PREVOST PIPING SYSTEM
compressed air network

100% ALUMINIUM

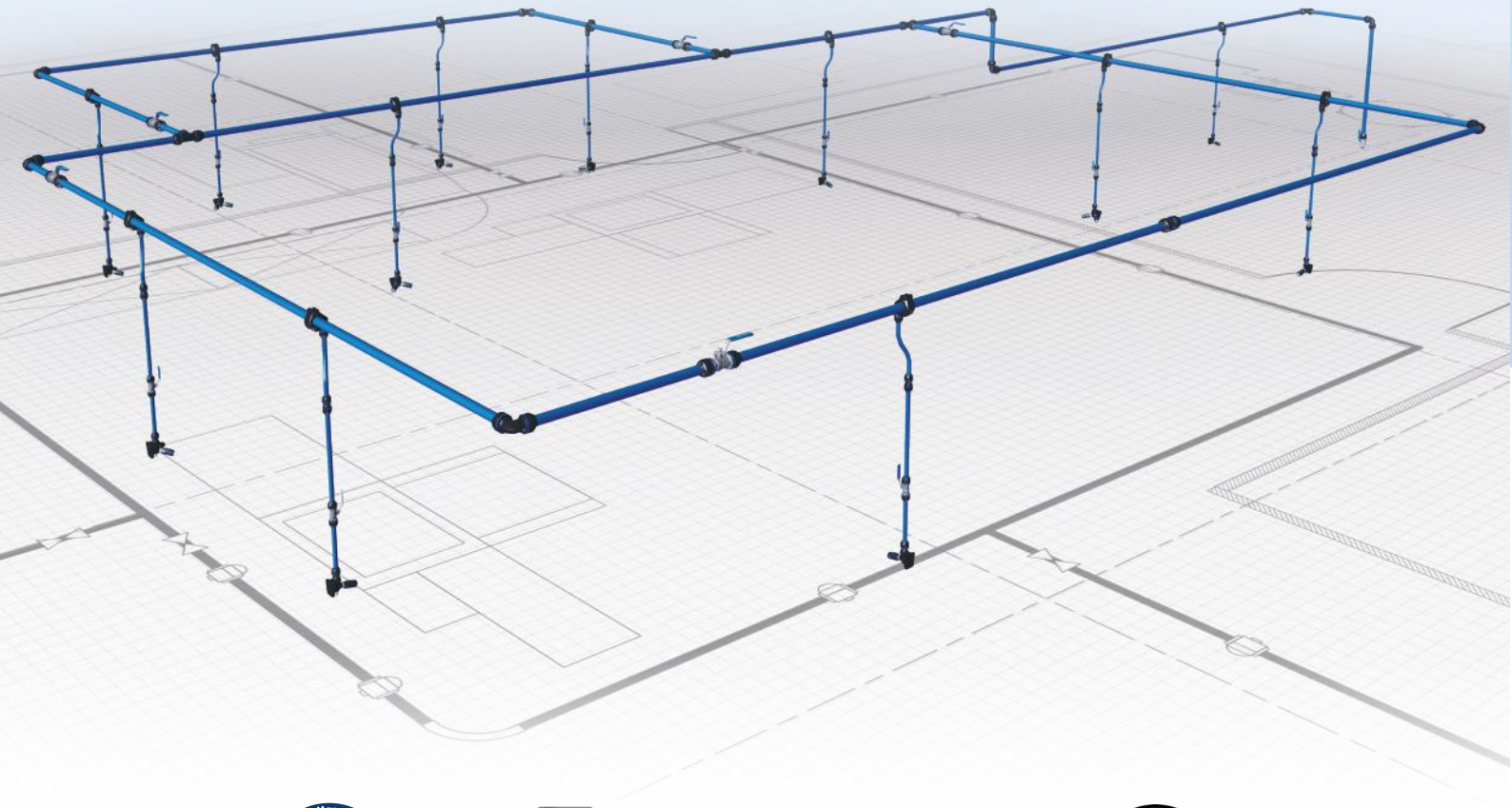
The new ***PREVOST PIPING SYSTEM*** compressed air network range comprises **compact, lightweight and resistant pipes and couplings made from aluminium**.

They are **quick and easy to install** and can be pressurised immediately.

The ***PREVOST PIPING SYSTEM*** range guarantees:

- A **clean** and **high-quality air supply**
- A **leaktight** network and **optimised flow rate**
- An operating pressure of 16 bar.

Workstations are well supplied, accessible and ergonomic. The system is long-lasting and can easily be adapted.



*Advantages of the new **P**REVOST **P**IPING **S**YSTEM range*

COMPACT AND LIGHTWEIGHT

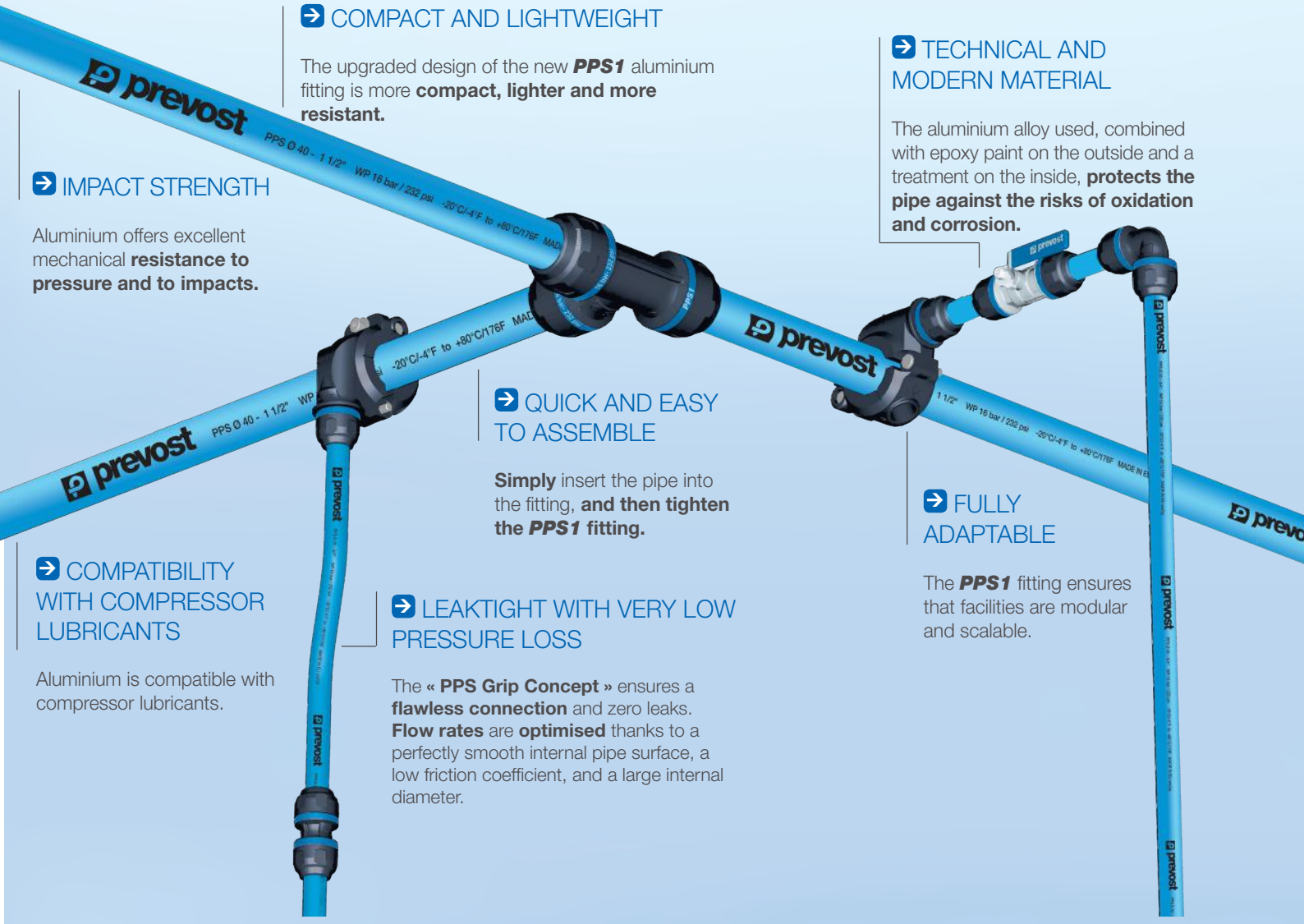
The upgraded design of the new ***PPS1*** aluminium fitting is more **compact, lighter and more resistant.**

TECHNICAL AND MODERN MATERIAL

The aluminium alloy used, combined with epoxy paint on the outside and a treatment on the inside, **protects the pipe against the risks of oxidation and corrosion.**

IMPACT STRENGTH

Aluminium offers excellent mechanical **resistance to pressure and to impacts.**



QUICK AND EASY TO ASSEMBLE

Simply insert the pipe into the fitting, **and then tighten the *PPS1* fitting.**

FULLY ADAPTABLE

The ***PPS1*** fitting ensures that facilities are modular and scalable.

COMPATIBILITY WITH COMPRESSOR LUBRICANTS

Aluminium is compatible with compressor lubricants.

LEAKTIGHT WITH VERY LOW PRESSURE LOSS

The **« PPS Grip Concept »** ensures a **flawless connection** and zero leaks. **Flow rates** are **optimised** thanks to a perfectly smooth internal pipe surface, a low friction coefficient, and a large internal diameter.

100% ALUMINIUM TUBING

Prevost offers a wide range of 100% aluminium pipes for compressed air, vacuum and nitrogen systems.

RUSTPROOF

VERY LOW PRESSURE LOSS
owing to a smooth internal surface

COST-EFFECTIVE

UV AND HEAT-RESISTANT
low expansion coefficient.

MARKING AND ISO COLOUR

NO FIRE HAZARD
no need for fire permit

EASY TO CUT
and chamfer for simlify installation and maintenance

VERY LIGHTWEIGHT
can be handled by one person

PIPE PROPERTIES

- **Material:** Extruded aluminium. EN AW 6060 T6 UNI-EN 573-3 alloy
- **Treatment:** Interior and exterior (compliant with RoHS standard)
- **Coating:** Electrostatic paint
- **Extrusion quality:** Calibrated, seamless
- **Compatible fluids:** Compressed air, vacuum, neutral gases
- **Pipe lengths:** 4 or 6 metres
- **Density:** 2.7 kg/dm^3
- **Pipe external diameter:** 16, 20, 25, 32, 40, 50, 63, 80 mm

100% ALUMINIUM COUPLINGS

New concept

Pipes are held in the coupling using a new system known as **PPS Grip Concept**.
PPS Grip Concept is based on a **stainless steel ring** with **teeth** that penetrate the aluminium.
Leaktightness is achieved via a **new contoured and lubricated seal, with optimised design and specifications**.
The seal remains perfectly leaktight even under the harshest conditions.

IDENTIFICATION

The Prevost logo is engraved on each coupling.

PRESSURE

Maximum service pressure (bar/psi)

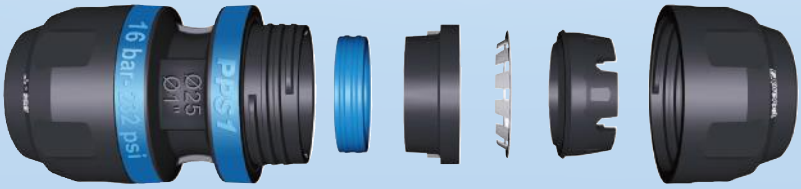
DIAMETER

Pipe external diameter in mm and inches

MARKER

To indicate that the pipe is correctly positioned in the coupling

TRACEABILITY



LEAKTIGHTNESS

The gasket is specifically designed for this application. It comprises two Teflon-coated lobes to optimise leaktightness.

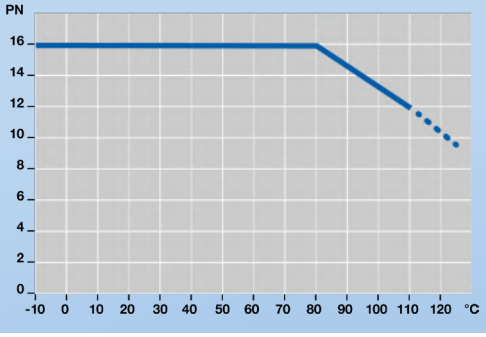
INTERNAL PARTS

Internal parts cannot be detached from the body after assembly.

TECHNICAL SPECIFICATIONS

- **Service pressure range:** from 0.98 bar to 16 bar
- **Temperature range:** from -20°C to 80°C
- **Body and nut:** 100% aluminium, EN AB 46100
- **PPS Grip Concept:** fastening system using teeth
- Tapping port flange to manage condensates and have a clean compressed air into the drop

Service pressure graph as a function of temperature



100% ALUMINIUM COUPLINGS

Tapping port flange

The body and nut are made **entirely of aluminium.** The tapping flange is extremely compact, and is fitted **with an anti-rotation** system and removable half-shell. It can be drilled without disassembly.

The tapping flange enable **dry air supply** to the workstations by drawing air via the wall of the pipe.

The water remaining in the lower section of the main pipe will be drained to a low point via an automatic drain trap.

Valves

Various versions exist:

tube / tube

threaded male / tube

threaded female / tube

Tightening

The nut and body can be tightened using standard tools or special Prevost wrenches.

Torque can be checked using a torque wrench.

NETWORK DESIGN

A compressed air network entails **linking a source of compressed air, i.e. one or more compressors, to the power distribution point or points.**

The structure of PREVOST networks is made of aluminium tubes.

These are fixed at a **minimum height of 2.5 m above floor level** and form the primary loop of the network.

From this loop, pipes with a smaller diameter, known as **downpipes**, feed off. Their ends are around **1.2 m above floor level**. These constitute **compressed air distribution points**, to which various items of equipment (such as couplings, filters, flexible hoses) are attached.

NETWORK DESIGN CALCULATIONS

To design a network, the **tube diameter must be determined**, taking into account the **desired flow rate** and the **length of the main pipe**. The data below is calculated for a service pressure of 8 bar with 5% pressure loss.

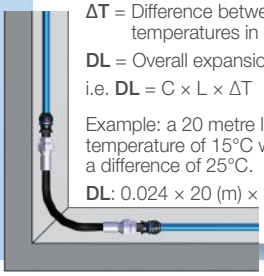
COMPRESSOR*					LENGTH OF MAIN PIPE								
POWER		FLOW RATE			50 m	100 m	150 m	300 m	500 m	750 m	1000 m	1300 m	1600 m
kW	hp	Nm³/h	Nl/min	Scfm	164 ft	328 ft	492 ft	984 ft	1640 ft	2460 ft	3280 ft	4265 ft	5249 ft
2.2	3	22	367	13	16	16	20	20	25	25	25	25	32
3	4	30	500	18	16	20	20	25	25	25	32	32	32
4	5	40	668	24	20	20	20	25	25	32	32	32	32
5.5	7.5	50	833	29	20	20	25	25	32	32	32	32	40
7.5	10	70	1167	41	20	25	25	32	32	32	40	40	40
11	15	100	1667	59	25	25	32	32	40	40	40	50	50
15	20	150	2500	88	25	32	32	40	40	50	50	50	50
18	25	180	3000	106	32	32	40	40	50	50	50	63	63
22	30	220	3674	130	32	40	40	50	50	50	63	63	63
26	35	260	4167	147	32	40	40	50	50	63	63	63	63
30	40	350	5833	206	40	40	50	50	63	63	63	63	80
37	50	370	6179	218	40	40	50	50	63	63	63	80	80
45	60	500	8350	294	50	50	50	63	63	80	80	80	80
55	75	550	9185	324	50	50	50	63	63	80	80	80	80
75	100	750	12500	441	63	63	63	63	80	80	80		
90	125	1000	16667	589	63	63	63	80	80				
110	150	1100	18370	649	63	63	63	80	80				
132	175	1500	25000	883	63	80	80	80					
160	215	1750	29167	1030	63	80	80						
200	270	2000	33333	1177	80	80	80						

* These values may differ slightly from the data provided by compressor manufacturers.

EXPANSION OF MATERIALS

Aluminium is subject to **expansion and contraction** phenomena in the event of temperature variations.
To compensate for this, it is advisable to fit **devices capable of absorbing this variation**.

Hoses serve this purpose. They also make it possible to **change direction** (corners) and **circumvent any obstacles** (pillars, beams, etc.) in the workshop.



Expansion coefficient: 0.024 mm per metre and per degree Celsius.

Expansion is calculated as follows:

C = Expansion coefficient

L = Length of the straight stretch (between two fixed points)

ΔT = Difference between the maximum and minimum ambient temperatures in °C.

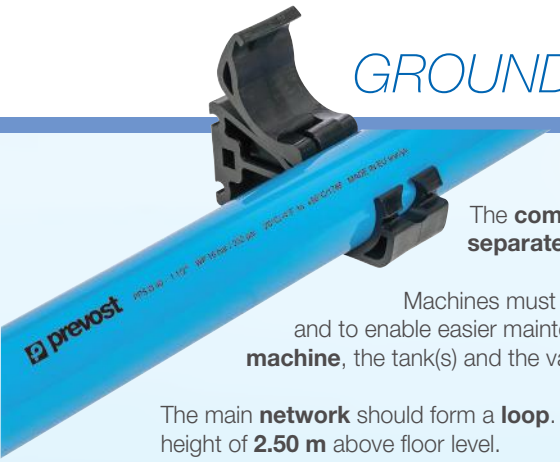
DL = Overall expansion

i.e. **DL** = C × L × ΔT

Example: a 20 metre line using 40 mm tubing, at an ambient temperature of 15°C with a maximum temperature of 40°C, i.e. a difference of 25°C.

DL: 0.024 × 20 (m) × 25°C (40°C – 15°C) = 12 mm

GROUND RULES FOR NETWORK INSTALLATION



The **compressor room** should ideally be **spacious**, **well ventilated**, **well insulated and separated from the rest of the workshops**.

Machines must be **connected** to the **PPS** network via **hoses** in order to eliminate risks related to vibrations and to enable easier maintenance (product codes LEF and LEM). It is important to **install bypasses between each machine**, the tank(s) and the various filters.

The main **network** should form a **loop**. For safety reasons, it is advisable to install the main compressed air pipes at a minimum height of **2.50 m** above floor level.

The pipe must be fastened using a **sufficient number of sliding clamps** to ensure that it is held in place, while allowing for the expansion and contraction of the pipe (product code PPS CI).

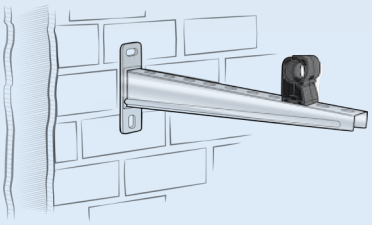
The **residual condensates** must be **drained** from the main line via **direct downpipes** installed lower than the bottom generating line of the pipe and **fitted** with an automatic drain trap system.

Network mounting

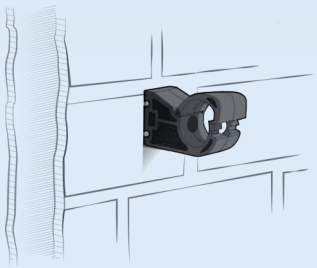
The methods used to anchor the network (to the wall or ceiling) must be selected according to the configuration of the workshop.

The various pipes comprising the installation must be mounted in such a way as to obtain a **perfect alignment that is both solid and cleanly finished.**
It is therefore important to comply with the **distances between each mounting point**.
For correct assembly, a distance of 3 metres should be left between two clamps.

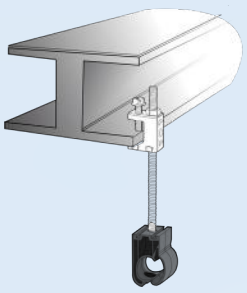
Tubing at a distance from the wall



Tubing parallel to the wall



Suspended tubing

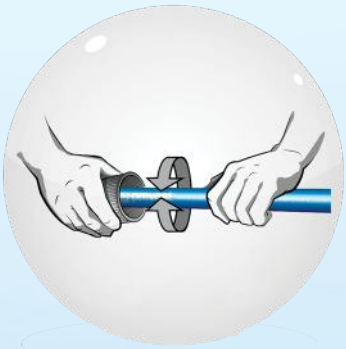


ASSEMBLY PRINCIPLE

CUTTING

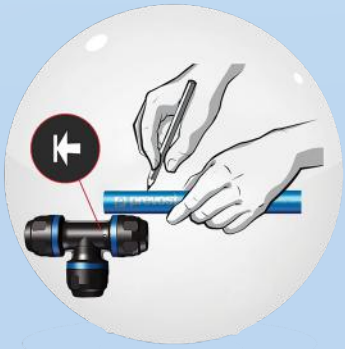
The pipe must be cut perpendicular to its length (ref. PPS CTU).

CHAMFERING



Chamfer the external edge of the pipe to make it easier to fit into the fitting and to avoid damage to the seal.
Chamfer the inner edge eliminate any cutting residues.

MARKING



Mark the tube to indicate the insertion depth in the fitting (use the reference marks on the fittings or on the wrench).

LUBRICANT

ASSEMBLY

Unscrew the nut by several turns, and then insert the pipe while rotating it slightly until the recommended length is reached.
NB: an assembly fluid (ref. PPS AL) is recommended to facilitate the assembly.

TIGHTENING

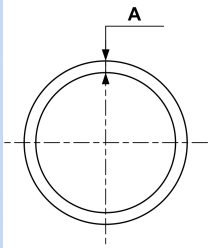
Re-screw the nut by hand, and then tighten according to recommendations.

PPS system 100% aluminium network

PPS - Aluminium blue pipe for compressed air

Technical characteristics

- **Technology:** PPS Grip Concept
- **Operating pressure:** 0 to 16 bar
- **Vacuum capability:** -0.98 bar (vacuum 98%)
- **Temperature:** -20°C to +80°C
- **Construction:** Pipe and fittings: alu.
- **Highlight:** Scalable system
- **Meets standards:** PED REACH



A (mm)	Pipe OD (mm)	Length (m)	Parts Numbers
1,3	16	4	**PPS BTU1640**
1,3	20	4	**PPS BTU2040**
1,3	20	5.5	**PPS BTU2055**
1,4	25	4	**PPS BTU2540**
1,4	25	5.5	**PPS BTU2555**
1,5	32	4	**PPS BTU3240**
1,5	32	5.5	**PPS BTU3255**
1,8	40	4	**PPS BTU4040**
1,8	40	5.5	**PPS BTU4055**
2,0	50	5.5	**PPS BTU5055**
2,0	63	5.5	**PPS BTU6355**
2,4	80	5.5	**PPS BTU8055**

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