

DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH
(DECLARATION OF PERFORMANCE)
Nr (No.) NDWU/1/TUBUS 3 D50L/2021

1. Niepowtarzalny kod identyfikacyjny typu wyrobu: (Unique identification code of the product-type): TUBUS 3		
2. Zamierzone zastosowanie lub zastosowania: W instalacjach grzewczych w budynkach (Intended use/es: In heating systems in buildings)		
3. Producent: (Manufacturer:) INSTAL-PROJEKT Gawłowski, Ścierzyński Spółka jawna, Nowa Wieś k/ Włocławka, ul. Jana Pawła II 12A, 87-853 Kruszyn, Polska. (INSTAL-PROJEKT Gawłowski, Ścierzyński 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):		
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)	

Wp.

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)				
TUB3-020/02D50L	44	23	1,2616	50	0,3191	$\phi =$	0,3191	x	ΔT	1,2616
TUB3-020/03D50L	67	35	1,2616	50	0,4787	$\phi =$	0,4787	x	ΔT	1,2616
TUB3-020/04D50L	89	47	1,2616	50	0,6383	$\phi =$	0,6383	x	ΔT	1,2616
TUB3-020/05D50L	111	58	1,2616	50	0,7978	$\phi =$	0,7978	x	ΔT	1,2616
TUB3-020/06D50L	133	70	1,2616	50	0,9574	$\phi =$	0,9574	x	ΔT	1,2616
TUB3-020/07D50L	155	82	1,2616	50	1,1169	$\phi =$	1,1169	x	ΔT	1,2616
TUB3-020/08D50L	178	93	1,2616	50	1,2765	$\phi =$	1,2765	x	ΔT	1,2616
TUB3-020/09D50L	200	105	1,2616	50	1,4361	$\phi =$	1,4361	x	ΔT	1,2616
TUB3-020/10D50L	222	117	1,2616	50	1,5956	$\phi =$	1,5956	x	ΔT	1,2616
TUB3-020/11D50L	244	128	1,2616	50	1,7552	$\phi =$	1,7552	x	ΔT	1,2616
TUB3-020/12D50L	266	140	1,2616	50	1,9148	$\phi =$	1,9148	x	ΔT	1,2616
TUB3-020/13D50L	289	151	1,2616	50	2,0743	$\phi =$	2,0743	x	ΔT	1,2616
TUB3-020/14D50L	311	163	1,2616	50	2,2339	$\phi =$	2,2339	x	ΔT	1,2616
TUB3-020/15D50L	333	175	1,2616	50	2,3934	$\phi =$	2,3934	x	ΔT	1,2616
TUB3-020/16D50L	355	186	1,2616	50	2,5530	$\phi =$	2,5530	x	ΔT	1,2616
TUB3-020/17D50L	377	198	1,2616	50	2,7126	$\phi =$	2,7126	x	ΔT	1,2616
TUB3-020/18D50L	400	210	1,2616	50	2,8721	$\phi =$	2,8721	x	ΔT	1,2616
TUB3-020/19D50L	422	221	1,2616	50	3,0317	$\phi =$	3,0317	x	ΔT	1,2616
TUB3-020/20D50L	444	233	1,2616	50	3,1913	$\phi =$	3,1913	x	ΔT	1,2616
TUB3-020/21D50L	466	245	1,2616	50	3,3508	$\phi =$	3,3508	x	ΔT	1,2616
TUB3-020/22D50L	488	256	1,2616	50	3,5104	$\phi =$	3,5104	x	ΔT	1,2616
TUB3-020/23D50L	511	268	1,2616	50	3,6700	$\phi =$	3,6700	x	ΔT	1,2616
TUB3-020/24D50L	533	280	1,2616	50	3,8295	$\phi =$	3,8295	x	ΔT	1,2616
TUB3-020/25D50L	555	291	1,2616	50	3,9891	$\phi =$	3,9891	x	ΔT	1,2616
TUB3-020/26D50L	577	303	1,2616	50	4,1486	$\phi =$	4,1486	x	ΔT	1,2616
TUB3-020/27D50L	599	315	1,2616	50	4,3082	$\phi =$	4,3082	x	ΔT	1,2616
TUB3-020/28D50L	622	326	1,2616	50	4,4678	$\phi =$	4,4678	x	ΔT	1,2616
TUB3-020/29D50L	644	338	1,2616	50	4,6273	$\phi =$	4,6273	x	ΔT	1,2616
TUB3-020/30D50L	666	350	1,2616	50	4,7869	$\phi =$	4,7869	x	ΔT	1,2616
TUB3-020/31D50L	688	361	1,2616	50	4,9465	$\phi =$	4,9465	x	ΔT	1,2616
TUB3-020/32D50L	710	373	1,2616	50	5,1060	$\phi =$	5,1060	x	ΔT	1,2616
TUB3-020/33D50L	733	385	1,2616	50	5,2656	$\phi =$	5,2656	x	ΔT	1,2616
TUB3-020/34D50L	755	396	1,2616	50	5,4251	$\phi =$	5,4251	x	ΔT	1,2616
TUB3-020/35D50L	777	408	1,2616	50	5,5847	$\phi =$	5,5847	x	ΔT	1,2616
TUB3-020/36D50L	799	420	1,2616	50	5,7443	$\phi =$	5,7443	x	ΔT	1,2616
TUB3-020/37D50L	821	431	1,2616	50	5,9038	$\phi =$	5,9038	x	ΔT	1,2616

TUB3-020/38D50L	844	443	1,2616	50	6,0634	$\phi =$	6,0634	x	ΔT	1,2616
TUB3-020/39D50L	866	454	1,2616	50	6,2230	$\phi =$	6,2230	x	ΔT	1,2616
TUB3-020/40D50L	888	466	1,2616	50	6,3825	$\phi =$	6,3825	x	ΔT	1,2616
TUB3-020/41D50L	910	478	1,2616	50	6,5421	$\phi =$	6,5421	x	ΔT	1,2616
TUB3-020/42D50L	932	489	1,2616	50	6,7016	$\phi =$	6,7016	x	ΔT	1,2616
TUB3-020/43D50L	955	501	1,2616	50	6,8612	$\phi =$	6,8612	x	ΔT	1,2616
TUB3-020/44D50L	977	513	1,2616	50	7,0208	$\phi =$	7,0208	x	ΔT	1,2616
TUB3-020/45D50L	999	524	1,2616	50	7,1803	$\phi =$	7,1803	x	ΔT	1,2616
TUB3-030/02D50L	65	34	1,2667	50	0,4580	$\phi =$	0,4580	x	ΔT	1,2667
TUB3-030/03D50L	98	51	1,2667	50	0,6869	$\phi =$	0,6869	x	ΔT	1,2667
TUB3-030/04D50L	130	68	1,2667	50	0,9159	$\phi =$	0,9159	x	ΔT	1,2667
TUB3-030/05D50L	163	85	1,2667	50	1,1449	$\phi =$	1,1449	x	ΔT	1,2667
TUB3-030/06D50L	195	102	1,2667	50	1,3739	$\phi =$	1,3739	x	ΔT	1,2667
TUB3-030/07D50L	228	119	1,2667	50	1,6029	$\phi =$	1,6029	x	ΔT	1,2667
TUB3-030/08D50L	260	136	1,2667	50	1,8318	$\phi =$	1,8318	x	ΔT	1,2667
TUB3-030/09D50L	293	153	1,2667	50	2,0608	$\phi =$	2,0608	x	ΔT	1,2667
TUB3-030/10D50L	325	170	1,2667	50	2,2898	$\phi =$	2,2898	x	ΔT	1,2667
TUB3-030/11D50L	358	187	1,2667	50	2,5188	$\phi =$	2,5188	x	ΔT	1,2667
TUB3-030/12D50L	390	204	1,2667	50	2,7478	$\phi =$	2,7478	x	ΔT	1,2667
TUB3-030/13D50L	423	221	1,2667	50	2,9767	$\phi =$	2,9767	x	ΔT	1,2667
TUB3-030/14D50L	455	238	1,2667	50	3,2057	$\phi =$	3,2057	x	ΔT	1,2667
TUB3-030/15D50L	488	255	1,2667	50	3,4347	$\phi =$	3,4347	x	ΔT	1,2667
TUB3-030/16D50L	520	272	1,2667	50	3,6637	$\phi =$	3,6637	x	ΔT	1,2667
TUB3-030/17D50L	553	289	1,2667	50	3,8927	$\phi =$	3,8927	x	ΔT	1,2667
TUB3-030/18D50L	585	306	1,2667	50	4,1216	$\phi =$	4,1216	x	ΔT	1,2667
TUB3-030/19D50L	618	323	1,2667	50	4,3506	$\phi =$	4,3506	x	ΔT	1,2667
TUB3-030/20D50L	650	340	1,2667	50	4,5796	$\phi =$	4,5796	x	ΔT	1,2667
TUB3-030/21D50L	683	357	1,2667	50	4,8086	$\phi =$	4,8086	x	ΔT	1,2667
TUB3-030/22D50L	715	374	1,2667	50	5,0376	$\phi =$	5,0376	x	ΔT	1,2667
TUB3-030/23D50L	748	391	1,2667	50	5,2665	$\phi =$	5,2665	x	ΔT	1,2667
TUB3-030/24D50L	780	408	1,2667	50	5,4955	$\phi =$	5,4955	x	ΔT	1,2667
TUB3-030/25D50L	813	425	1,2667	50	5,7245	$\phi =$	5,7245	x	ΔT	1,2667
TUB3-030/26D50L	845	442	1,2667	50	5,9535	$\phi =$	5,9535	x	ΔT	1,2667
TUB3-030/27D50L	878	459	1,2667	50	6,1825	$\phi =$	6,1825	x	ΔT	1,2667
TUB3-030/28D50L	910	476	1,2667	50	6,4114	$\phi =$	6,4114	x	ΔT	1,2667
TUB3-030/29D50L	943	493	1,2667	50	6,6404	$\phi =$	6,6404	x	ΔT	1,2667
TUB3-030/30D50L	975	510	1,2667	50	6,8694	$\phi =$	6,8694	x	ΔT	1,2667
TUB3-030/31D50L	1008	528	1,2667	50	7,0984	$\phi =$	7,0984	x	ΔT	1,2667
TUB3-030/32D50L	1040	545	1,2667	50	7,3274	$\phi =$	7,3274	x	ΔT	1,2667
TUB3-030/33D50L	1073	562	1,2667	50	7,5563	$\phi =$	7,5563	x	ΔT	1,2667
TUB3-030/34D50L	1105	579	1,2667	50	7,7853	$\phi =$	7,7853	x	ΔT	1,2667
TUB3-030/35D50L	1138	596	1,2667	50	8,0143	$\phi =$	8,0143	x	ΔT	1,2667
TUB3-030/36D50L	1170	613	1,2667	50	8,2433	$\phi =$	8,2433	x	ΔT	1,2667
TUB3-030/37D50L	1203	630	1,2667	50	8,4723	$\phi =$	8,4723	x	ΔT	1,2667
TUB3-030/38D50L	1235	647	1,2667	50	8,7013	$\phi =$	8,7013	x	ΔT	1,2667
TUB3-030/39D50L	1268	664	1,2667	50	8,9302	$\phi =$	8,9302	x	ΔT	1,2667
TUB3-030/40D50L	1300	681	1,2667	50	9,1592	$\phi =$	9,1592	x	ΔT	1,2667

TUB3-030/41D50L	1333	698	1,2667	50	9,3882	$\phi =$	9,3882	x	ΔT	1,2667
TUB3-030/42D50L	1365	715	1,2667	50	9,6172	$\phi =$	9,6172	x	ΔT	1,2667
TUB3-030/43D50L	1398	732	1,2667	50	9,8462	$\phi =$	9,8462	x	ΔT	1,2667
TUB3-030/44D50L	1430	749	1,2667	50	10,0751	$\phi =$	10,0751	x	ΔT	1,2667
TUB3-030/45D50L	1463	766	1,2667	50	10,3041	$\phi =$	10,3041	x	ΔT	1,2667
TUB3-040/02D50L	85	45	1,2698	50	0,5930	$\phi =$	0,5930	x	ΔT	1,2698
TUB3-040/03D50L	128	67	1,2698	50	0,8896	$\phi =$	0,8896	x	ΔT	1,2698
TUB3-040/04D50L	170	89	1,2698	50	1,1861	$\phi =$	1,1861	x	ΔT	1,2698
TUB3-040/05D50L	213	111	1,2698	50	1,4826	$\phi =$	1,4826	x	ΔT	1,2698
TUB3-040/06D50L	256	134	1,2698	50	1,7791	$\phi =$	1,7791	x	ΔT	1,2698
TUB3-040/07D50L	298	156	1,2698	50	2,0757	$\phi =$	2,0757	x	ΔT	1,2698
TUB3-040/08D50L	341	178	1,2698	50	2,3722	$\phi =$	2,3722	x	ΔT	1,2698
TUB3-040/09D50L	383	200	1,2698	50	2,6687	$\phi =$	2,6687	x	ΔT	1,2698
TUB3-040/10D50L	426	223	1,2698	50	2,9652	$\phi =$	2,9652	x	ΔT	1,2698
TUB3-040/11D50L	469	245	1,2698	50	3,2617	$\phi =$	3,2617	x	ΔT	1,2698
TUB3-040/12D50L	511	267	1,2698	50	3,5583	$\phi =$	3,5583	x	ΔT	1,2698
TUB3-040/13D50L	554	290	1,2698	50	3,8548	$\phi =$	3,8548	x	ΔT	1,2698
TUB3-040/14D50L	596	312	1,2698	50	4,1513	$\phi =$	4,1513	x	ΔT	1,2698
TUB3-040/15D50L	639	334	1,2698	50	4,4478	$\phi =$	4,4478	x	ΔT	1,2698
TUB3-040/16D50L	682	356	1,2698	50	4,7444	$\phi =$	4,7444	x	ΔT	1,2698
TUB3-040/17D50L	724	379	1,2698	50	5,0409	$\phi =$	5,0409	x	ΔT	1,2698
TUB3-040/18D50L	767	401	1,2698	50	5,3374	$\phi =$	5,3374	x	ΔT	1,2698
TUB3-040/19D50L	809	423	1,2698	50	5,6339	$\phi =$	5,6339	x	ΔT	1,2698
TUB3-040/20D50L	852	445	1,2698	50	5,9304	$\phi =$	5,9304	x	ΔT	1,2698
TUB3-040/21D50L	895	468	1,2698	50	6,2270	$\phi =$	6,2270	x	ΔT	1,2698
TUB3-040/22D50L	937	490	1,2698	50	6,5235	$\phi =$	6,5235	x	ΔT	1,2698
TUB3-040/23D50L	980	512	1,2698	50	6,8200	$\phi =$	6,8200	x	ΔT	1,2698
TUB3-040/24D50L	1022	534	1,2698	50	7,1165	$\phi =$	7,1165	x	ΔT	1,2698
TUB3-040/25D50L	1065	557	1,2698	50	7,4131	$\phi =$	7,4131	x	ΔT	1,2698
TUB3-040/26D50L	1108	579	1,2698	50	7,7096	$\phi =$	7,7096	x	ΔT	1,2698
TUB3-040/27D50L	1150	601	1,2698	50	8,0061	$\phi =$	8,0061	x	ΔT	1,2698
TUB3-040/28D50L	1193	624	1,2698	50	8,3026	$\phi =$	8,3026	x	ΔT	1,2698
TUB3-040/29D50L	1235	646	1,2698	50	8,5991	$\phi =$	8,5991	x	ΔT	1,2698
TUB3-040/30D50L	1278	668	1,2698	50	8,8957	$\phi =$	8,8957	x	ΔT	1,2698
TUB3-040/31D50L	1321	690	1,2698	50	9,1922	$\phi =$	9,1922	x	ΔT	1,2698
TUB3-040/32D50L	1363	713	1,2698	50	9,4887	$\phi =$	9,4887	x	ΔT	1,2698
TUB3-040/33D50L	1406	735	1,2698	50	9,7852	$\phi =$	9,7852	x	ΔT	1,2698
TUB3-040/34D50L	1448	757	1,2698	50	10,0818	$\phi =$	10,0818	x	ΔT	1,2698
TUB3-040/35D50L	1491	779	1,2698	50	10,3783	$\phi =$	10,3783	x	ΔT	1,2698
TUB3-040/36D50L	1534	802	1,2698	50	10,6748	$\phi =$	10,6748	x	ΔT	1,2698
TUB3-040/37D50L	1576	824	1,2698	50	10,9713	$\phi =$	10,9713	x	ΔT	1,2698
TUB3-040/38D50L	1619	846	1,2698	50	11,2679	$\phi =$	11,2679	x	ΔT	1,2698
TUB3-040/39D50L	1661	869	1,2698	50	11,5644	$\phi =$	11,5644	x	ΔT	1,2698
TUB3-040/40D50L	1704	891	1,2698	50	11,8609	$\phi =$	11,8609	x	ΔT	1,2698
TUB3-040/41D50L	1747	913	1,2698	50	12,1574	$\phi =$	12,1574	x	ΔT	1,2698
TUB3-040/42D50L	1789	935	1,2698	50	12,4539	$\phi =$	12,4539	x	ΔT	1,2698
TUB3-040/43D50L	1832	958	1,2698	50	12,7505	$\phi =$	12,7505	x	ΔT	1,2698

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TUB3-040/44D50L	1874	980	1,2698	50	13,0470	$\phi =$	13,0470	x	ΔT	1,2698
TUB3-040/45D50L	1917	1002	1,2698	50	13,3435	$\phi =$	13,3435	x	ΔT	1,2698
TUB3-050/02D50L	105	55	1,2722	50	0,7268	$\phi =$	0,7268	x	ΔT	1,2722
TUB3-050/03D50L	158	83	1,2722	50	1,0902	$\phi =$	1,0902	x	ΔT	1,2722
TUB3-050/04D50L	211	110	1,2722	50	1,4536	$\phi =$	1,4536	x	ΔT	1,2722
TUB3-050/05D50L	264	138	1,2722	50	1,8170	$\phi =$	1,8170	x	ΔT	1,2722
TUB3-050/06D50L	316	165	1,2722	50	2,1804	$\phi =$	2,1804	x	ΔT	1,2722
TUB3-050/07D50L	369	193	1,2722	50	2,5438	$\phi =$	2,5438	x	ΔT	1,2722
TUB3-050/08D50L	422	220	1,2722	50	2,9072	$\phi =$	2,9072	x	ΔT	1,2722
TUB3-050/09D50L	474	248	1,2722	50	3,2706	$\phi =$	3,2706	x	ΔT	1,2722
TUB3-050/10D50L	527	275	1,2722	50	3,6340	$\phi =$	3,6340	x	ΔT	1,2722
TUB3-050/11D50L	580	303	1,2722	50	3,9974	$\phi =$	3,9974	x	ΔT	1,2722
TUB3-050/12D50L	632	330	1,2722	50	4,3608	$\phi =$	4,3608	x	ΔT	1,2722
TUB3-050/13D50L	685	358	1,2722	50	4,7242	$\phi =$	4,7242	x	ΔT	1,2722
TUB3-050/14D50L	738	385	1,2722	50	5,0876	$\phi =$	5,0876	x	ΔT	1,2722
TUB3-050/15D50L	791	413	1,2722	50	5,4510	$\phi =$	5,4510	x	ΔT	1,2722
TUB3-050/16D50L	843	440	1,2722	50	5,8143	$\phi =$	5,8143	x	ΔT	1,2722
TUB3-050/17D50L	896	468	1,2722	50	6,1777	$\phi =$	6,1777	x	ΔT	1,2722
TUB3-050/18D50L	949	495	1,2722	50	6,5411	$\phi =$	6,5411	x	ΔT	1,2722
TUB3-050/19D50L	1001	523	1,2722	50	6,9045	$\phi =$	6,9045	x	ΔT	1,2722
TUB3-050/20D50L	1054	550	1,2722	50	7,2679	$\phi =$	7,2679	x	ΔT	1,2722
TUB3-050/21D50L	1107	578	1,2722	50	7,6313	$\phi =$	7,6313	x	ΔT	1,2722
TUB3-050/22D50L	1159	605	1,2722	50	7,9947	$\phi =$	7,9947	x	ΔT	1,2722
TUB3-050/23D50L	1212	633	1,2722	50	8,3581	$\phi =$	8,3581	x	ΔT	1,2722
TUB3-050/24D50L	1265	660	1,2722	50	8,7215	$\phi =$	8,7215	x	ΔT	1,2722
TUB3-050/25D50L	1318	688	1,2722	50	9,0849	$\phi =$	9,0849	x	ΔT	1,2722
TUB3-050/26D50L	1370	715	1,2722	50	9,4483	$\phi =$	9,4483	x	ΔT	1,2722
TUB3-050/27D50L	1423	743	1,2722	50	9,8117	$\phi =$	9,8117	x	ΔT	1,2722
TUB3-050/28D50L	1476	770	1,2722	50	10,1751	$\phi =$	10,1751	x	ΔT	1,2722
TUB3-050/29D50L	1528	798	1,2722	50	10,5385	$\phi =$	10,5385	x	ΔT	1,2722
TUB3-050/30D50L	1581	825	1,2722	50	10,9019	$\phi =$	10,9019	x	ΔT	1,2722
TUB3-050/31D50L	1634	853	1,2722	50	11,2653	$\phi =$	11,2653	x	ΔT	1,2722
TUB3-050/32D50L	1686	880	1,2722	50	11,6287	$\phi =$	11,6287	x	ΔT	1,2722
TUB3-050/33D50L	1739	908	1,2722	50	11,9921	$\phi =$	11,9921	x	ΔT	1,2722
TUB3-050/34D50L	1792	936	1,2722	50	12,3555	$\phi =$	12,3555	x	ΔT	1,2722
TUB3-050/35D50L	1845	963	1,2722	50	12,7189	$\phi =$	12,7189	x	ΔT	1,2722
TUB3-050/36D50L	1897	991	1,2722	50	13,0823	$\phi =$	13,0823	x	ΔT	1,2722
TUB3-050/37D50L	1950	1018	1,2722	50	13,4457	$\phi =$	13,4457	x	ΔT	1,2722
TUB3-050/38D50L	2003	1046	1,2722	50	13,8091	$\phi =$	13,8091	x	ΔT	1,2722
TUB3-050/39D50L	2055	1073	1,2722	50	14,1725	$\phi =$	14,1725	x	ΔT	1,2722
TUB3-050/40D50L	2108	1101	1,2722	50	14,5359	$\phi =$	14,5359	x	ΔT	1,2722
TUB3-050/41D50L	2161	1128	1,2722	50	14,8993	$\phi =$	14,8993	x	ΔT	1,2722
TUB3-050/42D50L	2213	1156	1,2722	50	15,2627	$\phi =$	15,2627	x	ΔT	1,2722
TUB3-050/43D50L	2266	1183	1,2722	50	15,6261	$\phi =$	15,6261	x	ΔT	1,2722
TUB3-050/44D50L	2319	1211	1,2722	50	15,9895	$\phi =$	15,9895	x	ΔT	1,2722
TUB3-050/45D50L	2372	1238	1,2722	50	16,3529	$\phi =$	16,3529	x	ΔT	1,2722
TUB3-070/02D50L	145	76	1,2762	50	0,9857	$\phi =$	0,9857	x	ΔT	1,2762

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TUB3-070/03D50L	218	113	1,2762	50	1,4785	$\phi =$	1,4785	x	ΔT	1,2762
TUB3-070/04D50L	290	151	1,2762	50	1,9714	$\phi =$	1,9714	x	ΔT	1,2762
TUB3-070/05D50L	363	189	1,2762	50	2,4642	$\phi =$	2,4642	x	ΔT	1,2762
TUB3-070/06D50L	436	227	1,2762	50	2,9571	$\phi =$	2,9571	x	ΔT	1,2762
TUB3-070/07D50L	508	265	1,2762	50	3,4499	$\phi =$	3,4499	x	ΔT	1,2762
TUB3-070/08D50L	581	303	1,2762	50	3,9428	$\phi =$	3,9428	x	ΔT	1,2762
TUB3-070/09D50L	653	340	1,2762	50	4,4356	$\phi =$	4,4356	x	ΔT	1,2762
TUB3-070/10D50L	726	378	1,2762	50	4,9285	$\phi =$	4,9285	x	ΔT	1,2762
TUB3-070/11D50L	799	416	1,2762	50	5,4213	$\phi =$	5,4213	x	ΔT	1,2762
TUB3-070/12D50L	871	454	1,2762	50	5,9142	$\phi =$	5,9142	x	ΔT	1,2762
TUB3-070/13D50L	944	492	1,2762	50	6,4070	$\phi =$	6,4070	x	ΔT	1,2762
TUB3-070/14D50L	1016	530	1,2762	50	6,8998	$\phi =$	6,8998	x	ΔT	1,2762
TUB3-070/15D50L	1089	567	1,2762	50	7,3927	$\phi =$	7,3927	x	ΔT	1,2762
TUB3-070/16D50L	1162	605	1,2762	50	7,8855	$\phi =$	7,8855	x	ΔT	1,2762
TUB3-070/17D50L	1234	643	1,2762	50	8,3784	$\phi =$	8,3784	x	ΔT	1,2762
TUB3-070/18D50L	1307	681	1,2762	50	8,8712	$\phi =$	8,8712	x	ΔT	1,2762
TUB3-070/19D50L	1379	719	1,2762	50	9,3641	$\phi =$	9,3641	x	ΔT	1,2762
TUB3-070/20D50L	1452	757	1,2762	50	9,8569	$\phi =$	9,8569	x	ΔT	1,2762
TUB3-070/21D50L	1525	794	1,2762	50	10,3498	$\phi =$	10,3498	x	ΔT	1,2762
TUB3-070/22D50L	1597	832	1,2762	50	10,8426	$\phi =$	10,8426	x	ΔT	1,2762
TUB3-070/23D50L	1670	870	1,2762	50	11,3355	$\phi =$	11,3355	x	ΔT	1,2762
TUB3-070/24D50L	1742	908	1,2762	50	11,8283	$\phi =$	11,8283	x	ΔT	1,2762
TUB3-070/25D50L	1815	946	1,2762	50	12,3211	$\phi =$	12,3211	x	ΔT	1,2762
TUB3-070/26D50L	1888	984	1,2762	50	12,8140	$\phi =$	12,8140	x	ΔT	1,2762
TUB3-070/27D50L	1960	1021	1,2762	50	13,3068	$\phi =$	13,3068	x	ΔT	1,2762
TUB3-070/28D50L	2033	1059	1,2762	50	13,7997	$\phi =$	13,7997	x	ΔT	1,2762
TUB3-070/29D50L	2105	1097	1,2762	50	14,2925	$\phi =$	14,2925	x	ΔT	1,2762
TUB3-070/30D50L	2178	1135	1,2762	50	14,7854	$\phi =$	14,7854	x	ΔT	1,2762
TUB3-070/31D50L	2251	1173	1,2762	50	15,2782	$\phi =$	15,2782	x	ΔT	1,2762
TUB3-070/32D50L	2323	1210	1,2762	50	15,7711	$\phi =$	15,7711	x	ΔT	1,2762
TUB3-070/33D50L	2396	1248	1,2762	50	16,2639	$\phi =$	16,2639	x	ΔT	1,2762
TUB3-070/34D50L	2468	1286	1,2762	50	16,7568	$\phi =$	16,7568	x	ΔT	1,2762
TUB3-070/35D50L	2541	1324	1,2762	50	17,2496	$\phi =$	17,2496	x	ΔT	1,2762
TUB3-070/36D50L	2614	1362	1,2762	50	17,7425	$\phi =$	17,7425	x	ΔT	1,2762
TUB3-070/37D50L	2686	1400	1,2762	50	18,2353	$\phi =$	18,2353	x	ΔT	1,2762
TUB3-070/38D50L	2759	1437	1,2762	50	18,7281	$\phi =$	18,7281	x	ΔT	1,2762
TUB3-070/39D50L	2831	1475	1,2762	50	19,2210	$\phi =$	19,2210	x	ΔT	1,2762
TUB3-070/40D50L	2904	1513	1,2762	50	19,7138	$\phi =$	19,7138	x	ΔT	1,2762
TUB3-070/41D50L	2977	1551	1,2762	50	20,2067	$\phi =$	20,2067	x	ΔT	1,2762
TUB3-070/42D50L	3049	1589	1,2762	50	20,6995	$\phi =$	20,6995	x	ΔT	1,2762
TUB3-080/02D50L	165	86	1,2779	50	1,1140	$\phi =$	1,1140	x	ΔT	1,2779
TUB3-080/03D50L	248	129	1,2779	50	1,6710	$\phi =$	1,6710	x	ΔT	1,2779
TUB3-080/04D50L	330	172	1,2779	50	2,2281	$\phi =$	2,2281	x	ΔT	1,2779
TUB3-080/05D50L	413	215	1,2779	50	2,7851	$\phi =$	2,7851	x	ΔT	1,2779
TUB3-080/06D50L	496	258	1,2779	50	3,3421	$\phi =$	3,3421	x	ΔT	1,2779
TUB3-080/07D50L	578	301	1,2779	50	3,8991	$\phi =$	3,8991	x	ΔT	1,2779
TUB3-080/08D50L	661	344	1,2779	50	4,4561	$\phi =$	4,4561	x	ΔT	1,2779

TUB3-080/09D50L	743	387	1,2779	50	5,0131	$\phi =$	5,0131	x	ΔT	1,2779
TUB3-080/10D50L	826	430	1,2779	50	5,5701	$\phi =$	5,5701	x	ΔT	1,2779
TUB3-080/11D50L	909	473	1,2779	50	6,1272	$\phi =$	6,1272	x	ΔT	1,2779
TUB3-080/12D50L	991	516	1,2779	50	6,6842	$\phi =$	6,6842	x	ΔT	1,2779
TUB3-080/13D50L	1074	559	1,2779	50	7,2412	$\phi =$	7,2412	x	ΔT	1,2779
TUB3-080/14D50L	1156	602	1,2779	50	7,7982	$\phi =$	7,7982	x	ΔT	1,2779
TUB3-080/15D50L	1239	645	1,2779	50	8,3552	$\phi =$	8,3552	x	ΔT	1,2779
TUB3-080/16D50L	1322	688	1,2779	50	8,9122	$\phi =$	8,9122	x	ΔT	1,2779
TUB3-080/17D50L	1404	731	1,2779	50	9,4692	$\phi =$	9,4692	x	ΔT	1,2779
TUB3-080/18D50L	1487	774	1,2779	50	10,0263	$\phi =$	10,0263	x	ΔT	1,2779
TUB3-080/19D50L	1569	817	1,2779	50	10,5833	$\phi =$	10,5833	x	ΔT	1,2779
TUB3-080/20D50L	1652	860	1,2779	50	11,1403	$\phi =$	11,1403	x	ΔT	1,2779
TUB3-080/21D50L	1735	903	1,2779	50	11,6973	$\phi =$	11,6973	x	ΔT	1,2779
TUB3-080/22D50L	1817	946	1,2779	50	12,2543	$\phi =$	12,2543	x	ΔT	1,2779
TUB3-080/23D50L	1900	989	1,2779	50	12,8113	$\phi =$	12,8113	x	ΔT	1,2779
TUB3-080/24D50L	1982	1032	1,2779	50	13,3683	$\phi =$	13,3683	x	ΔT	1,2779
TUB3-080/25D50L	2065	1075	1,2779	50	13,9254	$\phi =$	13,9254	x	ΔT	1,2779
TUB3-080/26D50L	2148	1118	1,2779	50	14,4824	$\phi =$	14,4824	x	ΔT	1,2779
TUB3-080/27D50L	2230	1161	1,2779	50	15,0394	$\phi =$	15,0394	x	ΔT	1,2779
TUB3-080/28D50L	2313	1204	1,2779	50	15,5964	$\phi =$	15,5964	x	ΔT	1,2779
TUB3-080/29D50L	2395	1247	1,2779	50	16,1534	$\phi =$	16,1534	x	ΔT	1,2779
TUB3-080/30D50L	2478	1290	1,2779	50	16,7104	$\phi =$	16,7104	x	ΔT	1,2779
TUB3-080/31D50L	2561	1333	1,2779	50	17,2674	$\phi =$	17,2674	x	ΔT	1,2779
TUB3-080/32D50L	2643	1376	1,2779	50	17,8245	$\phi =$	17,8245	x	ΔT	1,2779
TUB3-080/33D50L	2726	1419	1,2779	50	18,3815	$\phi =$	18,3815	x	ΔT	1,2779
TUB3-080/34D50L	2808	1462	1,2779	50	18,9385	$\phi =$	18,9385	x	ΔT	1,2779
TUB3-080/35D50L	2891	1505	1,2779	50	19,4955	$\phi =$	19,4955	x	ΔT	1,2779
TUB3-080/36D50L	2974	1548	1,2779	50	20,0525	$\phi =$	20,0525	x	ΔT	1,2779
TUB3-080/37D50L	3056	1591	1,2779	50	20,6095	$\phi =$	20,6095	x	ΔT	1,2779
TUB3-090/02D50L	185	96	1,2795	50	1,2398	$\phi =$	1,2398	x	ΔT	1,2795
TUB3-090/03D50L	278	144	1,2795	50	1,8596	$\phi =$	1,8596	x	ΔT	1,2795
TUB3-090/04D50L	370	192	1,2795	50	2,4795	$\phi =$	2,4795	x	ΔT	1,2795
TUB3-090/05D50L	463	241	1,2795	50	3,0994	$\phi =$	3,0994	x	ΔT	1,2795
TUB3-090/06D50L	555	289	1,2795	50	3,7193	$\phi =$	3,7193	x	ΔT	1,2795
TUB3-090/07D50L	648	337	1,2795	50	4,3392	$\phi =$	4,3392	x	ΔT	1,2795
TUB3-090/08D50L	740	385	1,2795	50	4,9591	$\phi =$	4,9591	x	ΔT	1,2795
TUB3-090/09D50L	833	433	1,2795	50	5,5789	$\phi =$	5,5789	x	ΔT	1,2795
TUB3-090/10D50L	925	481	1,2795	50	6,1988	$\phi =$	6,1988	x	ΔT	1,2795
TUB3-090/11D50L	1018	529	1,2795	50	6,8187	$\phi =$	6,8187	x	ΔT	1,2795
TUB3-090/12D50L	1110	577	1,2795	50	7,4386	$\phi =$	7,4386	x	ΔT	1,2795
TUB3-090/13D50L	1203	626	1,2795	50	8,0585	$\phi =$	8,0585	x	ΔT	1,2795
TUB3-090/14D50L	1295	674	1,2795	50	8,6784	$\phi =$	8,6784	x	ΔT	1,2795
TUB3-090/15D50L	1388	722	1,2795	50	9,2982	$\phi =$	9,2982	x	ΔT	1,2795
TUB3-090/16D50L	1480	770	1,2795	50	9,9181	$\phi =$	9,9181	x	ΔT	1,2795
TUB3-090/17D50L	1573	818	1,2795	50	10,5380	$\phi =$	10,5380	x	ΔT	1,2795
TUB3-090/18D50L	1665	866	1,2795	50	11,1579	$\phi =$	11,1579	x	ΔT	1,2795
TUB3-090/19D50L	1758	914	1,2795	50	11,7778	$\phi =$	11,7778	x	ΔT	1,2795

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TUB3-090/20D50L	1850	962	1,2795	50	12,3977	$\phi =$	12,3977	x	ΔT	1,2795
TUB3-090/21D50L	1943	1010	1,2795	50	13,0175	$\phi =$	13,0175	x	ΔT	1,2795
TUB3-090/22D50L	2035	1059	1,2795	50	13,6374	$\phi =$	13,6374	x	ΔT	1,2795
TUB3-090/23D50L	2128	1107	1,2795	50	14,2573	$\phi =$	14,2573	x	ΔT	1,2795
TUB3-090/24D50L	2220	1155	1,2795	50	14,8772	$\phi =$	14,8772	x	ΔT	1,2795
TUB3-090/25D50L	2313	1203	1,2795	50	15,4971	$\phi =$	15,4971	x	ΔT	1,2795
TUB3-090/26D50L	2405	1251	1,2795	50	16,1170	$\phi =$	16,1170	x	ΔT	1,2795
TUB3-090/27D50L	2498	1299	1,2795	50	16,7368	$\phi =$	16,7368	x	ΔT	1,2795
TUB3-090/28D50L	2590	1347	1,2795	50	17,3567	$\phi =$	17,3567	x	ΔT	1,2795
TUB3-090/29D50L	2683	1395	1,2795	50	17,9766	$\phi =$	17,9766	x	ΔT	1,2795
TUB3-090/30D50L	2775	1443	1,2795	50	18,5965	$\phi =$	18,5965	x	ΔT	1,2795
TUB3-090/31D50L	2868	1492	1,2795	50	19,2164	$\phi =$	19,2164	x	ΔT	1,2795
TUB3-090/32D50L	2960	1540	1,2795	50	19,8363	$\phi =$	19,8363	x	ΔT	1,2795
TUB3-090/33D50L	3053	1588	1,2795	50	20,4561	$\phi =$	20,4561	x	ΔT	1,2795
TUB3-090/34D50L	3145	1636	1,2795	50	21,0760	$\phi =$	21,0760	x	ΔT	1,2795
TUB3-100/02D50L	205	107	1,2811	50	1,3652	$\phi =$	1,3652	x	ΔT	1,2811
TUB3-100/03D50L	308	160	1,2811	50	2,0478	$\phi =$	2,0478	x	ΔT	1,2811
TUB3-100/04D50L	410	213	1,2811	50	2,7304	$\phi =$	2,7304	x	ΔT	1,2811
TUB3-100/05D50L	513	266	1,2811	50	3,4131	$\phi =$	3,4131	x	ΔT	1,2811
TUB3-100/06D50L	615	320	1,2811	50	4,0957	$\phi =$	4,0957	x	ΔT	1,2811
TUB3-100/07D50L	718	373	1,2811	50	4,7783	$\phi =$	4,7783	x	ΔT	1,2811
TUB3-100/08D50L	820	426	1,2811	50	5,4609	$\phi =$	5,4609	x	ΔT	1,2811
TUB3-100/09D50L	923	479	1,2811	50	6,1435	$\phi =$	6,1435	x	ΔT	1,2811
TUB3-100/10D50L	1025	533	1,2811	50	6,8261	$\phi =$	6,8261	x	ΔT	1,2811
TUB3-100/11D50L	1128	586	1,2811	50	7,5087	$\phi =$	7,5087	x	ΔT	1,2811
TUB3-100/12D50L	1230	639	1,2811	50	8,1913	$\phi =$	8,1913	x	ΔT	1,2811
TUB3-100/13D50L	1333	693	1,2811	50	8,8739	$\phi =$	8,8739	x	ΔT	1,2811
TUB3-100/14D50L	1435	746	1,2811	50	9,5566	$\phi =$	9,5566	x	ΔT	1,2811
TUB3-100/15D50L	1538	799	1,2811	50	10,2392	$\phi =$	10,2392	x	ΔT	1,2811
TUB3-100/16D50L	1640	852	1,2811	50	10,9218	$\phi =$	10,9218	x	ΔT	1,2811
TUB3-100/17D50L	1743	906	1,2811	50	11,6044	$\phi =$	11,6044	x	ΔT	1,2811
TUB3-100/18D50L	1845	959	1,2811	50	12,2870	$\phi =$	12,2870	x	ΔT	1,2811
TUB3-100/19D50L	1948	1012	1,2811	50	12,9696	$\phi =$	12,9696	x	ΔT	1,2811
TUB3-100/20D50L	2050	1065	1,2811	50	13,6522	$\phi =$	13,6522	x	ΔT	1,2811
TUB3-100/21D50L	2153	1119	1,2811	50	14,3348	$\phi =$	14,3348	x	ΔT	1,2811
TUB3-100/22D50L	2255	1172	1,2811	50	15,0174	$\phi =$	15,0174	x	ΔT	1,2811
TUB3-100/23D50L	2358	1225	1,2811	50	15,7001	$\phi =$	15,7001	x	ΔT	1,2811
TUB3-100/24D50L	2460	1279	1,2811	50	16,3827	$\phi =$	16,3827	x	ΔT	1,2811
TUB3-100/25D50L	2563	1332	1,2811	50	17,0653	$\phi =$	17,0653	x	ΔT	1,2811
TUB3-100/26D50L	2665	1385	1,2811	50	17,7479	$\phi =$	17,7479	x	ΔT	1,2811
TUB3-100/27D50L	2768	1438	1,2811	50	18,4305	$\phi =$	18,4305	x	ΔT	1,2811
TUB3-100/28D50L	2870	1492	1,2811	50	19,1131	$\phi =$	19,1131	x	ΔT	1,2811
TUB3-100/29D50L	2973	1545	1,2811	50	19,7957	$\phi =$	19,7957	x	ΔT	1,2811
TUB3-100/30D50L	3075	1598	1,2811	50	20,4783	$\phi =$	20,4783	x	ΔT	1,2811
TUB3-100/31D50L	3178	1651	1,2811	50	21,1609	$\phi =$	21,1609	x	ΔT	1,2811
TUB3-120/02D50L	245	127	1,2828	50	1,6195	$\phi =$	1,6195	x	ΔT	1,2828
TUB3-120/03D50L	367	191	1,2828	50	2,4292	$\phi =$	2,4292	x	ΔT	1,2828

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TUB3-120/04D50L	490	254	1,2828	50	3,2389	$\phi =$	3,2389	x	ΔT	1,2828
TUB3-120/05D50L	612	318	1,2828	50	4,0487	$\phi =$	4,0487	x	ΔT	1,2828
TUB3-120/06D50L	734	381	1,2828	50	4,8584	$\phi =$	4,8584	x	ΔT	1,2828
TUB3-120/07D50L	857	445	1,2828	50	5,6681	$\phi =$	5,6681	x	ΔT	1,2828
TUB3-120/08D50L	979	508	1,2828	50	6,4779	$\phi =$	6,4779	x	ΔT	1,2828
TUB3-120/09D50L	1102	572	1,2828	50	7,2876	$\phi =$	7,2876	x	ΔT	1,2828
TUB3-120/10D50L	1224	636	1,2828	50	8,0973	$\phi =$	8,0973	x	ΔT	1,2828
TUB3-120/11D50L	1346	699	1,2828	50	8,9071	$\phi =$	8,9071	x	ΔT	1,2828
TUB3-120/12D50L	1469	763	1,2828	50	9,7168	$\phi =$	9,7168	x	ΔT	1,2828
TUB3-120/13D50L	1591	826	1,2828	50	10,5265	$\phi =$	10,5265	x	ΔT	1,2828
TUB3-120/14D50L	1714	890	1,2828	50	11,3363	$\phi =$	11,3363	x	ΔT	1,2828
TUB3-120/15D50L	1836	953	1,2828	50	12,1460	$\phi =$	12,1460	x	ΔT	1,2828
TUB3-120/16D50L	1958	1017	1,2828	50	12,9558	$\phi =$	12,9558	x	ΔT	1,2828
TUB3-120/17D50L	2081	1081	1,2828	50	13,7655	$\phi =$	13,7655	x	ΔT	1,2828
TUB3-120/18D50L	2203	1144	1,2828	50	14,5752	$\phi =$	14,5752	x	ΔT	1,2828
TUB3-120/19D50L	2326	1208	1,2828	50	15,3850	$\phi =$	15,3850	x	ΔT	1,2828
TUB3-120/20D50L	2448	1271	1,2828	50	16,1947	$\phi =$	16,1947	x	ΔT	1,2828
TUB3-120/21D50L	2570	1335	1,2828	50	17,0044	$\phi =$	17,0044	x	ΔT	1,2828
TUB3-120/22D50L	2693	1398	1,2828	50	17,8142	$\phi =$	17,8142	x	ΔT	1,2828
TUB3-120/23D50L	2815	1462	1,2828	50	18,6239	$\phi =$	18,6239	x	ΔT	1,2828
TUB3-120/24D50L	2938	1525	1,2828	50	19,4336	$\phi =$	19,4336	x	ΔT	1,2828
TUB3-120/25D50L	3060	1589	1,2828	50	20,2434	$\phi =$	20,2434	x	ΔT	1,2828
TUB3-120/26D50L	3182	1653	1,2828	50	21,0531	$\phi =$	21,0531	x	ΔT	1,2828
TUB3-150/02D50L	305	158	1,2854	50	1,9973	$\phi =$	1,9973	x	ΔT	1,2854
TUB3-150/03D50L	457	237	1,2854	50	2,9940	$\phi =$	2,9940	x	ΔT	1,2854
TUB3-150/04D50L	610	316	1,2854	50	3,9920	$\phi =$	3,9920	x	ΔT	1,2854
TUB3-150/05D50L	762	395	1,2854	50	4,9900	$\phi =$	4,9900	x	ΔT	1,2854
TUB3-150/06D50L	914	474	1,2854	50	5,9880	$\phi =$	5,9880	x	ΔT	1,2854
TUB3-150/07D50L	1067	553	1,2854	50	6,9860	$\phi =$	6,9860	x	ΔT	1,2854
TUB3-150/08D50L	1219	632	1,2854	50	7,9840	$\phi =$	7,9840	x	ΔT	1,2854
TUB3-150/09D50L	1372	711	1,2854	50	8,9820	$\phi =$	8,9820	x	ΔT	1,2854
TUB3-150/10D50L	1524	790	1,2854	50	9,9800	$\phi =$	9,9800	x	ΔT	1,2854
TUB3-150/11D50L	1676	869	1,2854	50	10,9780	$\phi =$	10,9780	x	ΔT	1,2854
TUB3-150/12D50L	1829	948	1,2854	50	11,9760	$\phi =$	11,9760	x	ΔT	1,2854
TUB3-150/13D50L	1981	1027	1,2854	50	12,9740	$\phi =$	12,9740	x	ΔT	1,2854
TUB3-150/14D50L	2134	1106	1,2854	50	13,9719	$\phi =$	13,9719	x	ΔT	1,2854
TUB3-150/15D50L	2286	1186	1,2854	50	14,9699	$\phi =$	14,9699	x	ΔT	1,2854
TUB3-150/16D50L	2438	1265	1,2854	50	15,9679	$\phi =$	15,9679	x	ΔT	1,2854
TUB3-150/17D50L	2591	1344	1,2854	50	16,9659	$\phi =$	16,9659	x	ΔT	1,2854
TUB3-150/18D50L	2743	1423	1,2854	50	17,9639	$\phi =$	17,9639	x	ΔT	1,2854
TUB3-150/19D50L	2896	1502	1,2854	50	18,9619	$\phi =$	18,9619	x	ΔT	1,2854
TUB3-150/20D50L	3048	1581	1,2854	50	19,9599	$\phi =$	19,9599	x	ΔT	1,2854
TUB3-150/21D50L	3200	1660	1,2854	50	20,9579	$\phi =$	20,9579	x	ΔT	1,2854
TUB3-150/22D50L	3353	1739	1,2854	50	21,9559	$\phi =$	21,9559	x	ΔT	1,2854
TUB3-180/02D50L	365	189	1,2876	50	2,3723	$\phi =$	2,3723	x	ΔT	1,2876
TUB3-180/03D50L	548	284	1,2876	50	3,5585	$\phi =$	3,5585	x	ΔT	1,2876
TUB3-180/04D50L	731	379	1,2876	50	4,7447	$\phi =$	4,7447	x	ΔT	1,2876

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TUB3-180/05D50L	914	473	1,2876	50	5,9308	$\phi =$	5,9308	x	ΔT	1,2876
TUB3-180/06D50L	1096	568	1,2876	50	7,1170	$\phi =$	7,1170	x	ΔT	1,2876
TUB3-180/07D50L	1279	662	1,2876	50	8,3031	$\phi =$	8,3031	x	ΔT	1,2876
TUB3-180/08D50L	1462	757	1,2876	50	9,4893	$\phi =$	9,4893	x	ΔT	1,2876
TUB3-180/09D50L	1644	852	1,2876	50	10,6755	$\phi =$	10,6755	x	ΔT	1,2876
TUB3-180/10D50L	1827	946	1,2876	50	11,8616	$\phi =$	11,8616	x	ΔT	1,2876
TUB3-180/11D50L	2010	1041	1,2876	50	13,0478	$\phi =$	13,0478	x	ΔT	1,2876
TUB3-180/12D50L	2192	1136	1,2876	50	14,2340	$\phi =$	14,2340	x	ΔT	1,2876
TUB3-180/13D50L	2375	1230	1,2876	50	15,4201	$\phi =$	15,4201	x	ΔT	1,2876
TUB3-180/14D50L	2558	1325	1,2876	50	16,6063	$\phi =$	16,6063	x	ΔT	1,2876
TUB3-180/15D50L	2741	1420	1,2876	50	17,7925	$\phi =$	17,7925	x	ΔT	1,2876
TUB3-180/16D50L	2923	1514	1,2876	50	18,9786	$\phi =$	18,9786	x	ΔT	1,2876
TUB3-180/17D50L	3106	1609	1,2876	50	20,1648	$\phi =$	20,1648	x	ΔT	1,2876
TUB3-180/18D50L	3289	1704	1,2876	50	21,3510	$\phi =$	21,3510	x	ΔT	1,2876
TUB3-180/19D50L	3471	1798	1,2876	50	22,5371	$\phi =$	22,5371	x	ΔT	1,2876
TUB3-180/20D50L	3654	1893	1,2876	50	23,7233	$\phi =$	23,7233	x	ΔT	1,2876
TUB3-180/21D50L	3837	1987	1,2876	50	24,9094	$\phi =$	24,9094	x	ΔT	1,2876
TUB3-180/22D50L	4019	2082	1,2876	50	26,0956	$\phi =$	26,0956	x	ΔT	1,2876
TUB3-180/23D50L	4202	2177	1,2876	50	27,2818	$\phi =$	27,2818	x	ΔT	1,2876
TUB3-200/02D50L	406	210	1,2889	50	2,6225	$\phi =$	2,6225	x	ΔT	1,2889
TUB3-200/03D50L	609	315	1,2889	50	3,9338	$\phi =$	3,9338	x	ΔT	1,2889
TUB3-200/04D50L	812	420	1,2889	50	5,2451	$\phi =$	5,2451	x	ΔT	1,2889
TUB3-200/05D50L	1015	525	1,2889	50	6,5564	$\phi =$	6,5564	x	ΔT	1,2889
TUB3-200/06D50L	1218	631	1,2889	50	7,8676	$\phi =$	7,8676	x	ΔT	1,2889
TUB3-200/07D50L	1421	736	1,2889	50	9,1789	$\phi =$	9,1789	x	ΔT	1,2889
TUB3-200/08D50L	1624	841	1,2889	50	10,4902	$\phi =$	10,4902	x	ΔT	1,2889
TUB3-200/09D50L	1827	946	1,2889	50	11,8015	$\phi =$	11,8015	x	ΔT	1,2889
TUB3-200/10D50L	2030	1051	1,2889	50	13,1127	$\phi =$	13,1127	x	ΔT	1,2889
TUB3-200/11D50L	2233	1156	1,2889	50	14,4240	$\phi =$	14,4240	x	ΔT	1,2889
TUB3-200/12D50L	2436	1261	1,2889	50	15,7353	$\phi =$	15,7353	x	ΔT	1,2889
TUB3-200/13D50L	2639	1366	1,2889	50	17,0466	$\phi =$	17,0466	x	ΔT	1,2889
TUB3-200/14D50L	2842	1471	1,2889	50	18,3578	$\phi =$	18,3578	x	ΔT	1,2889
TUB3-200/15D50L	3045	1576	1,2889	50	19,6691	$\phi =$	19,6691	x	ΔT	1,2889
TUB3-200/16D50L	3248	1681	1,2889	50	20,9804	$\phi =$	20,9804	x	ΔT	1,2889
TUB3-200/17D50L	3451	1787	1,2889	50	22,2917	$\phi =$	22,2917	x	ΔT	1,2889
TUB3-200/18D50L	3654	1892	1,2889	50	23,6029	$\phi =$	23,6029	x	ΔT	1,2889
TUB3-200/19D50L	3857	1997	1,2889	50	24,9142	$\phi =$	24,9142	x	ΔT	1,2889
TUB3-200/20D50L	4060	2102	1,2889	50	26,2255	$\phi =$	26,2255	x	ΔT	1,2889
TUB3-200/21D50L	4263	2207	1,2889	50	27,5368	$\phi =$	27,5368	x	ΔT	1,2889

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

Z-ca Prezesa ds. Produkcji
Bartosz Ścierzyński
Nowa Wieś 25.03.2022 r.
INSTAL-PROJEKT
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Zastępca Prezesa¹
ds. realizacji

Bartosz Ścierzyński
Bartosz Ścierzyński

(podpis)
(signature)