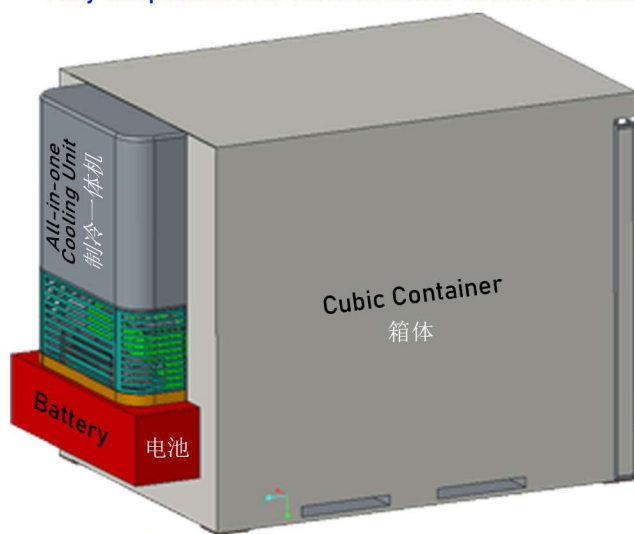
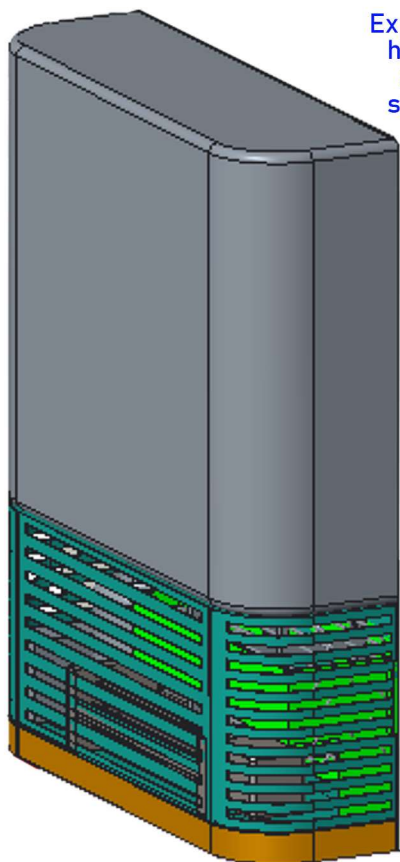


Expertly designed and optimized for cooling capacity, air flow and easy handling, Interchangeable Cooling Engine relieves you from spending a lot of time thinking about the best way to design your refrigeration system. Simply insert the side all-in-one on the wall of your cabinets /containers and in seconds the cooling process is up & running. The unit features a completely self-contained refrigeration system cleverly tucked away inside are the compressor, heat exchangers, fans, controls, piping and all other components needed to cool a vending machine or bottle cooler. The platform design of cassette allows comprehensive customisation opportunities with respect to energy optimisation, new refrigeration technologies and easy adaptation into various bottle coolers & vendors.



可移动的制冷一体机经过专业设计和制冷量和空气流量的优化，易于操作，可让您节省很多时间思考设计制冷方案。只需将一体机侧置明装在冷冻冷藏或空调箱体，在较短时间内完成制冷循环并开始运行。此侧置式一体机具有完整独立的制冷系统，巧妙地将压缩机、热交换器、风扇，温控，管路和所有其他制冷原件集成一体。广泛用于自动电气柜或机架柜。平台化设计提供各种的定制可能性。同时优化能源利用，新制冷技术或控制技术快速引入和升级换代。轻松满足不同需求。

Product advantages:

- * The Cooling Engine is made for easy handling;
- Hot-swappable refrigeration unit makes installation, servicing and interchanging simple
- Upgrading options for new refrigerants, voltage and frequency, cooling capacity and higher efficiency are built-in and need no cabinet modifications

产品优势

* 一体机易于操作

- 可移动设计使安装、维护和更换变得简单
- 新技术升级简单，无需变更箱体

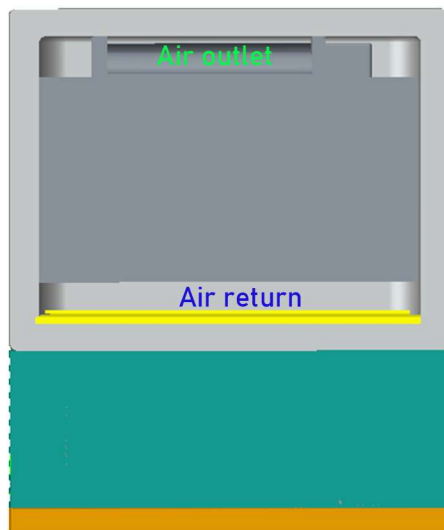
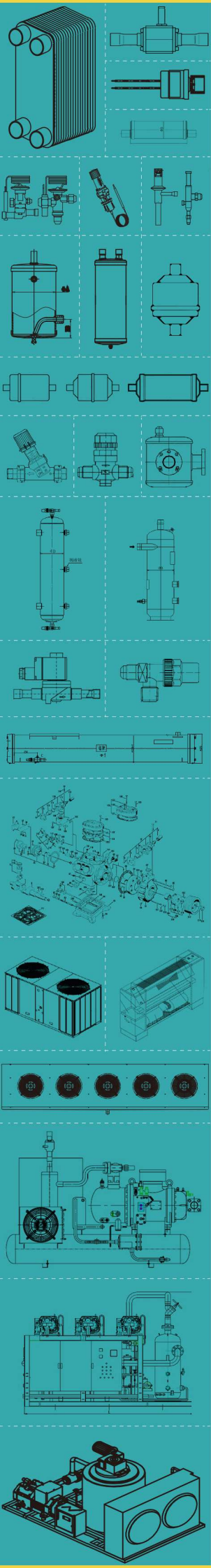
OEM benefits

Helps you reduce development cost by using the Interchangeable Cooling Engine you can concentrate on developing cabinets based on a turn key cooling system. Any kind of upgrading is made in the unit alone. It is easily interchangeable to meet a wide variety of equipment sizes.

制造商的选择

通过使用一体机帮助您降低开发成本，您可以专注于开发基于一体机的箱体。任何类型的升级都是只是在一体机内完成，且可互换。满足不同版本和冷量要求。





Reduces 'time to market'

The unit can be used in multiple cabinets. This helps get the product to the market faster, as you can concentrate on the development process of the cabinets alone.

缩短“上市时间”
标准化一体机可用于不同类型箱体。
可以帮助您更快地将产品投放市场
且让您专注于产品外观的开发工作。

Opens new market opportunities

The unit allows you to change your system to meet local market ratings. The cassette can be used at 50 or 60 Hz – and different refrigerants.

增加拓展新的市场机会
一体机可让您轻松变更系统，以满足当地市场的要求。
如50或60Hz和电压切换，不同的制冷剂选择。

Increased flexibility in manufacture

'Pick and mix' your own solution from several system design combinations:

Multiple capacity levels, standard or high efficiency versions, variety of refrigerants. Colour differentiation on request. You can choose from small and medium sizes or we can help you customise a cassette to suit your particular requirements.

增加生产灵活性
从众多设计组合中“挑选并组合”您自己的解决方案：冷量大小，标准或高效率版本，各种制冷剂。根据要求按颜色加以区分。您可以选择小尺寸和中尺寸外形，或者我们可以帮助您定制适合您特定需求的一体机。

Secures world-wide usability

It can be delivered anywhere in the world in voltages, frequencies & connections suitable for the local market.

全球通用性
以适合当地市场的电压、频率和连接方式，提供本地化可能性

Reduces warranty expense

The system can be changed at any time and in a few minutes. The housing protects the self-contained refrigeration system.

降低维保成本
该系统可以随时随地变更。外壳保护独立的制冷系统

Improves product cooling capability

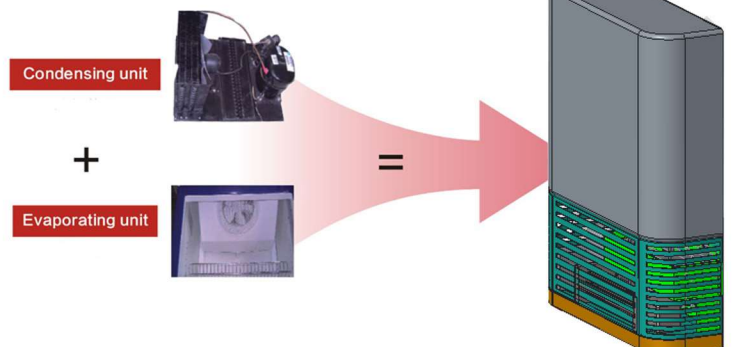
The unit is developed and produced by BOWA specialists in cooling – ensuring the right cooling capacity for your cabinet design.

准确匹配产品制冷量
专业人士开发和生产-确保适当的制冷能力匹配您的箱体设计

Inexpensive to upgrade for the end-user

Service and repairs can be handled by simply swapping the systems with another unit – by workers without specific refrigeration skills or licence. Direct expenses are few and the downtime of the system short

降低终端用户的升级成本
只需更换一体机后，即可完成售后服务和维修
无需特定制冷技能或许可证的技术人员操作。
直接费用很少，停机时间短。



For years BOWA have supplied refrigeration solutions to refrigeration manufacturers. The main principle of BOWA is to be customer driven to satisfy short and long term customer needs and expectations. This is reflected in developing the best solutions together with customers, converting their application requirements into optimum solutions that work, and keep on working. The cassette Interchangeable Cooling Engine is just the very latest example of the way we want to work hand-in-hand with customers to develop and produce even more innovative products.

多年来，保骅一直为制冷制造商提供制冷解决方案。以客户为导向，满足短期和长期的客户需求，期望。这体现在与客户一起开发优化解决方案的过程中，将他们的应用需求整合到可以正常工作的合适解决方案中，并继续保持工作状态。一体机可互换的制冷系统，只是我们最新示例。愿与客户携手合作，开发和生产更多创新产品。

SAIO - P13 - A - S

Side all-in-one Unit
SAIO = 侧置式一体机

S = R404a
H = R22
Z = R410A
L = R290a
M = R134a

A = H/MBP 中高背压
B = M/LBP 中低背压

Single Phase Compressor displacement cc/rev
单相压缩机排气量cc/rev

Test conditions

Test Conditions	EN 12900 CECOMAF (220 V / 50 Hz)
Compressors	TL / NL / NF / FR / SC
Application	R404A / R507
Condensing temperature	45°C
Ambient temperature	32°C
Suction gas temperature	32°C
Liquid temperature	no sub cooling
EN 12900 MBP (220 V / 50 Hz)	EN 12900 LBP (220 V / 50 Hz)
GS	GS
R404A / R507	R404A / R507
45°C	40°C
32°C	32°C
20°C	20°C
no sub cooling	no sub cooling

Refrigerant Application Frequency	Compressor	Code numbers	Capacity (W) at test conditions																Power consumption (W)				Dis- place- ment
			Evaporating temperature (°C)																				
			-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10	15	-35	-25	-10	5	
R404A/ R507	LBP	TL4CL	102U2071	52	65	84	110	142	155	182	230	286	328	352					105	140	198		3.86
		TL4.5CLX	102U2111		80	106	139	181	197	232	294	366							138	181	252		4.63
		FR6CL	103U2670	77	108	145	189	243	263	307	383	473	541	578					180	242	353		6.23
		FR7.5CL	103U2790	86	114	154	202	262	285	333	418	515	587	630					197	267	395		6.93
		FR8.5CL	103U2890	99	126	168	222	290	317	372	468	577							231	315	472		7.95
		NL7CLX	105F3710	102	146	199	263	340	369	430	536	657	746	796					214	274	381		7.27
		NL8.4CLX	105F3800	111	158	216	287	370	402	583	715	812	866						238	305	428		8.35
		SC10L	104L2523			168	258	365	405	489	634	800	923	991					243	350	530		10.29
		SC10CLX	104L2533			166	255	360	400	483	625	789	910	977	1190	1430			258	352	508		10.29
		SC12CL	104L2623	58	140	237	353	490	541	650	835	1048	1205	1292					316	445	654		12.87
		SC12CLX.2	104L2697	130	205	294	399	522	569	666	834	1026							365	475	659		12.87
		SC15CLX.2	104L2896	159	250	358	486	637	694	813	1017	1251	1424						433	565	783		15.28
	SC18CLX.2	104L2197	194	306	439	595	780	849	995	1245	1532							517	680	949		17.68	
	SCE18CLX.2	104L2196	194	306	439	595	780	849	995	1245	1532							459	621	888		17.68	
	SC21CL	104L2322	226	325	455	617	813	887	1042	1306	1606							534	702	989		20.95	
	GS26CLX	107B0500	325	497	703	949	1240	1348	1580	1974	2427							669	888	1285		26.30	
	GS34CLX	107N0501		729	1003	1330	1715	1857	2165	2687	3289							924	1196	1721		33.80	
	SC12/12CL	104L4088	115	279	475	706	980	1083	1299	1670	2096	2411	2583					633	891	1308		2x12.87	
	SC15/15CL	104L4089		302	599	905	1230	1347	1584	1976	2417	2739	2916					801	1120	1580		2x15.28	
	SC18/18CL	104L4090	333	541	789	1083	1430	1562	1836	2307	2849	3249	3469					910	1230	1788		2x17.68	
	SC21/21CL	104L4094	452	650	910	1235	1626	1774	2084	2613	3213							1068	1404	1978		2x20.95	
	60 Hz	SC10CLX	104L2533			224	335	455	499	588	738	906							304	430	623		10.29
		SC12CLX.2	104L2699	141	233	343	473	626	683	804	1011	1248							401	515	705		12.87
		SC12CLX.2	104L2697	141	233	343	473	626	683	804	1011	1248							398	541	777		12.87
		SC15CLX.2	104L2897	194	305	437	593	776	846	991	1239	1525							469	611	848		15.28
		SC18CLX.2	104L2195	113	338	542	737	938	1010	1157	1410	1708							563	752	990		17.68
		SC10/10CLX	104L4033			448	670	910	998	1176	1476	1812							608	860	1246		2x10.29
		SC12/12CLX	104L4034			292	564	858	1180	1298	1540	1944	2400						752	1080	1568		2x12.87
		SC15/15CLX	104L4097			358	702	1060	1440	1576	1856	2316	2834						828	1220	1728		2x15.28
NF7MLX		105F3720								511	635	726	777	940	1125	1215	1336			408	488	7.27	
SC10MLX		104L2506							465	546	687	855	981	1051	1278	1537	1663			518	633	10.29	
SC12MLX		104L2606							572	669	838	1038	1188	1272	1542	1852	2001			620	762	12.87	
SC15MLX		104L2869							710	829	1038	1285	1471	1574	1909	2293	2478			780	979	15.28	
SC18MLX		104L2139							831	968	1210	1497	1712	1832	2220	2665	2880			860	1080	17.68	
SC18MLX.3		104L2146							876	1018	1266	1557	1779	1898	2292	2743	2964			878	1096	17.68	
GS21MLX		107B0502							1096	1394	1748	2018	2164	2650	3211	3483			965	1252	21.20		
GS26MLX		107B0503							1426	1810	2254	2586	2764	3351	4022	4345			1210	1532	26.30		
GS34MLX		107B0504							1929	2408	2953	3358	3575	4283	5088	5476			1725	2235	33.80		
NF7MLX	105F3720						413	489	618	768	879	940	1137	1362	1470			473	629	7.27			
50 Hz	SC10MLX	104L2506						547	646	816	1015	1164	1246	1510	1812	1958			612	817	10.29		
	SC12MLX	104L2606						659	773	970	1199	1370	1465	1770	2118	2286			729	975	12.87		
	SC15MLX.2	104L2803						784	915	1145	1418	1623	1737	2107	2531	2735			860	1080	15.28		
	SC18MLX	104L2138						986	1140	1412	1732	1972	2106	2538	3034	3273			1051	1317	17.68		
	TL4DL	102U2038							196	229	281	324	349	432	527	572	631			203	256	3.86	
	FR6DL	103U2680							317	385	471	538	576	698	840	907	999	1177			354	456	6.23
	SC10DL	104L2525							471	611	775	899	968	1192	1450	1576	1747	2085			479	590	10.29
	SC12DL	104L2625							609	806	1028	1190	1279	1565	1890	2046	2258	2674			624	750	12.87
	SC15DL	104L2856							759	964	1207	1391	1493	1825	2210	2397	2652	3156			722	865	15.28
	SC10/10DL	104L4091							943	1222	1550	1798	1935	2383	2900	3152	3494	4169			957	1180	2x10.29
SC12/12DL	104L4092							1217	1612	2055	2380	2559	3130	3780	4092	4516	5348			1248	1500	2x12.87	
SC15/15DL	104L4093							1518	1928	2414	2781	2985	3651	4420	4795	5304	6311			1445	1730	2x15.28	

R290冷量表 R290 cooling capacity

R290 • 220-240 V • 50 Hz															
Compressor	Code number	Application	ASHRAE Capacity [W] T _c =54.4°C, T _{liq} =32.2°C, T _{suc} =32.2°C Evaporating temperature [°C]						ASHRAE						Displacement [cm ³]
									LBP rating point -23.3°C / 54.4°C		MBP rating point -6.7°C / 54.4°C		HBP rating point 7.2°C / 54.4°C		
			-35	-15	-5	0	10	15	Cooling capacity [W]	COP [W/W]	Cooling capacity [W]	COP [W/W]	Cooling capacity [W]	COP [W/W]	
TL3CN	102H4380	L/MBP	49	161	249	303			105	0.91	208	1.38			3.13
TL4CN	102H4490	L/MBP	76	212	316	379			146	1.07	265	1.46			3.86
TL5CN	102H4590	L/MBP	109	296	436	521			205	1.18	367	1.53			5.08
DLE4CN	102H4465	L/MBP	104	279	404	473			193	1.58	341	2.15	516	2.92	4.00
DLE4CNT	102H4460	L/MBP	104	279	404	473			193	1.58	341	2.15	516	2.92	4.00
DLE4.8CN	102H4565	L/MBP	129	341	500	601			242	1.65	420	2.15	696	3.04	4.80
DLE4.8CNT	102H4588	L/MBP	129	341	500	601			242	1.65	420	2.15	696	3.04	4.80
DLE4.8CNT	102H4587	L/MBP	130	334	498	601			232	1.41	417	2.01	695	2.91	4.80
DLE5.7CN	102H4653	L/MBP	169	419	609	730			301	1.59	512	2.05	840	2.82	5.70
DLE5.7CNT	102H4678	L/MBP	166	415	607	727			296	1.49	510	2.02	836	2.86	5.70
DLE6.5CN	102H4765	L/MBP	170	450	659	790			318	1.66	554	2.12	911	2.86	6.50
DLE7.5CN	102H4853	L/MBP	209	519	765	918			366	1.47	643	1.91	1055	2.56	7.48
NL7CN	105H6756	L/MBP	174	474	712	859			325	1.35	597	1.81			7.27
NL9CN	105H6856	L/MBP	205	548	815	979			380	1.39	684	1.80			8.35
NLE8.0CNT	105H6073	L/MBP	183	554	827	993			378	1.55	694	2.16	1140	3.13	7.96
NLE8.8CN	105H6880	L/MBP	238	617	902	1078	1512		435	1.65	759	2.08	1232	2.83	8.76
NLE10CN	105H6175	L/MBP	270	709	1048	1252	1739		491	1.54	881	1.99	1423	2.68	10.09
NLE10CNT	105H6179	L/MBP	274	748	1094				519	1.54	922	1.99			10.09
NLE11CNL	105H6174	LBP	300	778	1143				540	1.52	962	1.92			11.15
NLE11MN	105H6177	MBP		798	1171	1399	1947		564	1.66	985	2.11	1592	2.85	11.15
NLE12.6CNL	105H6378	LBP	353	867	1280				614	1.69	1074	2.10			12.55
NLE12.6MN	105H6377	MBP		862	1272	1525	2135		605	1.64	1069	2.08	1742	2.72	12.55
SC10CNX	104H8065	L/MBP	175	547	853	1042			358	1.27	711	1.79			10.29
SC10MNX	104H8075	MBP		575	921	1132			351	1.19	766	1.70	1329	2.57	10.29
SC12CNX	104H8265	L/MBP	227	711	1110	1372			475	1.31	923	1.79			12.87
SC12CNX.2	104H8266	LBP	230	742					491	1.20					12.87
SC12MNX	104H8275	MBP		757	1195	1461			474	1.13	995	1.77	1707	2.61	12.87
SC15CNX	104H8565	L/MBP	251	918	1415	1717			597	1.35	1183	1.83			15.28
SC15CNX.2	104H8566	LBP	345	928					624	1.32					15.28
SC15MNX	104H8575	MBP		967	1409	1679			680	1.51	1187	1.75	1907	2.40	15.28
SC18CNX	104H8865	L/MBP	315	1106	1684	2032			727	1.36	1410	1.74			17.69
SC18CNX.2	104H8866	LBP	342	1194					797	1.31					17.69
SC18MNX	104H8875	MBP		1109	1622	1943			777	1.31	1364	1.71	2237	2.33	17.69
SC21CNX.2	104H8166	LBP	462	1399					962	1.45					20.95
SCE21CNLX	104H8163	LBP	548	1387	2074				953	1.61	1741	2.04			20.95
SCE21MNX	104H8160	MBP		1443	2091	2492			1002	1.64	1762	2.11	2852	2.91	20.95

*** R290 is hydrocarbons. These refrigerants are flammable and are only allowed for use in appliances which fulfil the requirements laid down in the latest revision of EN/IEC 60335-2-24.

Do not use open fire near the refrigerant R290. The refrigeration systems must be opened with a tube cutter. In order to carry out service and repair on R290 system, the service personnel must be properly trained to be able to handle flammable refrigerants. This includes knowledge on tools, transportation of the compressor and refrigerant, and the relevant regulations and safety precautions when carrying out service and repair.