1979	$\phi =$	2,1979	x	ΔT	1,2616
TUB2-040/12D50L	334	175	1,2616	50	2,3978	$\phi =$	2,3978	x	ΔT	1,2616
TUB2-040/13D50L	361	190	1,2616	50	2,5976	$\phi =$	2,5976	x	ΔT	1,2616
TUB2-040/14D50L	389	204	1,2616	50	2,7974	$\phi =$	2,7974	x	ΔT	1,2616
TUB2-040/15D50L	417	219	1,2616	50	2,9972	$\phi =$	2,9972	x	ΔT	1,2616
TUB2-040/16D50L	445	233	1,2616	50	3,1970	$\phi =$	3,1970	x	ΔT	1,2616
TUB2-040/17D50L	473	248	1,2616	50	3,3968	$\phi =$	3,3968	x	ΔT	1,2616
TUB2-040/18D50L	500	263	1,2616	50	3,5966	$\phi =$	3,5966	x	ΔT	1,2616
TUB2-040/19D50L	528	277	1,2616	50	3,7965	$\phi =$	3,7965	x	ΔT	1,2616
TUB2-040/20D50L	556	292	1,2616	50	3,9963	$\phi =$	3,9963	x	ΔT	1,2616
TUB2-040/21D50L	584	306	1,2616	50	4,1961	$\phi =$	4,1961	x	ΔT	1,2616
TUB2-040/22D50L	612	321	1,2616	50	4,3959	$\phi =$	4,3959	x	ΔT	1,2616
TUB2-040/23D50L	639	336	1,2616	50	4,5957	$\phi =$	4,5957	x	ΔT	1,2616
TUB2-040/24D50L	667	350	1,2616	50	4,7955	$\phi =$	4,7955	x	ΔT	1,2616
TUB2-040/25D50L	695	365	1,2616	50	4,9953	$\phi =$	4,9953	x	ΔT	1,2616
TUB2-040/26D50L	723	379	1,2616	50	5,1951	$\phi =$	5,1951	x	ΔT	1,2616
TUB2-040/27D50L	751	394	1,2616	50	5,3950	$\phi =$	5,3950	x	ΔT	1,2616
TUB2-040/28D50L	778	409	1,2616	50	5,5948	$\phi =$	5,5948	x	ΔT	1,2616
TUB2-040/29D50L	806	423	1,2616	50	5,7946	$\phi =$	5,7946	x	ΔT	1,2616
TUB2-040/30D50L	834	438	1,2616	50	5,9944	$\phi =$	5,9944	x	ΔT	1,2616
TUB2-040/31D50L	862	452	1,2616	50	6,1942	$\phi =$	6,1942	x	ΔT	1,2616
TUB2-040/32D50L	890	467	1,2616	50	6,3940	$\phi =$	6,3940	x	ΔT	1,2616
TUB2-040/33D50L	917	482	1,2616	50	6,5938	$\phi =$	6,5938	x	ΔT	1,2616
TUB2-040/34D50L	945	496	1,2616	50	6,7936	$\phi =$	6,7936	x	ΔT	1,2616
TUB2-040/35D50L	973	511	1,2616	50	6,9935	$\phi =$	6,9935	x	ΔT	1,2616
TUB2-040/36D50L	1001	525	1,2616	50	7,1933	$\phi =$	7,1933	x	ΔT	1,2616
TUB2-040/37D50L	1029	540	1,2616	50	7,3931	$\phi =$	7,3931	x	ΔT	1,2616
TUB2-040/38D50L	1056	555	1,2616	50	7,5929	$\phi =$	7,5929	x	ΔT	1,2616
TUB2-040/39D50L	1084	569	1,2616	50	7,7927	$\phi =$	7,7927	x	ΔT	1,2616
TUB2-040/40D50L	1112	584	1,2616	50	7,9925	$\phi =$	7,9925	x	ΔT	1,2616
TUB2-040/41D50L	1140	598	1,2616	50	8,1923	$\phi =$	8,1923	x	ΔT	1,2616
TUB2-040/42D50L	1168	613	1,2616	50	8,3922	$\phi =$	8,3922	x	ΔT	1,2616
TUB2-040/43D50L	1195	628	1,2616	50	8,5920	$\phi =$	8,5920	x	ΔT	1,2616

TUB2-040/44D50L	1223	642	1,2616	50	8,7918	$\phi =$	8,7918	x	ΔT	1,2616
TUB2-040/45D50L	1251	657	1,2616	50	8,9916	$\phi =$	8,9916	x	ΔT	1,2616
TUB2-050/02D50L	72	38	1,2620	50	0,5153	$\phi =$	0,5153	x	ΔT	1,2620
TUB2-050/03D50L	108	57	1,2620	50	0,7729	$\phi =$	0,7729	x	ΔT	1,2620
TUB2-050/04D50L	144	75	1,2620	50	1,0305	$\phi =$	1,0305	x	ΔT	1,2620
TUB2-050/05D50L	180	94	1,2620	50	1,2881	$\phi =$	1,2881	x	ΔT	1,2620
TUB2-050/06D50L	215	113	1,2620	50	1,5458	$\phi =$	1,5458	x	ΔT	1,2620
TUB2-050/07D50L	251	132	1,2620	50	1,8034	$\phi =$	1,8034	x	ΔT	1,2620
TUB2-050/08D50L	287	151	1,2620	50	2,0610	$\phi =$	2,0610	x	ΔT	1,2620
TUB2-050/09D50L	323	170	1,2620	50	2,3187	$\phi =$	2,3187	x	ΔT	1,2620
TUB2-050/10D50L	359	188	1,2620	50	2,5763	$\phi =$	2,5763	x	ΔT	1,2620
TUB2-050/11D50L	395	207	1,2620	50	2,8339	$\phi =$	2,8339	x	ΔT	1,2620
TUB2-050/12D50L	431	226	1,2620	50	3,0915	$\phi =$	3,0915	x	ΔT	1,2620
TUB2-050/13D50L	467	245	1,2620	50	3,3492	$\phi =$	3,3492	x	ΔT	1,2620
TUB2-050/14D50L	503	264	1,2620	50	3,6068	$\phi =$	3,6068	x	ΔT	1,2620
TUB2-050/15D50L	539	283	1,2620	50	3,8644	$\phi =$	3,8644	x	ΔT	1,2620
TUB2-050/16D50L	574	301	1,2620	50	4,1221	$\phi =$	4,1221	x	ΔT	1,2620
TUB2-050/17D50L	610	320	1,2620	50	4,3797	$\phi =$	4,3797	x	ΔT	1,2620
TUB2-050/18D50L	646	339	1,2620	50	4,6373	$\phi =$	4,6373	x	ΔT	1,2620
TUB2-050/19D50L	682	358	1,2620	50	4,8949	$\phi =$	4,8949	x	ΔT	1,2620
TUB2-050/20D50L	718	377	1,2620	50	5,1526	$\phi =$	5,1526	x	ΔT	1,2620
TUB2-050/21D50L	754	396	1,2620	50	5,4102	$\phi =$	5,4102	x	ΔT	1,2620
TUB2-050/22D50L	790	415	1,2620	50	5,6678	$\phi =$	5,6678	x	ΔT	1,2620
TUB2-050/23D50L	826	433	1,2620	50	5,9255	$\phi =$	5,9255	x	ΔT	1,2620
TUB2-050/24D50L	862	452	1,2620	50	6,1831	$\phi =$	6,1831	x	ΔT	1,2620
TUB2-050/25D50L	898	471	1,2620	50	6,4407	$\phi =$	6,4407	x	ΔT	1,2620
TUB2-050/26D50L	933	490	1,2620	50	6,6983	$\phi =$	6,6983	x	ΔT	1,2620
TUB2-050/27D50L	969	509	1,2620	50	6,9560	$\phi =$	6,9560	x	ΔT	1,2620
TUB2-050/28D50L	1005	528	1,2620	50	7,2136	$\phi =$	7,2136	x	ΔT	1,2620
TUB2-050/29D50L	1041	546	1,2620	50	7,4712	$\phi =$	7,4712	x	ΔT	1,2620
TUB2-050/30D50L	1077	565	1,2620	50	7,7289	$\phi =$	7,7289	x	ΔT	1,2620
TUB2-050/31D50L	1113	584	1,2620	50	7,9865	$\phi =$	7,9865	x	ΔT	1,2620
TUB2-050/32D50L	1149	603	1,2620	50	8,2441	$\phi =$	8,2441	x	ΔT	1,2620
TUB2-050/33D50L	1185	622	1,2620	50	8,5017	$\phi =$	8,5017	x	ΔT	1,2620
TUB2-050/34D50L	1221	641	1,2620	50	8,7594	$\phi =$	8,7594	x	ΔT	1,2620
TUB2-050/35D50L	1257	659	1,2620	50	9,0170	$\phi =$	9,0170	x	ΔT	1,2620
TUB2-050/36D50L	1292	678	1,2620	50	9,2746	$\phi =$	9,2746	x	ΔT	1,2620
TUB2-050/37D50L	1328	697	1,2620	50	9,5323	$\phi =$	9,5323	x	ΔT	1,2620
TUB2-050/38D50L	1364	716	1,2620	50	9,7899	$\phi =$	9,7899	x	ΔT	1,2620
TUB2-050/39D50L	1400	735	1,2620	50	10,0475	$\phi =$	10,0475	x	ΔT	1,2620
TUB2-050/40D50L	1436	754	1,2620	50	10,3051	$\phi =$	10,3051	x	ΔT	1,2620
TUB2-050/41D50L	1472	773	1,2620	50	10,5628	$\phi =$	10,5628	x	ΔT	1,2620
TUB2-050/42D50L	1508	791	1,2620	50	10,8204	$\phi =$	10,8204	x	ΔT	1,2620
TUB2-050/43D50L	1544	810	1,2620	50	11,0780	$\phi =$	11,0780	x	ΔT	1,2620
TUB2-050/44D50L	1580	829	1,2620	50	11,3357	$\phi =$	11,3357	x	ΔT	1,2620
TUB2-050/45D50L	1616	848	1,2620	50	11,5933	$\phi =$	11,5933	x	ΔT	1,2620
TUB2-070/02D50L	105	55	1,2631	50	0,7474	$\phi =$	0,7474	x	ΔT	1,2631

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TUB2-070/03D50L	157	82	1,2631	50	1,1211	$\phi =$	1,1211	x	ΔT	1,2631
TUB2-070/04D50L	209	110	1,2631	50	1,4948	$\phi =$	1,4948	x	ΔT	1,2631
TUB2-070/05D50L	262	137	1,2631	50	1,8685	$\phi =$	1,8685	x	ΔT	1,2631
TUB2-070/06D50L	314	165	1,2631	50	2,2422	$\phi =$	2,2422	x	ΔT	1,2631
TUB2-070/07D50L	366	192	1,2631	50	2,6160	$\phi =$	2,6160	x	ΔT	1,2631
TUB2-070/08D50L	418	219	1,2631	50	2,9897	$\phi =$	2,9897	x	ΔT	1,2631
TUB2-070/09D50L	471	247	1,2631	50	3,3634	$\phi =$	3,3634	x	ΔT	1,2631
TUB2-070/10D50L	523	274	1,2631	50	3,7371	$\phi =$	3,7371	x	ΔT	1,2631
TUB2-070/11D50L	575	302	1,2631	50	4,1108	$\phi =$	4,1108	x	ΔT	1,2631
TUB2-070/12D50L	628	329	1,2631	50	4,4845	$\phi =$	4,4845	x	ΔT	1,2631
TUB2-070/13D50L	680	357	1,2631	50	4,8582	$\phi =$	4,8582	x	ΔT	1,2631
TUB2-070/14D50L	732	384	1,2631	50	5,2319	$\phi =$	5,2319	x	ΔT	1,2631
TUB2-070/15D50L	785	412	1,2631	50	5,6056	$\phi =$	5,6056	x	ΔT	1,2631
TUB2-070/16D50L	837	439	1,2631	50	5,9793	$\phi =$	5,9793	x	ΔT	1,2631
TUB2-070/17D50L	889	466	1,2631	50	6,3530	$\phi =$	6,3530	x	ΔT	1,2631
TUB2-070/18D50L	941	494	1,2631	50	6,7267	$\phi =$	6,7267	x	ΔT	1,2631
TUB2-070/19D50L	994	521	1,2631	50	7,1005	$\phi =$	7,1005	x	ΔT	1,2631
TUB2-070/20D50L	1046	549	1,2631	50	7,4742	$\phi =$	7,4742	x	ΔT	1,2631
TUB2-070/21D50L	1098	576	1,2631	50	7,8479	$\phi =$	7,8479	x	ΔT	1,2631
TUB2-070/22D50L	1151	604	1,2631	50	8,2216	$\phi =$	8,2216	x	ΔT	1,2631
TUB2-070/23D50L	1203	631	1,2631	50	8,5953	$\phi =$	8,5953	x	ΔT	1,2631
TUB2-070/24D50L	1255	658	1,2631	50	8,9690	$\phi =$	8,9690	x	ΔT	1,2631
TUB2-070/25D50L	1308	686	1,2631	50	9,3427	$\phi =$	9,3427	x	ΔT	1,2631
TUB2-070/26D50L	1360	713	1,2631	50	9,7164	$\phi =$	9,7164	x	ΔT	1,2631
TUB2-070/27D50L	1412	741	1,2631	50	10,0901	$\phi =$	10,0901	x	ΔT	1,2631
TUB2-070/28D50L	1464	768	1,2631	50	10,4638	$\phi =$	10,4638	x	ΔT	1,2631
TUB2-070/29D50L	1517	796	1,2631	50	10,8375	$\phi =$	10,8375	x	ΔT	1,2631
TUB2-070/30D50L	1569	823	1,2631	50	11,2112	$\phi =$	11,2112	x	ΔT	1,2631
TUB2-070/31D50L	1621	850	1,2631	50	11,5850	$\phi =$	11,5850	x	ΔT	1,2631
TUB2-070/32D50L	1674	878	1,2631	50	11,9587	$\phi =$	11,9587	x	ΔT	1,2631
TUB2-070/33D50L	1726	905	1,2631	50	12,3324	$\phi =$	12,3324	x	ΔT	1,2631
TUB2-070/34D50L	1778	933	1,2631	50	12,7061	$\phi =$	12,7061	x	ΔT	1,2631
TUB2-070/35D50L	1831	960	1,2631	50	13,0798	$\phi =$	13,0798	x	ΔT	1,2631
TUB2-070/36D50L	1883	988	1,2631	50	13,4535	$\phi =$	13,4535	x	ΔT	1,2631
TUB2-070/37D50L	1935	1015	1,2631	50	13,8272	$\phi =$	13,8272	x	ΔT	1,2631
TUB2-070/38D50L	1987	1042	1,2631	50	14,2009	$\phi =$	14,2009	x	ΔT	1,2631
TUB2-070/39D50L	2040	1070	1,2631	50	14,5746	$\phi =$	14,5746	x	ΔT	1,2631
TUB2-070/40D50L	2092	1097	1,2631	50	14,9483	$\phi =$	14,9483	x	ΔT	1,2631
TUB2-070/41D50L	2144	1125	1,2631	50	15,3220	$\phi =$	15,3220	x	ΔT	1,2631
TUB2-070/42D50L	2197	1152	1,2631	50	15,6957	$\phi =$	15,6957	x	ΔT	1,2631
TUB2-070/43D50L	2249	1180	1,2631	50	16,0695	$\phi =$	16,0695	x	ΔT	1,2631
TUB2-070/44D50L	2301	1207	1,2631	50	16,4432	$\phi =$	16,4432	x	ΔT	1,2631
TUB2-070/45D50L	2354	1235	1,2631	50	16,8169	$\phi =$	16,8169	x	ΔT	1,2631
TUB2-080/02D50L	121	63	1,2638	50	0,8622	$\phi =$	0,8622	x	ΔT	1,2638
TUB2-080/03D50L	182	95	1,2638	50	1,2934	$\phi =$	1,2934	x	ΔT	1,2638
TUB2-080/04D50L	242	127	1,2638	50	1,7245	$\phi =$	1,7245	x	ΔT	1,2638
TUB2-080/05D50L	303	159	1,2638	50	2,1556	$\phi =$	2,1556	x	ΔT	1,2638

TUB2-080/06D50L	363	190	1,2638	50	2,5867	$\phi =$	2,5867	x	ΔT	1,2638
TUB2-080/07D50L	424	222	1,2638	50	3,0178	$\phi =$	3,0178	x	ΔT	1,2638
TUB2-080/08D50L	484	254	1,2638	50	3,4490	$\phi =$	3,4490	x	ΔT	1,2638
TUB2-080/09D50L	545	286	1,2638	50	3,8801	$\phi =$	3,8801	x	ΔT	1,2638
TUB2-080/10D50L	605	317	1,2638	50	4,3112	$\phi =$	4,3112	x	ΔT	1,2638
TUB2-080/11D50L	666	349	1,2638	50	4,7423	$\phi =$	4,7423	x	ΔT	1,2638
TUB2-080/12D50L	726	381	1,2638	50	5,1734	$\phi =$	5,1734	x	ΔT	1,2638
TUB2-080/13D50L	787	412	1,2638	50	5,6045	$\phi =$	5,6045	x	ΔT	1,2638
TUB2-080/14D50L	847	444	1,2638	50	6,0357	$\phi =$	6,0357	x	ΔT	1,2638
TUB2-080/15D50L	908	476	1,2638	50	6,4668	$\phi =$	6,4668	x	ΔT	1,2638
TUB2-080/16D50L	968	508	1,2638	50	6,8979	$\phi =$	6,8979	x	ΔT	1,2638
TUB2-080/17D50L	1029	539	1,2638	50	7,3290	$\phi =$	7,3290	x	ΔT	1,2638
TUB2-080/18D50L	1089	571	1,2638	50	7,7601	$\phi =$	7,7601	x	ΔT	1,2638
TUB2-080/19D50L	1150	603	1,2638	50	8,1913	$\phi =$	8,1913	x	ΔT	1,2638
TUB2-080/20D50L	1210	634	1,2638	50	8,6224	$\phi =$	8,6224	x	ΔT	1,2638
TUB2-080/21D50L	1271	666	1,2638	50	9,0535	$\phi =$	9,0535	x	ΔT	1,2638
TUB2-080/22D50L	1331	698	1,2638	50	9,4846	$\phi =$	9,4846	x	ΔT	1,2638
TUB2-080/23D50L	1392	730	1,2638	50	9,9157	$\phi =$	9,9157	x	ΔT	1,2638
TUB2-080/24D50L	1452	761	1,2638	50	10,3469	$\phi =$	10,3469	x	ΔT	1,2638
TUB2-080/25D50L	1513	793	1,2638	50	10,7780	$\phi =$	10,7780	x	ΔT	1,2638
TUB2-080/26D50L	1573	825	1,2638	50	11,2091	$\phi =$	11,2091	x	ΔT	1,2638
TUB2-080/27D50L	1634	857	1,2638	50	11,6402	$\phi =$	11,6402	x	ΔT	1,2638
TUB2-080/28D50L	1694	888	1,2638	50	12,0713	$\phi =$	12,0713	x	ΔT	1,2638
TUB2-080/29D50L	1755	920	1,2638	50	12,5024	$\phi =$	12,5024	x	ΔT	1,2638
TUB2-080/30D50L	1815	952	1,2638	50	12,9336	$\phi =$	12,9336	x	ΔT	1,2638
TUB2-080/31D50L	1876	983	1,2638	50	13,3647	$\phi =$	13,3647	x	ΔT	1,2638
TUB2-080/32D50L	1936	1015	1,2638	50	13,7958	$\phi =$	13,7958	x	ΔT	1,2638
TUB2-080/33D50L	1997	1047	1,2638	50	14,2269	$\phi =$	14,2269	x	ΔT	1,2638
TUB2-080/34D50L	2057	1079	1,2638	50	14,6580	$\phi =$	14,6580	x	ΔT	1,2638
TUB2-080/35D50L	2118	1110	1,2638	50	15,0892	$\phi =$	15,0892	x	ΔT	1,2638
TUB2-080/36D50L	2178	1142	1,2638	50	15,5203	$\phi =$	15,5203	x	ΔT	1,2638
TUB2-080/37D50L	2239	1174	1,2638	50	15,9514	$\phi =$	15,9514	x	ΔT	1,2638
TUB2-080/38D50L	2299	1205	1,2638	50	16,3825	$\phi =$	16,3825	x	ΔT	1,2638
TUB2-080/39D50L	2360	1237	1,2638	50	16,8136	$\phi =$	16,8136	x	ΔT	1,2638
TUB2-080/40D50L	2420	1269	1,2638	50	17,2448	$\phi =$	17,2448	x	ΔT	1,2638
TUB2-080/41D50L	2481	1301	1,2638	50	17,6759	$\phi =$	17,6759	x	ΔT	1,2638
TUB2-080/42D50L	2541	1332	1,2638	50	18,1070	$\phi =$	18,1070	x	ΔT	1,2638
TUB2-080/43D50L	2602	1364	1,2638	50	18,5381	$\phi =$	18,5381	x	ΔT	1,2638
TUB2-080/44D50L	2662	1396	1,2638	50	18,9692	$\phi =$	18,9692	x	ΔT	1,2638
TUB2-080/45D50L	2723	1428	1,2638	50	19,4004	$\phi =$	19,4004	x	ΔT	1,2638
TUB2-090/02D50L	137	72	1,2645	50	0,9764	$\phi =$	0,9764	x	ΔT	1,2645
TUB2-090/03D50L	206	108	1,2645	50	1,4646	$\phi =$	1,4646	x	ΔT	1,2645
TUB2-090/04D50L	275	144	1,2645	50	1,9529	$\phi =$	1,9529	x	ΔT	1,2645
TUB2-090/05D50L	344	180	1,2645	50	2,4411	$\phi =$	2,4411	x	ΔT	1,2645
TUB2-090/06D50L	412	216	1,2645	50	2,9293	$\phi =$	2,9293	x	ΔT	1,2645
TUB2-090/07D50L	481	252	1,2645	50	3,4175	$\phi =$	3,4175	x	ΔT	1,2645
TUB2-090/08D50L	550	288	1,2645	50	3,9057	$\phi =$	3,9057	x	ΔT	1,2645

TUB2-090/09D50L	618	324	1,2645	50	4,3939	$\phi =$	4,3939	x	ΔT	1,2645
TUB2-090/10D50L	687	360	1,2645	50	4,8821	$\phi =$	4,8821	x	ΔT	1,2645
TUB2-090/11D50L	756	396	1,2645	50	5,3703	$\phi =$	5,3703	x	ΔT	1,2645
TUB2-090/12D50L	824	432	1,2645	50	5,8586	$\phi =$	5,8586	x	ΔT	1,2645
TUB2-090/13D50L	893	468	1,2645	50	6,3468	$\phi =$	6,3468	x	ΔT	1,2645
TUB2-090/14D50L	962	504	1,2645	50	6,8350	$\phi =$	6,8350	x	ΔT	1,2645
TUB2-090/15D50L	1031	540	1,2645	50	7,3232	$\phi =$	7,3232	x	ΔT	1,2645
TUB2-090/16D50L	1099	576	1,2645	50	7,8114	$\phi =$	7,8114	x	ΔT	1,2645
TUB2-090/17D50L	1168	612	1,2645	50	8,2996	$\phi =$	8,2996	x	ΔT	1,2645
TUB2-090/18D50L	1237	648	1,2645	50	8,7878	$\phi =$	8,7878	x	ΔT	1,2645
TUB2-090/19D50L	1305	684	1,2645	50	9,2760	$\phi =$	9,2760	x	ΔT	1,2645
TUB2-090/20D50L	1374	720	1,2645	50	9,7643	$\phi =$	9,7643	x	ΔT	1,2645
TUB2-090/21D50L	1443	756	1,2645	50	10,2525	$\phi =$	10,2525	x	ΔT	1,2645
TUB2-090/22D50L	1511	792	1,2645	50	10,7407	$\phi =$	10,7407	x	ΔT	1,2645
TUB2-090/23D50L	1580	828	1,2645	50	11,2289	$\phi =$	11,2289	x	ΔT	1,2645
TUB2-090/24D50L	1649	864	1,2645	50	11,7171	$\phi =$	11,7171	x	ΔT	1,2645
TUB2-090/25D50L	1718	900	1,2645	50	12,2053	$\phi =$	12,2053	x	ΔT	1,2645
TUB2-090/26D50L	1786	936	1,2645	50	12,6935	$\phi =$	12,6935	x	ΔT	1,2645
TUB2-090/27D50L	1855	972	1,2645	50	13,1817	$\phi =$	13,1817	x	ΔT	1,2645
TUB2-090/28D50L	1924	1008	1,2645	50	13,6700	$\phi =$	13,6700	x	ΔT	1,2645
TUB2-090/29D50L	1992	1044	1,2645	50	14,1582	$\phi =$	14,1582	x	ΔT	1,2645
TUB2-090/30D50L	2061	1080	1,2645	50	14,6464	$\phi =$	14,6464	x	ΔT	1,2645
TUB2-090/31D50L	2130	1116	1,2645	50	15,1346	$\phi =$	15,1346	x	ΔT	1,2645
TUB2-090/32D50L	2198	1152	1,2645	50	15,6228	$\phi =$	15,6228	x	ΔT	1,2645
TUB2-090/33D50L	2267	1188	1,2645	50	16,1110	$\phi =$	16,1110	x	ΔT	1,2645
TUB2-090/34D50L	2336	1224	1,2645	50	16,5992	$\phi =$	16,5992	x	ΔT	1,2645
TUB2-090/35D50L	2405	1260	1,2645	50	17,0874	$\phi =$	17,0874	x	ΔT	1,2645
TUB2-090/36D50L	2473	1296	1,2645	50	17,5757	$\phi =$	17,5757	x	ΔT	1,2645
TUB2-090/37D50L	2542	1332	1,2645	50	18,0639	$\phi =$	18,0639	x	ΔT	1,2645
TUB2-090/38D50L	2611	1368	1,2645	50	18,5521	$\phi =$	18,5521	x	ΔT	1,2645
TUB2-090/39D50L	2679	1404	1,2645	50	19,0403	$\phi =$	19,0403	x	ΔT	1,2645
TUB2-090/40D50L	2748	1440	1,2645	50	19,5285	$\phi =$	19,5285	x	ΔT	1,2645
TUB2-090/41D50L	2817	1476	1,2645	50	20,0167	$\phi =$	20,0167	x	ΔT	1,2645
TUB2-090/42D50L	2885	1512	1,2645	50	20,5049	$\phi =$	20,5049	x	ΔT	1,2645
TUB2-090/43D50L	2954	1548	1,2645	50	20,9932	$\phi =$	20,9932	x	ΔT	1,2645
TUB2-090/44D50L	3023	1584	1,2645	50	21,4814	$\phi =$	21,4814	x	ΔT	1,2645
TUB2-090/45D50L	3092	1620	1,2645	50	21,9696	$\phi =$	21,9696	x	ΔT	1,2645
TUB2-100/02D50L	153	80	1,2653	50	1,0867	$\phi =$	1,0867	x	ΔT	1,2653
TUB2-100/03D50L	230	121	1,2653	50	1,6301	$\phi =$	1,6301	x	ΔT	1,2653
TUB2-100/04D50L	307	161	1,2653	50	2,1734	$\phi =$	2,1734	x	ΔT	1,2653
TUB2-100/05D50L	384	201	1,2653	50	2,7168	$\phi =$	2,7168	x	ΔT	1,2653
TUB2-100/06D50L	460	241	1,2653	50	3,2602	$\phi =$	3,2602	x	ΔT	1,2653
TUB2-100/07D50L	537	281	1,2653	50	3,8035	$\phi =$	3,8035	x	ΔT	1,2653
TUB2-100/08D50L	614	321	1,2653	50	4,3469	$\phi =$	4,3469	x	ΔT	1,2653
TUB2-100/09D50L	690	362	1,2653	50	4,8903	$\phi =$	4,8903	x	ΔT	1,2653
TUB2-100/10D50L	767	402	1,2653	50	5,4336	$\phi =$	5,4336	x	ΔT	1,2653
TUB2-100/11D50L	844	442	1,2653	50	5,9770	$\phi =$	5,9770	x	ΔT	1,2653

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TUB2-100/12D50L	920	482	1,2653	50	6,5203	$\phi =$	6,5203	x	ΔT	1,2653
TUB2-100/13D50L	997	522	1,2653	50	7,0637	$\phi =$	7,0637	x	ΔT	1,2653
TUB2-100/14D50L	1074	563	1,2653	50	7,6071	$\phi =$	7,6071	x	ΔT	1,2653
TUB2-100/15D50L	1151	603	1,2653	50	8,1504	$\phi =$	8,1504	x	ΔT	1,2653
TUB2-100/16D50L	1227	643	1,2653	50	8,6938	$\phi =$	8,6938	x	ΔT	1,2653
TUB2-100/17D50L	1304	683	1,2653	50	9,2371	$\phi =$	9,2371	x	ΔT	1,2653
TUB2-100/18D50L	1381	723	1,2653	50	9,7805	$\phi =$	9,7805	x	ΔT	1,2653
TUB2-100/19D50L	1457	764	1,2653	50	10,3239	$\phi =$	10,3239	x	ΔT	1,2653
TUB2-100/20D50L	1534	804	1,2653	50	10,8672	$\phi =$	10,8672	x	ΔT	1,2653
TUB2-100/21D50L	1611	844	1,2653	50	11,4106	$\phi =$	11,4106	x	ΔT	1,2653
TUB2-100/22D50L	1687	884	1,2653	50	11,9539	$\phi =$	11,9539	x	ΔT	1,2653
TUB2-100/23D50L	1764	924	1,2653	50	12,4973	$\phi =$	12,4973	x	ΔT	1,2653
TUB2-100/24D50L	1841	964	1,2653	50	13,0407	$\phi =$	13,0407	x	ΔT	1,2653
TUB2-100/25D50L	1918	1005	1,2653	50	13,5840	$\phi =$	13,5840	x	ΔT	1,2653
TUB2-100/26D50L	1994	1045	1,2653	50	14,1274	$\phi =$	14,1274	x	ΔT	1,2653
TUB2-100/27D50L	2071	1085	1,2653	50	14,6708	$\phi =$	14,6708	x	ΔT	1,2653
TUB2-100/28D50L	2148	1125	1,2653	50	15,2141	$\phi =$	15,2141	x	ΔT	1,2653
TUB2-100/29D50L	2224	1165	1,2653	50	15,7575	$\phi =$	15,7575	x	ΔT	1,2653
TUB2-100/30D50L	2301	1206	1,2653	50	16,3008	$\phi =$	16,3008	x	ΔT	1,2653
TUB2-100/31D50L	2378	1246	1,2653	50	16,8442	$\phi =$	16,8442	x	ΔT	1,2653
TUB2-100/32D50L	2454	1286	1,2653	50	17,3876	$\phi =$	17,3876	x	ΔT	1,2653
TUB2-100/33D50L	2531	1326	1,2653	50	17,9309	$\phi =$	17,9309	x	ΔT	1,2653
TUB2-100/34D50L	2608	1366	1,2653	50	18,4743	$\phi =$	18,4743	x	ΔT	1,2653
TUB2-100/35D50L	2685	1407	1,2653	50	19,0176	$\phi =$	19,0176	x	ΔT	1,2653
TUB2-100/36D50L	2761	1447	1,2653	50	19,5610	$\phi =$	19,5610	x	ΔT	1,2653
TUB2-100/37D50L	2838	1487	1,2653	50	20,1044	$\phi =$	20,1044	x	ΔT	1,2653
TUB2-100/38D50L	2915	1527	1,2653	50	20,6477	$\phi =$	20,6477	x	ΔT	1,2653
TUB2-100/39D50L	2991	1567	1,2653	50	21,1911	$\phi =$	21,1911	x	ΔT	1,2653
TUB2-100/40D50L	3068	1607	1,2653	50	21,7344	$\phi =$	21,7344	x	ΔT	1,2653
TUB2-100/41D50L	3145	1648	1,2653	50	22,2778	$\phi =$	22,2778	x	ΔT	1,2653
TUB2-100/42D50L	3221	1688	1,2653	50	22,8212	$\phi =$	22,8212	x	ΔT	1,2653
TUB2-120/02D50L	185	97	1,2672	50	1,3009	$\phi =$	1,3009	x	ΔT	1,2672
TUB2-120/03D50L	278	145	1,2672	50	1,9513	$\phi =$	1,9513	x	ΔT	1,2672
TUB2-120/04D50L	370	194	1,2672	50	2,6018	$\phi =$	2,6018	x	ΔT	1,2672
TUB2-120/05D50L	463	242	1,2672	50	3,2522	$\phi =$	3,2522	x	ΔT	1,2672
TUB2-120/06D50L	555	291	1,2672	50	3,9026	$\phi =$	3,9026	x	ΔT	1,2672
TUB2-120/07D50L	648	339	1,2672	50	4,5531	$\phi =$	4,5531	x	ΔT	1,2672
TUB2-120/08D50L	740	387	1,2672	50	5,2035	$\phi =$	5,2035	x	ΔT	1,2672
TUB2-120/09D50L	833	436	1,2672	50	5,8540	$\phi =$	5,8540	x	ΔT	1,2672
TUB2-120/10D50L	925	484	1,2672	50	6,5044	$\phi =$	6,5044	x	ΔT	1,2672
TUB2-120/11D50L	1018	533	1,2672	50	7,1548	$\phi =$	7,1548	x	ΔT	1,2672
TUB2-120/12D50L	1110	581	1,2672	50	7,8053	$\phi =$	7,8053	x	ΔT	1,2672
TUB2-120/13D50L	1203	629	1,2672	50	8,4557	$\phi =$	8,4557	x	ΔT	1,2672
TUB2-120/14D50L	1295	678	1,2672	50	9,1062	$\phi =$	9,1062	x	ΔT	1,2672
TUB2-120/15D50L	1388	726	1,2672	50	9,7566	$\phi =$	9,7566	x	ΔT	1,2672
TUB2-120/16D50L	1480	775	1,2672	50	10,4070	$\phi =$	10,4070	x	ΔT	1,2672
TUB2-120/17D50L	1573	823	1,2672	50	11,0575	$\phi =$	11,0575	x	ΔT	1,2672

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TUB2-120/18D50L	1665	872	1,2672	50	11,7079	$\phi =$	11,7079	x	ΔT	1,2672
TUB2-120/19D50L	1758	920	1,2672	50	12,3584	$\phi =$	12,3584	x	ΔT	1,2672
TUB2-120/20D50L	1850	968	1,2672	50	13,0088	$\phi =$	13,0088	x	ΔT	1,2672
TUB2-120/21D50L	1943	1017	1,2672	50	13,6592	$\phi =$	13,6592	x	ΔT	1,2672
TUB2-120/22D50L	2035	1065	1,2672	50	14,3097	$\phi =$	14,3097	x	ΔT	1,2672
TUB2-120/23D50L	2128	1114	1,2672	50	14,9601	$\phi =$	14,9601	x	ΔT	1,2672
TUB2-120/24D50L	2220	1162	1,2672	50	15,6105	$\phi =$	15,6105	x	ΔT	1,2672
TUB2-120/25D50L	2313	1210	1,2672	50	16,2610	$\phi =$	16,2610	x	ΔT	1,2672
TUB2-120/26D50L	2405	1259	1,2672	50	16,9114	$\phi =$	16,9114	x	ΔT	1,2672
TUB2-120/27D50L	2498	1307	1,2672	50	17,5619	$\phi =$	17,5619	x	ΔT	1,2672
TUB2-120/28D50L	2590	1356	1,2672	50	18,2123	$\phi =$	18,2123	x	ΔT	1,2672
TUB2-120/29D50L	2683	1404	1,2672	50	18,8627	$\phi =$	18,8627	x	ΔT	1,2672
TUB2-120/30D50L	2775	1453	1,2672	50	19,5132	$\phi =$	19,5132	x	ΔT	1,2672
TUB2-120/31D50L	2868	1501	1,2672	50	20,1636	$\phi =$	20,1636	x	ΔT	1,2672
TUB2-120/32D50L	2960	1549	1,2672	50	20,8141	$\phi =$	20,8141	x	ΔT	1,2672
TUB2-120/33D50L	3053	1598	1,2672	50	21,4645	$\phi =$	21,4645	x	ΔT	1,2672
TUB2-120/34D50L	3145	1646	1,2672	50	22,1149	$\phi =$	22,1149	x	ΔT	1,2672
TUB2-120/35D50L	3238	1695	1,2672	50	22,7654	$\phi =$	22,7654	x	ΔT	1,2672
TUB2-150/02D50L	230	120	1,2706	50	1,5987	$\phi =$	1,5987	x	ΔT	1,2706
TUB2-150/03D50L	346	181	1,2706	50	2,3981	$\phi =$	2,3981	x	ΔT	1,2706
TUB2-150/04D50L	461	241	1,2706	50	3,1974	$\phi =$	3,1974	x	ΔT	1,2706
TUB2-150/05D50L	576	301	1,2706	50	3,9968	$\phi =$	3,9968	x	ΔT	1,2706
TUB2-150/06D50L	691	361	1,2706	50	4,7961	$\phi =$	4,7961	x	ΔT	1,2706
TUB2-150/07D50L	806	421	1,2706	50	5,5955	$\phi =$	5,5955	x	ΔT	1,2706
TUB2-150/08D50L	922	482	1,2706	50	6,3949	$\phi =$	6,3949	x	ΔT	1,2706
TUB2-150/09D50L	1037	542	1,2706	50	7,1942	$\phi =$	7,1942	x	ΔT	1,2706
TUB2-150/10D50L	1152	602	1,2706	50	7,9936	$\phi =$	7,9936	x	ΔT	1,2706
TUB2-150/11D50L	1267	662	1,2706	50	8,7929	$\phi =$	8,7929	x	ΔT	1,2706
TUB2-150/12D50L	1382	722	1,2706	50	9,5923	$\phi =$	9,5923	x	ΔT	1,2706
TUB2-150/13D50L	1498	783	1,2706	50	10,3917	$\phi =$	10,3917	x	ΔT	1,2706
TUB2-150/14D50L	1613	843	1,2706	50	11,1910	$\phi =$	11,1910	x	ΔT	1,2706
TUB2-150/15D50L	1728	903	1,2706	50	11,9904	$\phi =$	11,9904	x	ΔT	1,2706
TUB2-150/16D50L	1843	963	1,2706	50	12,7897	$\phi =$	12,7897	x	ΔT	1,2706
TUB2-150/17D50L	1958	1023	1,2706	50	13,5891	$\phi =$	13,5891	x	ΔT	1,2706
TUB2-150/18D50L	2074	1084	1,2706	50	14,3884	$\phi =$	14,3884	x	ΔT	1,2706
TUB2-150/19D50L	2189	1144	1,2706	50	15,1878	$\phi =$	15,1878	x	ΔT	1,2706
TUB2-150/20D50L	2304	1204	1,2706	50	15,9872	$\phi =$	15,9872	x	ΔT	1,2706
TUB2-150/21D50L	2419	1264	1,2706	50	16,7865	$\phi =$	16,7865	x	ΔT	1,2706
TUB2-150/22D50L	2534	1324	1,2706	50	17,5859	$\phi =$	17,5859	x	ΔT	1,2706
TUB2-150/23D50L	2650	1385	1,2706	50	18,3852	$\phi =$	18,3852	x	ΔT	1,2706
TUB2-150/24D50L	2765	1445	1,2706	50	19,1846	$\phi =$	19,1846	x	ΔT	1,2706
TUB2-150/25D50L	2880	1505	1,2706	50	19,9839	$\phi =$	19,9839	x	ΔT	1,2706
TUB2-150/26D50L	2995	1565	1,2706	50	20,7833	$\phi =$	20,7833	x	ΔT	1,2706
TUB2-150/27D50L	3110	1625	1,2706	50	21,5827	$\phi =$	21,5827	x	ΔT	1,2706
TUB2-150/28D50L	3226	1686	1,2706	50	22,3820	$\phi =$	22,3820	x	ΔT	1,2706
TUB2-180/02D50L	273	142	1,2747	50	1,8642	$\phi =$	1,8642	x	ΔT	1,2747
TUB2-180/03D50L	410	214	1,2747	50	2,7963	$\phi =$	2,7963	x	ΔT	1,2747

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TUB2-180/04D50L	546	285	1,2747	50	3,7283	$\phi =$	3,7283	x	ΔT	1,2747
TUB2-180/05D50L	683	356	1,2747	50	4,6604	$\phi =$	4,6604	x	ΔT	1,2747
TUB2-180/06D50L	819	427	1,2747	50	5,5925	$\phi =$	5,5925	x	ΔT	1,2747
TUB2-180/07D50L	956	498	1,2747	50	6,5246	$\phi =$	6,5246	x	ΔT	1,2747
TUB2-180/08D50L	1092	569	1,2747	50	7,4567	$\phi =$	7,4567	x	ΔT	1,2747
TUB2-180/09D50L	1229	641	1,2747	50	8,3888	$\phi =$	8,3888	x	ΔT	1,2747
TUB2-180/10D50L	1365	712	1,2747	50	9,3209	$\phi =$	9,3209	x	ΔT	1,2747
TUB2-180/11D50L	1502	783	1,2747	50	10,2529	$\phi =$	10,2529	x	ΔT	1,2747
TUB2-180/12D50L	1638	854	1,2747	50	11,1850	$\phi =$	11,1850	x	ΔT	1,2747
TUB2-180/13D50L	1775	925	1,2747	50	12,1171	$\phi =$	12,1171	x	ΔT	1,2747
TUB2-180/14D50L	1911	996	1,2747	50	13,0492	$\phi =$	13,0492	x	ΔT	1,2747
TUB2-180/15D50L	2048	1068	1,2747	50	13,9813	$\phi =$	13,9813	x	ΔT	1,2747
TUB2-180/16D50L	2184	1139	1,2747	50	14,9134	$\phi =$	14,9134	x	ΔT	1,2747
TUB2-180/17D50L	2321	1210	1,2747	50	15,8454	$\phi =$	15,8454	x	ΔT	1,2747
TUB2-180/18D50L	2457	1281	1,2747	50	16,7775	$\phi =$	16,7775	x	ΔT	1,2747
TUB2-180/19D50L	2594	1352	1,2747	50	17,7096	$\phi =$	17,7096	x	ΔT	1,2747
TUB2-180/20D50L	2730	1424	1,2747	50	18,6417	$\phi =$	18,6417	x	ΔT	1,2747
TUB2-180/21D50L	2867	1495	1,2747	50	19,5738	$\phi =$	19,5738	x	ΔT	1,2747
TUB2-180/22D50L	3003	1566	1,2747	50	20,5059	$\phi =$	20,5059	x	ΔT	1,2747
TUB2-180/23D50L	3140	1637	1,2747	50	21,4380	$\phi =$	21,4380	x	ΔT	1,2747
TUB2-200/02D50L	300	156	1,2778	50	2,0211	$\phi =$	2,0211	x	ΔT	1,2778
TUB2-200/03D50L	449	234	1,2778	50	3,0317	$\phi =$	3,0317	x	ΔT	1,2778
TUB2-200/04D50L	599	312	1,2778	50	4,0423	$\phi =$	4,0423	x	ΔT	1,2778
TUB2-200/05D50L	749	390	1,2778	50	5,0529	$\phi =$	5,0529	x	ΔT	1,2778
TUB2-200/06D50L	899	468	1,2778	50	6,0634	$\phi =$	6,0634	x	ΔT	1,2778
TUB2-200/07D50L	1049	546	1,2778	50	7,0740	$\phi =$	7,0740	x	ΔT	1,2778
TUB2-200/08D50L	1198	624	1,2778	50	8,0846	$\phi =$	8,0846	x	ΔT	1,2778
TUB2-200/09D50L	1348	702	1,2778	50	9,0952	$\phi =$	9,0952	x	ΔT	1,2778
TUB2-200/10D50L	1498	780	1,2778	50	10,1057	$\phi =$	10,1057	x	ΔT	1,2778
TUB2-200/11D50L	1648	858	1,2778	50	11,1163	$\phi =$	11,1163	x	ΔT	1,2778
TUB2-200/12D50L	1798	936	1,2778	50	12,1269	$\phi =$	12,1269	x	ΔT	1,2778
TUB2-200/13D50L	1947	1014	1,2778	50	13,1375	$\phi =$	13,1375	x	ΔT	1,2778
TUB2-200/14D50L	2097	1092	1,2778	50	14,1480	$\phi =$	14,1480	x	ΔT	1,2778
TUB2-200/15D50L	2247	1170	1,2778	50	15,1586	$\phi =$	15,1586	x	ΔT	1,2778
TUB2-200/16D50L	2397	1248	1,2778	50	16,1692	$\phi =$	16,1692	x	ΔT	1,2778
TUB2-200/17D50L	2547	1326	1,2778	50	17,1798	$\phi =$	17,1798	x	ΔT	1,2778
TUB2-200/18D50L	2696	1404	1,2778	50	18,1903	$\phi =$	18,1903	x	ΔT	1,2778
TUB2-200/19D50L	2846	1482	1,2778	50	19,2009	$\phi =$	19,2009	x	ΔT	1,2778
TUB2-200/20D50L	2996	1560	1,2778	50	20,2115	$\phi =$	20,2115	x	ΔT	1,2778
TUB2-200/21D50L	3146	1638	1,2778	50	21,2220	$\phi =$	21,2220	x	ΔT	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
Bartosz Ścierzyński

(podpis)
(signature)