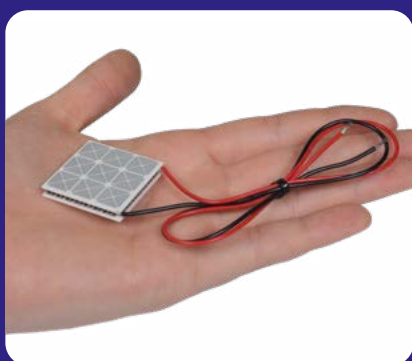


Product Overview



Thermoelectric Modules



Thermoelectric Assemblies



Dehumidifier



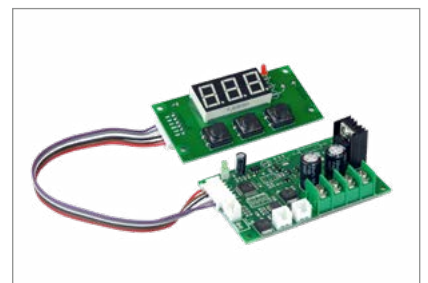
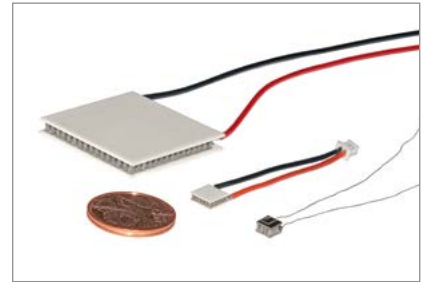
Controller



Thermoelectric is our passion!

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<ul style="list-style-type: none">• Standard Module• Miniature Module• Multistage Module• High Performance Module• Center Hole and Annual Module• High Temperature Module• Power Generator Module	
Thermoelectric Assemblies (TEA)	11 – 13
<ul style="list-style-type: none">• Air to Air System• Plate to Air System• Plate to Liquid System• Liquid to Air System• Liquid to Liquid System• Direct to Air System	
Mini Intelligent Dehumidifier	14
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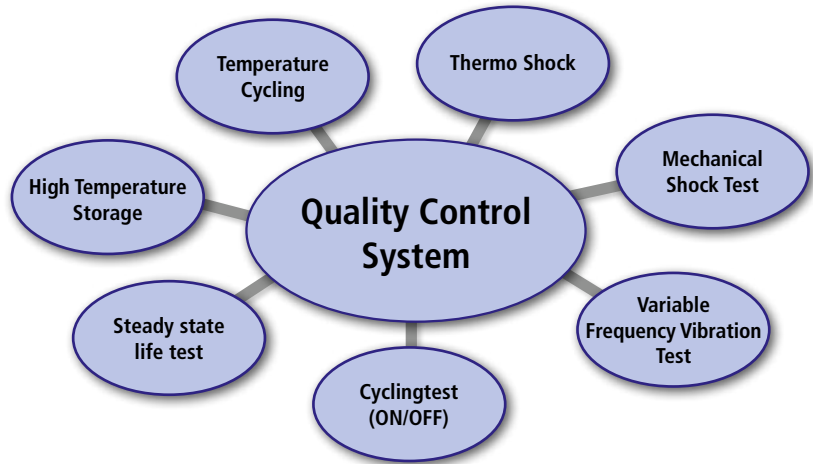
Quality Control

State-Of-The-Art Equipment and Process to Ensure Cutting-Edge-Quality

P&N is committed to quality and has world-class processes to ensure products meet global standards.

We have set up a laboratory with advanced equipment that is regularly calibrated to ensure precision.

Our thermoelectric products are inspected and tested according to **MIL-STD-883** and Telcordia **GR-468-CORE** standard.



Quality Certification

- ISO9001:2015
- All products are compliance with ROHS and REACH



Cooling Capacity Test



Power On/Off Test



Thermo Shock Test

Application Areas

Technology Advantage:

- Small size
- High solid-state reliability
- Precise temperature control
- Environment friendly
- Spot cooling
- Cooling & heating with one device
- Cooling below ambient temperature
- Resistant against harsh ambient conditions
- Silent Operation
- Minimal maintenance

Medical and Biological Instrument

PCR, Centrifuges, Therapeutic Appliances and Medical Lasers, Analyzer, etc.



Optoelectronic

Laser Diode and Diode Pump, Solid State Laser, IR detector, CCD Camera, etc.



Power Generation

Generating Electricity from Waste Heat used in Mosquito Trap



Consumer Electronics

Electric Coolers, Mini-Fridge, Wine and Beer Coolers, Mosquito Magnets, Water Dispenser, etc.



Automotive

Battery Cooling, Seat Heating, Specialty Air Conditioning Units



Telecom Equipment

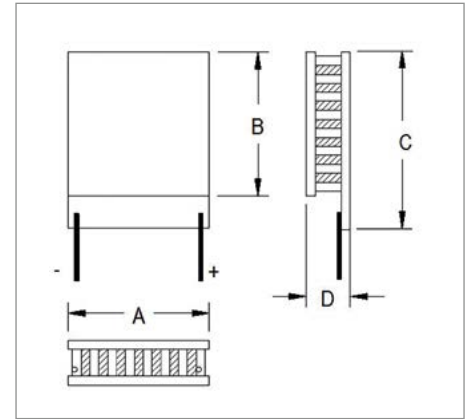
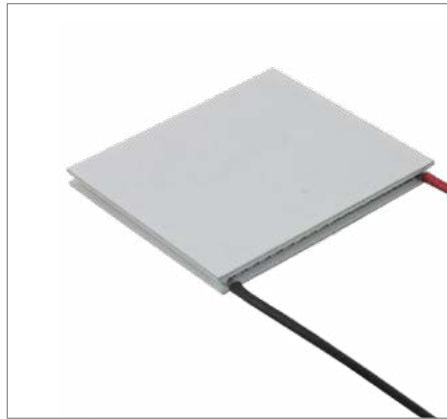
BTS Battery Cabinet Temperature Control, Compressor free Cooling of Cellular BTS, Electrical Cabinet, etc.

Standard Module

- Suitable for higher currents and larger cooling requirements
- Operating temperature up to 90 °C
- Standard sizes from 6 x 6 mm up to 62 x 62 mm

Typical applications:

- Experimental, scientific and biomedical instruments
- Laboratory equipment
- Industrial and electrical equipment
- Consumer electronics



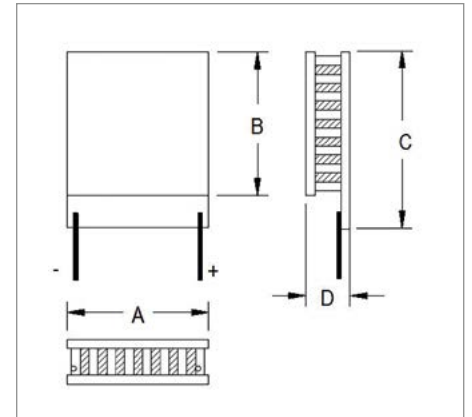
No.	Part No.	Model No.	Th=27°C				N	Dimensions (mm)		
			I max. (A)	Q max. (W)	V max. (V)	ΔT max. (°C)		A/C	B	D
1	47391	TES1-031021	2.1	4.4	3.8	68	31	12	12	3.6
2	47392	TES1-071021	2.1	10.1	8.6	68	71	18	18	3.6
3	47393	TES1-127021	2.1	18.1	15.4	68	127	25	25	3.6
4	47394	TES1-031025	2.5	5.3	3.8	68	31	15	15	4.0
5	47395	TES1-063025	2.5	10.6	7.6	68	63	15	30	4.0
6	47396	TES1-071025	2.5	12.0	8.6	68	71	23	23	4.0
7	47397	TES1-127025	2.5	21.4	15.4	68	127	30	30	4.0
8	47398	TES1-031030	3.0	6.3	3.8	68	31	15	15	3.6
9	47399	TES1-063030	3.0	12.7	7.6	68	63	15	30	3.6
10	47400	TES1-071030	3.0	15.6	8.6	68	71	23	23	3.6
11	47401	TES1-127030	3.0	25.7	15.4	68	127	30	30	3.6
12	47402	TES1-031040	3.9	8.2	3.8	68	31	15	15	3.2
13	47403	TES1-063040	3.9	16.6	7.6	68	63	15	30	3.2
14	47404	TES1-071040	3.9	18.7	8.6	68	71	23	23	3.2
15	47405	TES1-127040	3.9	33.4	15.4	68	127	30	30	3.2
16	47406	TEC1-031040	3.9	8.2	3.8	69	31	20	20	3.9
17	47407	TEC1-035040	3.9	9.2	4.2	69	35	15	30	3.9
18	47408	TEC1-071040	3.9	18.7	8.6	69	71	30	30	3.4
19	47409	TEC1-127040	3.9	33.4	15.4	69	127	40	40	3.9
20	47410	TEC1-031060	6.0	12.5	3.8	69	31	20	20	3.6
21	47411	TEC1-035060	6.0	14.2	4.2	69	35	15	30	3.6
22	47412	TEC1-071060	6.0	28.7	8.6	69	71	30	30	3.6
23	47413	TEC1-127060	6.0	51.4	15.4	69	127	40	40	3.6
24	47414	TEC1-031080	8.5	16.8	3.8	69	31	20	20	3.3
25	47415	TEC1-035080	8.5	19.0	4.2	69	35	15	30	3.3
26	47416	TEC1-071080	8.5	38.5	8.6	69	71	30	30	3.3
27	47417	TEC1-127080	8.4	73.0	15.4	73	127	30	34	2.8
28	47418	TEC1-127090	9.0	77.1	15.4	71	127	62	62	5.6
29	47419	TEC1-127140	14.8	127.0	14.4	71	127	40	40	3.2

Miniature Module

- Used for heating / cooling of a specific area / spot
- Operating temperature up to 90 °C
- Standard sizes from 4,9 x 4,9 mm up to 13,2 x 13,2 mm

Typical applications:

- Laser diode cooling
- IR-systems
- Electro-optics
- Electronic equipment



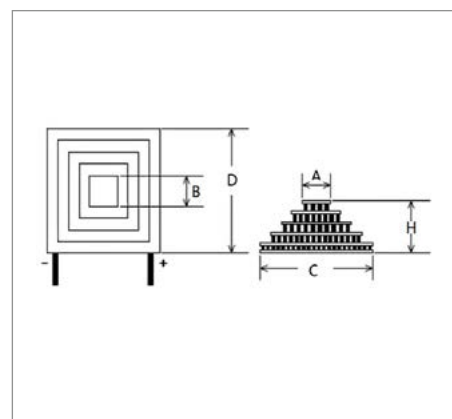
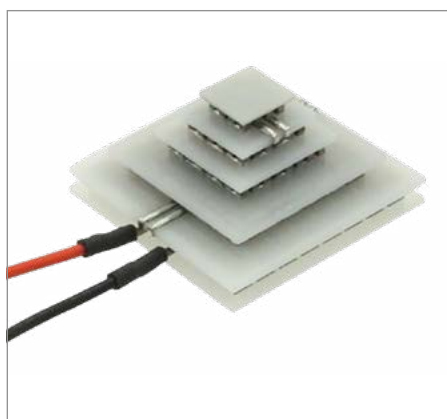
No.	Part No.	Model No.	Th=27°C				N	Dimensions (mm)			
			I max. (A)	Q max. (W)	V max. (V)	ΔT max. (°C)		A	B	C	D
1	47420	TES1-018008	0.8	0.97	2.1	67	18	4.9	4.9	6.5	2.4
2	47421	TES1-032008	0.8	1.72	3.8	67	32	6.5	6.5	8.1	2.4
3	47422	TES1-066008	0.8	3.56	7.9	67	66	9.8	8.9	11.4	2.4
4	47423	TES1-007012	1.2	0.57	0.8	67	7	4.0	4.0	4.0	2.7
5	47424	TES1-017012	1.2	1.38	2.0	67	17	6.6	6.6	6.6	2.7
6	47425	TES1-018012	1.2	1.46	2.1	67	18	6.0	6.2	7.2	2.7
7	47426	TES1-024012	1.2	1.97	2.7	67	24	6.6	8.8	10.8	2.5
8	47427	TES1-030012	1.2	2.43	3.6	67	30	6.2	10.3	12.3	2.3
9	47428	TES1-031012	1.2	2.51	3.7	66	31	8.8	8.8	8.8	2.7
10	47429	TES1-031012	1.2	2.51	3.7	67	31	8.8	8.8	11.0	2.7
11	47430	TES1-065012	1.2	5.34	7.8	67	65	13.2	12.1	13.2	2.7
12	47431	TES1-068012	1.2	5.59	8.2	67	68	13.2	13.2	13.2	2.7
13	47432	TES1-007015	1.5	0.71	0.8	67	7	4.0	4.0	4.0	2.4
14	47433	TES1-017015	1.5	1.72	2.0	67	17	6.6	6.6	6.6	2.4
15	47434	TES1-018015	1.5	1.82	2.1	67	18	6.0	6.2	7.2	2.4
16	47435	TES1-024015	1.5	2.42	2.7	67	24	6.6	8.8	10.8	2.2
17	47436	TES1-030015	1.5	3.03	3.6	67	30	6.2	10.3	12.3	2.1
18	47437	TES1-031015	1.5	3.13	3.7	67	31	8.1	8.1	8.1	2.4
19	47438	TES1-031015	1.5	3.13	3.7	67	31	8.8	8.8	8.8	2.4
20	47439	TES1-031015	1.5	3.13	3.7	67	31	8.8	8.8	11.0	2.4
21	47440	TES1-065015	1.5	6.57	7.8	67	65	13.2	12.1	13.2	2.4
22	47441	TES1-068015	1.5	6.87	8.2	67	68	13.2	13.2	13.2	2.4
23	47442	TES1-007020	2.0	0.95	0.8	67	7	4.0	4.0	4.0	2.2
24	47443	TES1-017020	2.0	2.30	2.0	67	17	6.6	6.6	6.6	2.2
25	47444	TES1-018020	2.0	2.43	2.1	67	18	6.0	6.2	7.2	2.2
26	47445	TES1-024020	2.0	3.32	2.7	67	24	6.6	8.8	10.8	2.0
27	47446	TES1-030020	2.0	4.04	3.6	67	30	6.2	10.3	12.3	1.8
28	47447	TES1-031020	2.0	4.18	3.7	67	31	8.1	8.1	8.1	2.2
29	47448	TES1-031020	2.0	4.18	3.7	67	31	8.8	8.8	8.8	2.2
30	47449	TES1-031020	2.0	4.18	3.7	67	31	8.8	8.8	11.0	2.2
31	47450	TES1-065020	2.0	8.76	7.8	67	65	13.2	12.1	13.2	2.2
32	47451	TES1-068020	2.0	9.16	8.2	67	68	13.2	13.2	13.2	2.2

Multistage Module

- Suitable for applications with small or medium cooling capacity but higher ΔT
- TEMs with 2 to 6 stages
- Sizes from 3,9 x 3,9 mm up to 40 x 40 mm

Typical applications:

- IR-detectors
- CCD arrays
- Electro-optics



No.	Part No.	Model No.	Th=27°C				Dimensions (mm)				
			I max. (A)	Q max. (W)	V max. (V)	ΔT max. (°C)	A	B	C	D	H
1	47452	TES2-010014	1.45	0.42	0.84	86	3.2	3.2	3.9	3.9	3.8
2	47453	TES2-024014	1.4	1.03	1.96	83	4.1	4.1	6.1	6.1	4.2
3	47454	TES2-083006	0.65	1.19	7.96	92	4.9	4.9	9.8	9.8	4.2
4	47455	TES2-009020	2.0	0.41	0.8	91	3.5	3.5	8.0	8.0	7.4
5	47456	TES2-048021	2.1	3.11	3.8	81	11.5	11.5	15.0	15.0	6.6
6	47457	TEC2-048040	4.0	6.04	3.8	81	15.0	15.0	20.0	20.0	7.2
7	47458	TEC2-102043	4.3	12.65	8.6	85	20.0	20.0	30.0	30.0	7.2
8	47459	TES2-190028	2.8	16.05	15.5	83	30.0	30.0	30.0	30.0	6.5
9	47460	TEC2-190060	6.0	34.51	15.5	83	40.0	40.0	40.0	40.0	7.5
10	47461	TES3-026013	1.3	0.3	1.94	110	2.5	2.5	6.6	6.6	5.2
11	47462	TES3-046013	1.3	0.6	3.4	109	4.1	4.4	8.8	8.8	5.8
12	47463	TES3-229018	1.8	6.48	15.4	96	15.0	15.0	30.0	30.0	9.5
13	47464	TEC3-229035	3.5	12.58	15.4	96	20.0	20.0	40.0	40.0	10.4
14	47465	TES4-246013	1.3	2.87	14.6	107	11.5	11.5	30.0	30.0	14.0
15	47466	TEC4-246030	3.1	6.84	14.6	107	15.0	15.0	40.0	40.0	13.8
16	47467	TES5-253015	1.6	1.74	14.5	118	8.0	8.0	30.0	30.0	15.4
17	47468	TEC5-253030	3.0	3.37	14.5	118	10.0	10.0	40.0	40.0	16.9
18	47469	TES6-255015	1.5	0.63	14.5	131	3.5	3.5	30.0	30.0	18.3
19	47470	TEC6-255030	3.0	1.22	14.5	131	5.0	5.0	40.0	40.0	20.1

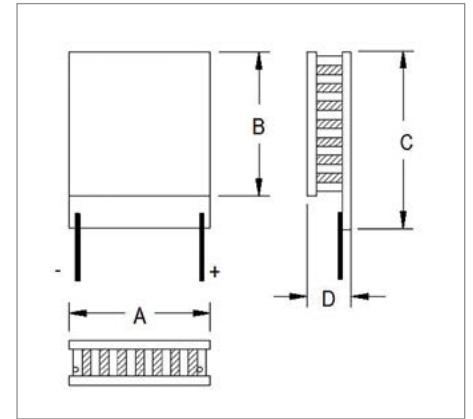
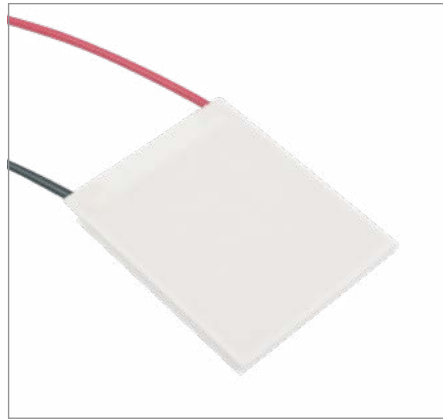
High Performance Module / Center Hole and Annual Module

High Performance Module:

- Extra heat dissipation capacity, higher cooling efficiency and longer working time because of larger hot side ceramic
- Sizes from 30 x 30 mm up to 55 x 55 mm

Typical applications:

- Experimental instruments
- Chillers
- PCR cyclers
- Analyzer



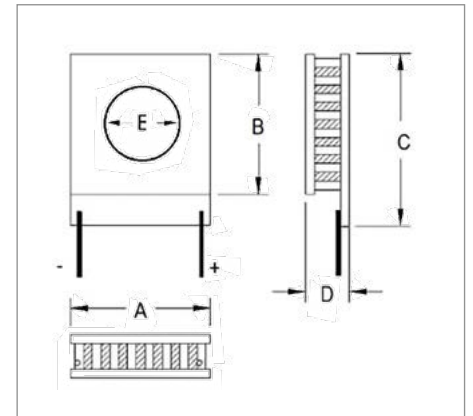
No.	Part No.	Model No.	Th=27°C				Dimensions (mm)			
			I max. (A)	Q max. (W)	V max. (V)	ΔT max. (°C)	A	B	C	D
1	47471	HP-127040	3.9	35.0	15.4	71	30	30	34	3.6
2	47472	HP-127040	3.9	37.0	15.4	72	40	40	44	4.6
3	47473	HP-127060	6.0	55.0	15.4	72	40	40	44	3.9
4	47474	HP-161050	5.5	60.8	20.0	67	40	40	44	3.6
5	47475	HP-161070	7.0	77.8	18.3	70	40	40	44	3.3
6	47476	HP-127080	8.5	77.0	15.4	72	40	40	44	3.3
7	47477	HP-199120	12.4	166.4	24.1	70	40	40	44	3.1
8	47478	HP-241060	6.0	106.0	28.2	72	55	55	55	4.3

Center Hole and Annual Module:

- Center hole TEMs allow the transmission of light, wires, probes or other hardware through the TEM
- Standard Sizes 30 x 30 mm and 40 x 40mm
- Available in round and angular design

Typical applications:

- Industrial and electrical equipment
- Laboratory and optical-electronics

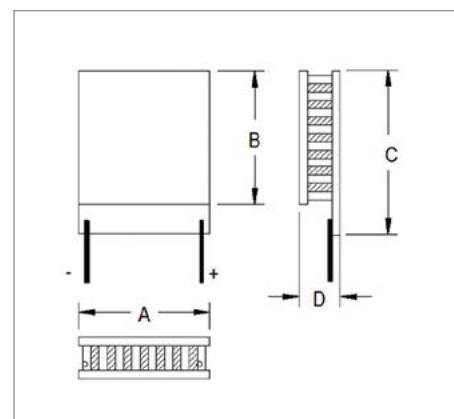
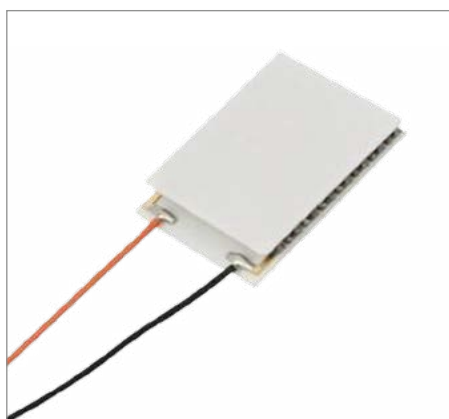


No.	Part No.	Model No.	Th=27°C				N	Dimensions (mm)				
			I max. (A)	Q max. (W)	V max. (V)	ΔT max. (°C)		A	B	C	D	E
1	47479	TES1-095030	3.0	19.3	11.5	67	95	30	30	30	3.6	14.5
2	47480	TES1-125030	3.0	25.3	15.2	67	125	30	30	30	3.6	3.6
3	47481	TES1-095040	3.9	25.1	11.5	67	95	30	30	30	3.2	14.5
4	47482	TES1-125040	3.9	32.9	15.2	67	125	30	30	30	3.2	3.6
5	47483	TEC1-125040	3.9	32.9	15.2	68	125	40	40	40	3.9	4.7
6	47484	TEC1-125060	6.0	50.7	15.2	68	125	40	40	40	3.6	4.7
7	47485	TEC1-125080	8.5	67.7	15.2	68	125	40	40	40	3.3	4.7

High Temperature Module / Power Generator Module

High Temperature Module:

- Excellent cycle stability
- Suitable for particularly high temperatures or as power generators
- Are able to work at a temperature of 250 degree



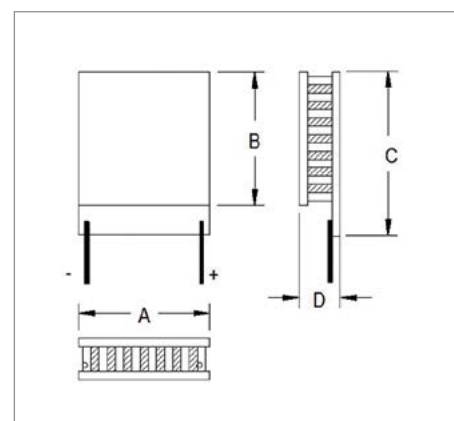
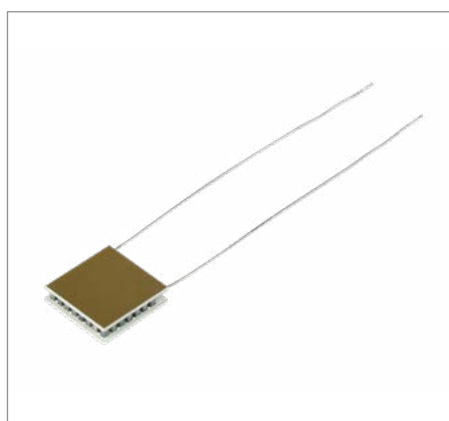
No.	Part No.	Model No.	Th=27°C				N	Dimensions (mm)			
			I max. (A)	Q max. (W)	V max. (V)	ΔT max. (°C)		A	B	C	D
1	47486	HTES1-127030	2.8	24.0	14.4	68	127	30	30	34	3.2
2	47487	HTES1-127040	3.9	33.0	14.4	68	127	30	30	34	3.2
3	47488	HTEC1-071040	3.7	18.0	8.1	68	71	30	30	34	3.7
4	47489	HTEC1-127040	3.7	32.0	14.4	68	127	40	40	44	3.7
5	47490	HTEC1-071060	6.0	29.0	8.1	68	71	30	30	34	3.6
6	47491	HTEC1-127060	6.0	51.0	14.4	68	127	40	40	44	3.6
7	47492	HTEC1-071080	8.5	39.0	8.1	68	71	30	30	34	3.3
8	47493	HTEC1-127080	8.5	72.0	14.4	68	127	40	40	44	3.3

Power Generator Module:

- By using the theory of the Seebeck Effect, our TEGs can generate power from temperature differences
- Standard-Sizes 25 x 25 mm, 30 x 30 mm, 40 x 40 mm

Typical applications:

- Detector instruments
- Various environments where it's hard to get or unsuitable for electrical power

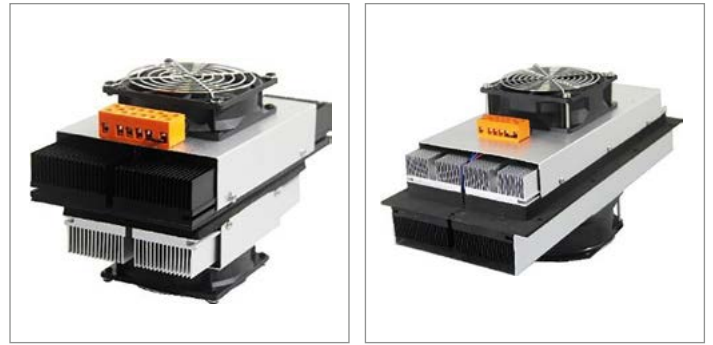


No.	Part No.	Model No.	Tc=30°C, Th=200°C						Dimensions (mm)			
			Voc (V)	V Load (V)	I Load (A)	R in (Ω)	R Load (Ω)	W Load (W)	A	B	C	D
1	47494	TEG-127005	8.54	4.27	0.54	7.9	7.9	2.3	30	30	34	3.0
2	47495	TEG-127006	8.54	4.27	0.67	6.4	6.4	2.8	30	30	34	3.6
3	47496	TEG-127009	8.54	4.27	0.92	4.6	4.6	3.9	30	30	34	3.2
4	47497	TEG-071008	4.78	2.39	0.89	2.7	2.7	2.1	30	30	34	3.9
5	47498	TEG-127008	8.54	4.27	0.89	4.8	4.8	3.8	40	40	44	3.9
6	47499	TEG-071014	4.78	2.39	1.42	1.7	1.7	3.4	30	30	34	3.6
7	47500	TEG-127014	8.54	4.27	1.42	3.0	3.0	6.0	40	40	44	3.6
8	47501	TEG-071020	4.78	2.39	2.0	1.2	1.2	4.8	30	30	34	3.3
9	47502	TEG-127020	8.54	4.27	2.0	2.1	2.1	8.5	40	40	44	3.3

Air to Air System / Plate to Air System

Air to Air System:

Air-to-air cooling units are an optimal solution for cooling below ambient temperature or for temperature control of electronic housings, control cabinets and transport boxes. For installation, a cavity in size of the TEA's is required in the housing. Due to the separate cold and hot side of the TEA's, no particles, dust or dirt can enter the enclosure during operation. Our Air to Air Peltier coolers are also suitable for heating operation with power reversal. Optionally, larger models of these coolers can be supplied with integrated temperature control. Two advantages of these coolers are that they are extremely reliable and mainly maintenance free, and they are easy to use. Install, connect and immediately cool or temper.



No.	Part No.	Model No.	Pc max. (W)	Current (A)	Voltage (V)	Fan Position	Input Power (W)	COP	Ambient (°C)	Weight (KG)v	Dimensions L X W X H (mm)
1	47563	AA-019-12-00	20	2.3	12	Hot & Cold sides	28	0.68	-10 ~ 50	0.6	80 X 62 X 105
2	47504	AA-024-12-00	24	2.4	12		29	0.83		0.59	100 X 82 X 115
3	47505	AA-034-12-00	35	5.0	12		60	0.81		1.0	120 X 110 X 125
4	47506	AA-040-12-00	41	6.3	12		76	0.54		1.8	160 X 122 X 150
5	47507	AA-040-24-00	41	3.2	24		77	0.53		1.8	160 X 122 X 150
6	47508	AA-070-12-00	68	7.6	12		91	0.75		2.5	230 X 122 X 150
7	47509	AA-070-24-00	68	3.8	24		91	0.75		2.5	230 X 122 X 150
8	47510	AA-100-24-00	95	6.5	24		156	0.61		4.1	300 X 152 X 169
9	47511	AA-100-48-00	95	3.3	48		158	0.60		4.1	300 X 152 X 169
10	47512	AA-150-24-00	143	9.8	24		235	0.61		5.0	300 X 181 X 179
11	47513	AA-150-48-00	143	4.9	48		235	0.61		5.0	300 X 181 X 179
12	47514	AA-200-24-00	198	10.8	24		259	0.76		7.3	400 X 181 X 206
13	47515	AA-200-48-00	198	7.3	48		350	0.57		7.3	400 X 181 X 206

Plate to Air System:

Plate to Air TEA's are contact coolers. They have a solid aluminum plate on their cold side, on which the object to be cooled can be placed or contacted. Plate to Air coolers are also suitable for cooling enclosures (preferably metal enclosures). They work by contacting the enclosure wall with the cold side of the cooler. These thermoelectric assemblies are also suitable for heating operation when the current is reversed. These TEAs are extremely reliable and mainly maintenance free.



No.	Part No.	Model No.	Pc max. (W)	Current (A)	Voltage (V)	Fan Position	Input Power (W)	COP	Ambient (°C)	Weight (KG)	Dimensions L X B X H (mm)
1	47516	PA-024-12-00	24	2.4	12	Hot side	29	0.83	-10 ~ 50	0.3	80 X 62 X 69
2	47517	PA-045-12-00	43	6.5	12		78	0.55		1.2	160 X 122 X 83
3	47518	PA-045-24-00	43	3.2	24		78	0.56		1.2	160 X 122 X 83
4	47519	PA-075-12-00	72	7.6	12		91	0.79		1.7	230 X 122 X 83
5	47520	PA-075-24-00	72	3.8	24		91	0.79		1.7	230 X 122 X 83
6	47521	PA-115-24-00	113	6.5	24		156	0.72		2.9	300 X 152 X 101
7	47522	PA-115-48-00	113	3.3	48		158	0.71		2.9	300 X 152 X 100
8	47523	PA-160-24-00	158	9.5	24		228	0.69		3.5	300 X 152 X 114
9	47524	PA-160-48-00	158	4.8	48		230	0.69		3.5	300 X 152 X 113

Plate to Liquid System / Liquid to Air System

Plate to Liquid System:

Plate to Liquid Peltier coolers, like Plate to Air TEA's, have a solid aluminum plate on which the object to be cooled can be placed or contacted. The heat is dissipated by liquid (water). These TEAs are ideal for direct cooling applications up to 160W cooling capacity. They can be used in applications such as laser cooling and analytical instrumentation. Plate to Liquid TEAs can be used for cooling or heating applications. Coolers in this series feature a very compact design and are ideal for applications where cooling water is available. Connector and hose are available as options. Plate to Liquid TEA's are durable and reliable.



No.	Part No.	Model No.	Pc max. (W)	Current (A)	Voltage (V)	Fan Position	Input Power (W)	COP*	Ambient (°C)	Weight (KG)	Dimensions L X B X H (mm)
1	47525	PL-060-12-00	60	4.2	12	-	50	1.19	-10 ~ 50	0.4	100 X 60 X 36
2	47526	PL-120-12-00	120	8.4	12		101	1.19		0.7	140 X 60 X 36
3	47527	PL-120-24-00	120	4.2	24		101	1.19		0.7	140 X 60 X 36
4	47528	PL-210-24-00	210	8.1	24		194	1.08		1.3	240 X 60 X 36
5	47529	PL-210-48-00	210	4.1	48		197	1.07		1.3	240 X 60 X 36

* Wert basierend nur auf das Einzelsystem. Externe Energiequellen werden nicht mitberücksichtigt.

Liquid to Air System:

Liquid-to-air units provide effective cooling or temperature control of liquids. The TEA consists of a liquid profile through which the liquid to be cooled (water, ink or oil) flows. The hot side of the cooling device is equipped with a heat sink and fan that dissipates heat to the environment. Liquid-to-air coolers are designed to operate in a closed liquid circuit. These TEA's are environmentally neutral and mainly maintenance free. Connector and hose are available as options.

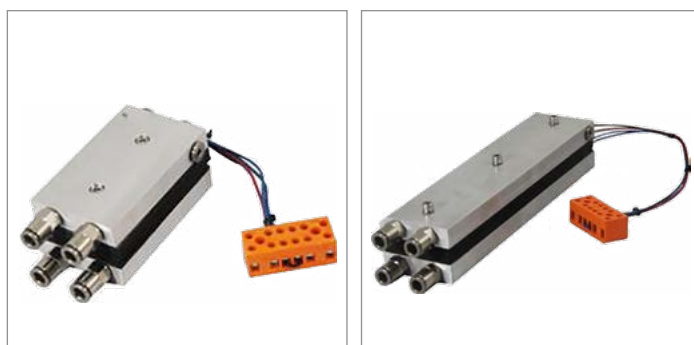


No.	Part No.	Model No.	Pc max (W)	Current (A)	Voltage (V)	Fan Position	Input Power (W)	COP	Ambient (°C)	Weight (KG)	Dimensions L X B X H (mm)
1	47530	LA-045-12-00	45	6.5	12	Hot side	78	0.55	-10 ~ 50	1.2	160 X 122 X 91
2	47531	LA-045-24-00	45	3.4	24		82	0.56		1.2	160 X 122 X 91
3	47532	LA-075-12-00	72	7.6	12		91	0.79		1.8	230 X 122 X 91
4	47533	LA-075-24-00	72	3.8	24		91	0.79		1.8	230 X 122 X 91
5	47534	LA-115-24-00	113	6.5	24		156	0.72		3.0	300 X 152 X 108
6	47535	LA-115-48-00	113	3.3	48		156	0.71		3.0	300 X 152 X 108
7	47536	LA-160-24-00	158	9.5	24		228	0.69		3.5	300 X 152 X 108
8	47537	LA-160-48-00	158	4.8	48		230	0.69		3.5	300 X 152 X 108

Liquid to Liquid System / Direct to Air System

Liquid to Liquid System:

Liquid-to-liquid coolers are ideal for cooling liquids such as oil, ink or water. With them it is also possible to cool gaseous substances. The heat pumped by the Peltier element must be dissipated on the hot side by a liquid. By connecting several LL coolers in series, a powerful cooling unit can be realized in a small space. The liquid-to-liquid cooling assembly is also suitable for heating operation with current reversal. These Peltier coolers are extremely reliable and mainly maintenance-free.



No.	Part No.	Model No.	Pc max (W)	Current (A)	Voltage (V)	Fan Position	Input Power (W)	COP*	Ambient (°C)	Weight (KG)	Dimensions L X B X H (mm)
1	47538	LL-060-12-00	60	4.2	12	-	50	1.19	-10 ~ 50	0.5	100 X 60 X 44
2	47539	LL-120-12-00	120	8.4	12		101	1.19		0.8	140 X 60 X 44
3	47540	LL-120-24-00	120	4.2	24		101	1.19		0.8	140 X 60 X 44
4	47541	LL-210-24-00	210	8.1	24		194	1.08		1.4	240 X 60 X 44
5	47542	LL-210-48-00	210	4.1	48		197	1.07		1.4	240 X 60 X 44

* Wert basierend nur auf das Einzelsystem. Externe Energiequellen werden nicht mitberücksichtigt.

Direct to Air System:

The special feature of our tunnel TEA's is the heat sink, which is designed in the form of a tunnel. The fan located at the tunnel end achieves maximum air transfer. Tunnel coolers are available as air-to-air cooling units or direct-to-air cooling units.



No.	Part No.	Model No.	Pc max (W)	Current (A)	Voltage (V)	Input Power (W)	Ambient (°C)	Weight (KG)	Abmessungen L X B X H (mm)
1	47543	DA-011-05-00	11	2.3	5.5	12	-10 ~ 50	0.2	60 X 44 X 56
2	47544	DA-011-12-00	12	1.8	12	22		0.2	60 X 44 X 56
3	47545	DA-025-12-00	26	3.2	12	38		0.6	99 X 66 X 85
4	47546	DA-025-24-00	26	1.7	24	41		0.6	99 X 66 X 85
5	47547	DA-031-12-00	32	3.1	12	37		0.6	99 X 66 X 85
6	47548	DA-031-24-00	32	2.2	24	53		0.6	99 X 66 X 85
7	47549	DA-040-12-00	40	5.2	12	67		0.8	155 X 66 X 85
8	47550	DA-065-12-00	63	5.7	12	68		1	180 X 66 X 85
9	47551	DA-065-24-00	63	2.8	24	67		1	180 X 66 X 85

Mini Intelligent Dehumidifier 12 V / 24 V

Product Description

Our Mini Intelligent Dehumidifying Devices adopt the semi-conducting cooling dehumidification method. The fans of dehumidification device absorb the moist air into dehumidification air tube from confined space. When the moist air contacts the cooling parts, the moisture in the air will turn into condensation water.

Condensation water under the effect of gravity drip into the water tank and drain off from aqueduct. The recycling of the dehumidification process drains the water of cabinet in the form of condensation water, so as to dehumidify and prevent condensation. The dehumidifying way of semiconductor refrigeration can reduce the amount of water in the air. It can also reduce both air humidity and relative humidity in the confined space.

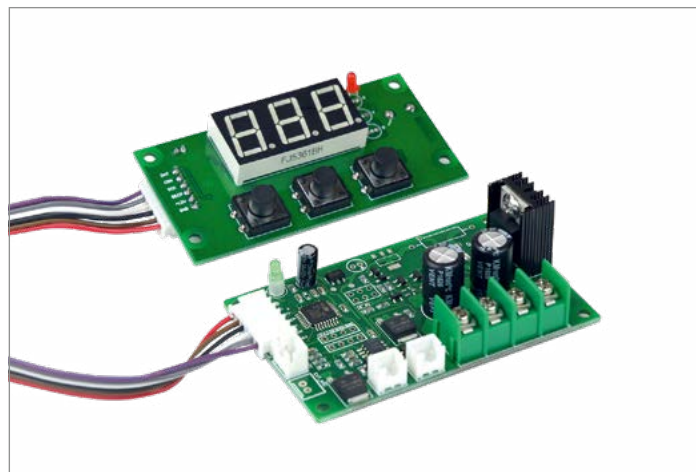
This models overcomes the disadvantages that traditional heating dehumidification cannot truly reduce air humidity and cause the temperature in cabinet rise.



Model	Technical parameters	
Part No.	47390	47503
Model No.	PN-D2412D	PN-D3024D
Working power supply	DC – 12 V	DC – 24 V
Electric power	24 W	30 W
Humidity detection range	1 % RH ~ 99 % RH	1 % RH ~ 99 % RH
Humidity measurement accuracy	+/- 3 % RH	+/- 3 % RH
Dehumidification start value	55 % RH	55 % RH
Dehumidification stop value	35 % RH	35 % RH
Dehumidifying capacity	250 ml/24 h (35 °C RH = 85 %)	250 ml/24 h (35 °C RH = 85 %)
Storage temperature	-30 °C ~ 70 °C	-30 °C ~ 70 °C
Operating temperature	-10 °C ~ 55 °C	-10 °C ~ 55 °C
Outline dimension L X W X H (mm)	125 (104) X 64 X 66	125 (104) X 64 X 66
Net weight	320 g	320 g
Aqueduct specification	Heat-resistant silicone pipe L= 1 m	Heat-resistant silicone pipe L= 1 m

Temperature Controller

The temperature controller is mainly designed for semiconductor cooler to adjust the application environment temperature, we use chip technology with higher performance, lower power consumption.



Series	Model	Parameter		Control Method	Working Mode			RS485 Function	Display	Size L*W*H(mm)
		V	A		C	H	C-H			
G	G1215002	12	15	ON/OFF	√	√	x	x	√	78 x 50 x 23
	G2415002	24	15	ON/OFF	√	√	x	x	√	78 x 50 x 23
	G4815002	48	15	ON/OFF	√	√	x	x	√	78 x 50 x 23
	G1215P02	12	15	PID	√	√	x	x	√	78 x 50 x 23
	G2415P02	24	15	PID	√	√	x	x	√	78 x 50 x 23
	G4815P02	48	15	PID	√	√	x	x	√	78 x 50 x 23
S	S1215034	12	15	ON/OFF	√	√	√	√	√	114 x 57 x 21
	S2415034	24	15	ON/OFF	√	√	√	√	√	114 x 57 x 21
	S4810034	48	10	ON/OFF	√	√	√	√	√	114 x 57 x 21

Note:

1. "H" on behalf of the heating, "C" On behalf of the refrigeration, „H-C" Represents automatic switching of refrigeration and heating

2. "√" on behalf of the standard, "I" On behalf of the matching, „x" Represents no such function.

Customized Solutions

Over 10 years of experience ensure that P&N remains at the forefront of technology and can advise our clients from a basis of up-to-date knowledge. P&N has established an R&D center with sophisticated lab equipment which provides a wide range of technical consultancy services in the design of thermoelectric projects. These services can be used through a project – from initial planning and feasibility studies through preliminary and detailed design to construction and operation. We focus on delivering appropriate solutions for the cost-effective development of projects.

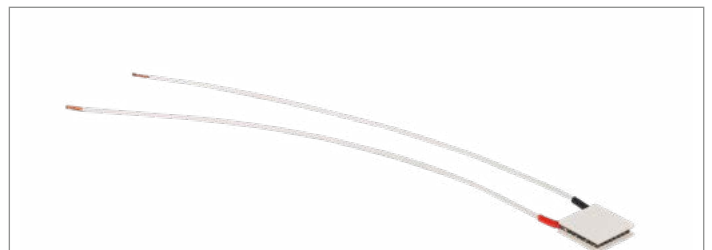
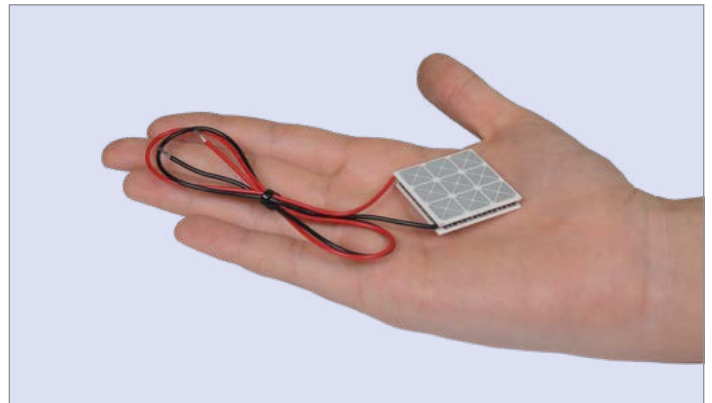
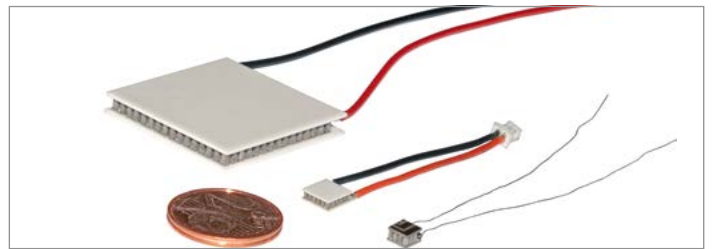
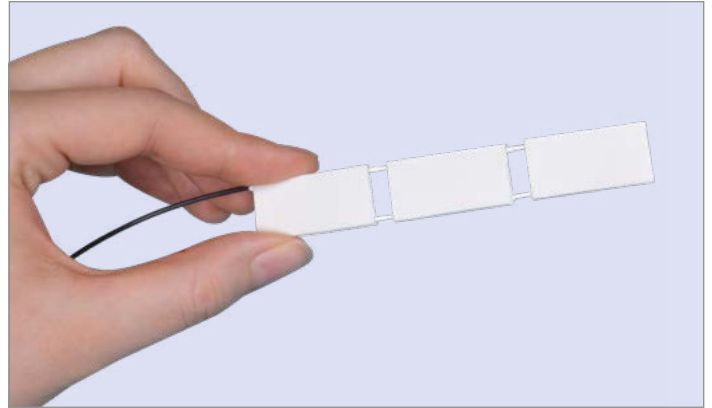
Examples for customization:

Customized Thermoelectric Modules

- Customized lead lengths
- Modification with fitting connectors, ferrules, strain reliefs etc.
- Selected by tolerances
- Customized sizes
- With printed TIM (Thermal-interface material)
- Thermoelectric module material with UL-certification
- Special moisture protection (e. g. Parylene coating)

Customized Thermoelectric Assemblies

- Modification with fitting connectors, ferrules, strain reliefs etc.
- With IP-Protection according to your requirements
- Customized TEA according to your requirements (e.g. cooling power, size, design etc.)



Forms

Specification for Thermoelectric Assemblies (TEA)

Dimensions (Size, Sketch, Drawing)

Operating Voltage (5, 12, 24, 48 VDC)

Operating Temperature (Cooling Range)

Ambient Temperature

Cooling Capability

Part to be cooled

Installation Type (screw, clamp)

Ambient Conditions (inside / outside)

Cooling Mode (cooling, heating / cooling)

Temperature Measurement (Temperature sensor)

Temperature Control (Controller)

Quantity (Total p.a.)

Time Line (One Shipment / Frame Contract)

Project Status (new / existing)

Target Price

Specification for Thermoelectric Modules (TEM)

Dimensions (Size, Sketch, Drawing)

Operating Voltage (5, 12, 24, 48 VDC)

Operating Temperature (Cooling Range)

Ambient Temperature

Cooling Capability

Part to be cooled

Installation Type (screw, clamp)

Ambient Conditions (inside / outside)

Cooling Mode (cooling, heating / cooling)

Temperature Measurement (Temperature sensor)

Temperature Control (Controller)

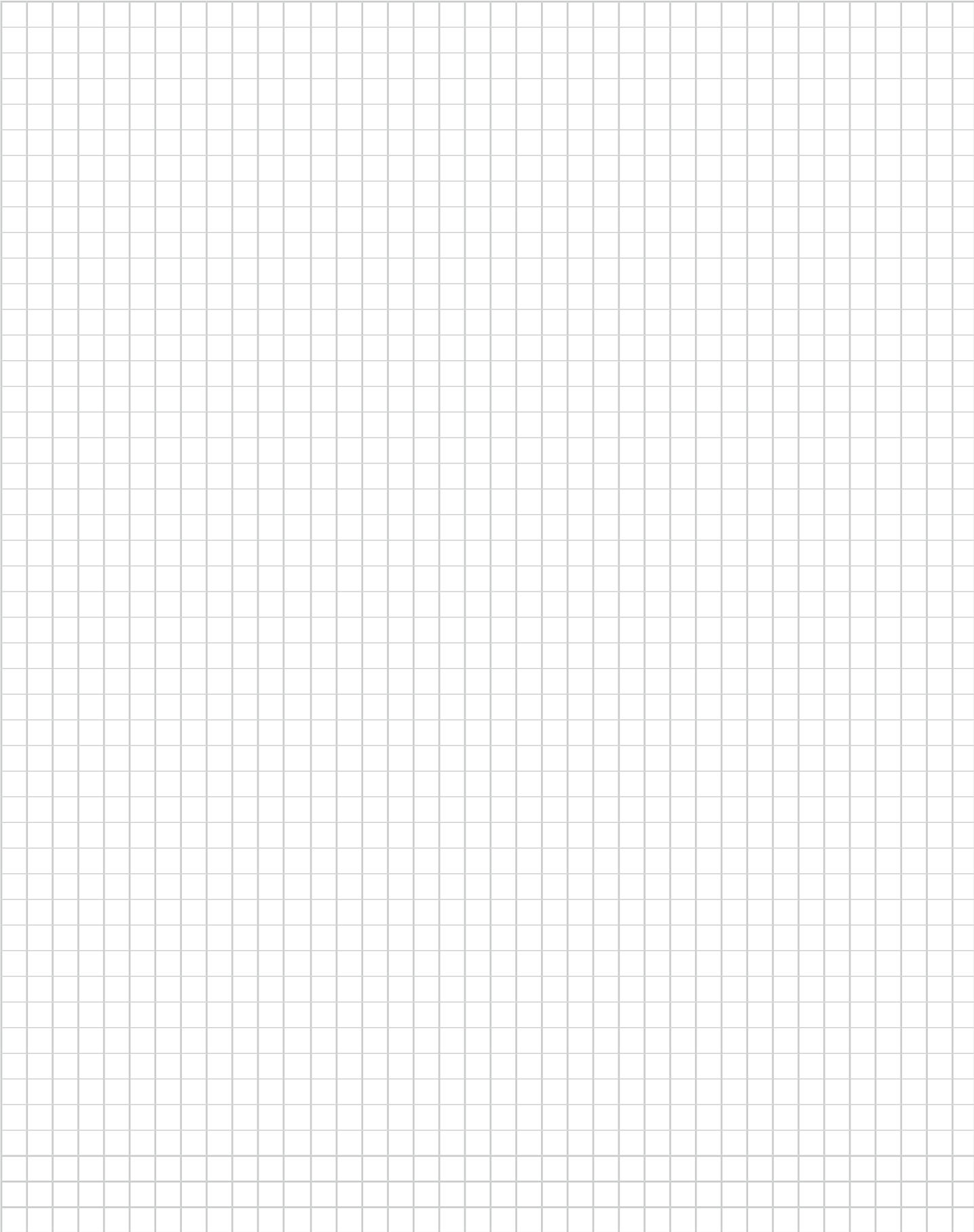
Quantity (Total p.a.)

Time Line (One Shipment / Frame Contract)

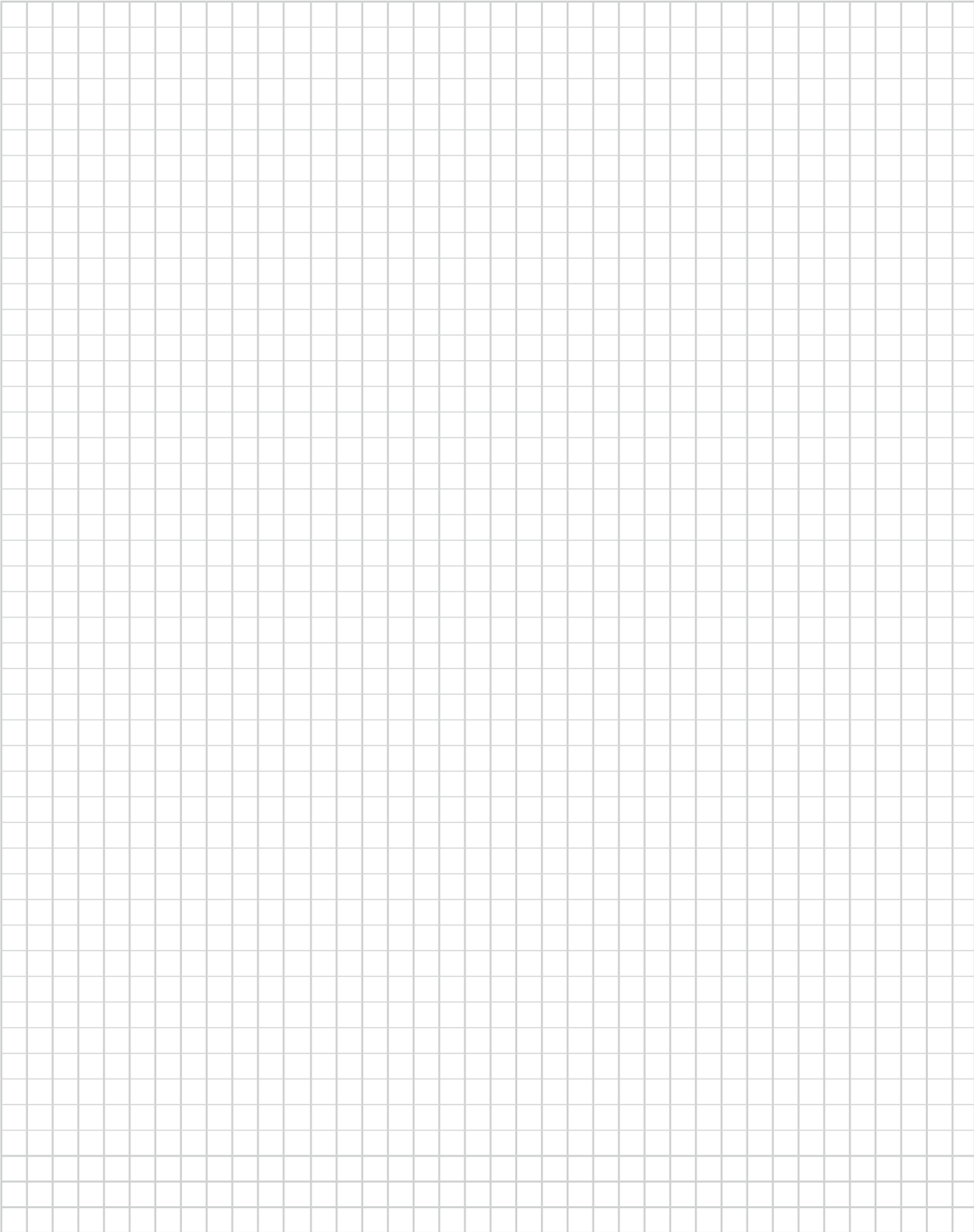
Project Status (new / existing)

Target Price

Notes



Notes



P&N Distributors



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Your local partner

The logo for ARIZO, with 'A' in blue and 'RIZO' in grey.

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