

控制电缆
Control Cable



交联聚乙烯绝缘聚氯乙烯护套控制电缆
Control Cable with XLPE Insulation and PVC Sheath
聚氯乙烯绝缘及护套控制电缆
PVC Insulation & Sheath Control Cable

交联聚乙烯绝缘控制电缆 XLPE Insulation Control cable

本产品适用于交流额定电压450/750V及以下控制，监控回路及保护线路等场合使用。

It is used in controlling, supervising loop and protecting circuit cases of A.C. rated voltage 450/750V or lower.

一、生产执行标准
GB/T 9330.3-2008

Executive standard:
GB/T 9330.3-2008

二、使用特性 Working Condition

1. 电缆导体的长期允许工作温度为90℃。
2. 电缆的敷设温度应不低于0℃，推荐的允许弯曲半径：
无铠装层的电缆，应不小于电缆外径的8倍；有铠装或铜带屏蔽结构的电缆，应不小于电缆外径的12倍。

- 1: Long-term working temperature allowed by cable conductor is 90℃..
- 2: Environment temperature for installation should be no less than 0℃, allowed bending radius is stipulated as follows:It should be no less than 8 times that of cable OD for unarmored cable;It should be no less than 12 times that of cable OD for armored

三、产品型号中各字母代表意义

1. 系列代号.....K
2. 材料代号
铜导体.....省略
交联聚乙烯或交联聚烯烃绝缘.....YJ
聚氯乙烯护套.....V
聚乙烯或聚烯烃护套.....Y
3. 结构特征代号
编织屏蔽.....P
铜带屏蔽.....P2
软结构.....R
铝/塑复合薄膜屏蔽.....P3
双钢带铠装.....2
钢丝铠装.....3

Codes Meaning

- Series code.....K
Material Code
Copper conductor.....omitted
XLPE or crosslinked polyolefine insulation.....YJ
PVC sheath.....V
PE or Polyolefine sheath.....Y
Classified by Structure and Performance
Braided shielding.....P
Copper tape shielding.....P2
Soft structure.....R
Aluminum-polyester tape shielding.....P3
Dual steel tape armor.....2
Steel wire armored.....3

四、型号、名称 (见表1)

Type and Description

Table 1

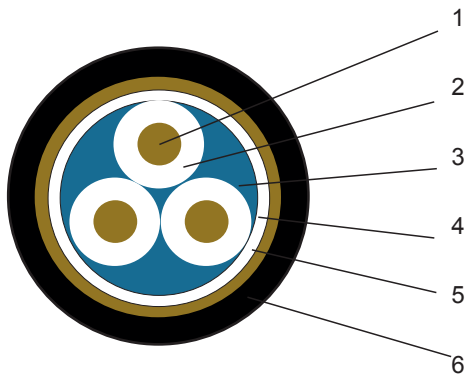
型号 Type	产品名称 Description
KYJV	铜芯交联聚乙烯绝缘聚氯乙烯护套控制电缆 Control cable with Cu core, XLPE insulation, PVC sheath
KYJVP	铜芯交联聚乙烯绝缘聚氯乙烯护套铜丝编织屏蔽控制电缆 Control cable with Cu core, XLPE insulation, PVC sheath, copper wire braided shielding
KYJVP2	铜芯交联聚乙烯绝缘聚氯乙烯护套铜带屏蔽控制电缆 Control cable with Cu core, XLPE insulation, PVC sheath, copper tape shielding
KYJVP3	铜芯交联聚乙烯绝缘聚氯乙烯护套铝塑复合带屏蔽控制电缆 Control cable with Copper conductor, XLPE insulation, PVC sheath, aluminum-polyester tape shielding
KYJV22	铜芯交联聚乙烯绝缘聚氯乙烯护套钢带铠装控制电缆 Control cable with Cu core, XLPE insulation, PVC sheath, steel tape armor
KYJVP2-22	铜芯交联聚乙烯绝缘聚氯乙烯护套铜带屏蔽钢带铠装控制电缆 Control cable with Cu core, XLPE insulation, PVC sheath, copper tape shielding, steel tape armor
KYJV32	铜芯交联聚乙烯绝缘聚氯乙烯护套钢丝铠装控制电缆 Control cable with Cu conductor, XLPE insulation, PVC sheath and steel wire armored

注：①用户需要阻燃型产品，订货时应在原型号前加“ZA-、ZB-、ZC-”，如：ZA-KYJV型等。
②根据用户需要，还可提供生产未列出的型号的产品，如：KYJVP2-23、KYJY33等。

Prefix ZA-, ZB-, ZC is added to the original type for indication of flame resistance cable, for example, ZA-KYJV.
We also produce unlisted type of cables as required, such as KYJVP2-23, KYJY33 and so on.

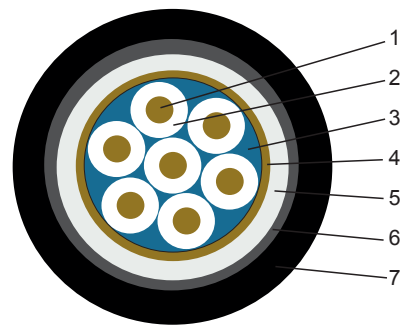
产品结构示意图

The figure of cable structure



KYJVP type

- 1、导体 2、交联聚乙烯绝缘 3、填充 4、聚酯带 5、铜丝编织屏蔽
6、聚氯乙烯护套
1.conductor 2.polyester tape 3. filling 4.XLPE insulation
5.copper wire braided shielding 6.PVC sheath



KYJVP2-22 type

- 1 导体 2 交联聚乙烯绝缘 3 聚酯带 4 铝带或铜带绕包屏蔽
5 内衬层 6 铠装层 7 聚氯乙烯护套
1. conductor 2.XLPE insulation 3.polyester tape
4.aluminum tape shielding (copper tape wrapping shielding) 5.inner layer 6.armor layer 7.PVC sheath

五、技术参数

1、成品电缆导体20°C时直流电阻，见表2:

项目 Item	单位 Unit	技术指标 Technical indices							
		截面mm ² cross section area	0.75	1.0	1.5	2.5	4	6	10
20°C时导体直流电阻 DC resistance of conductor at 20°C	Ω/km	Category A, B类	24.5	18.1	12.1	7.41	4.61	3.08	1.83
		category R类	26.0	19.5	13.3	7.98	/	/	/

2、成品电缆应经受3.0kV/5min工频交流电压试验，绝缘不击穿。

DC resistance of finished cable conductor at 20°C in table 2

Table 2

2: Finished cable should bear A.C. voltage of 3.0KV under power frequency for 5min without puncture of insulation.

3、成品电缆导体90°C时直流电阻，见表2:

项目 Item	单位 Unit	技术指标 Technical indices							
		截面mm ² cross section area	0.75	1.0	1.5	2.5	4	6	10
90°C时导体直流电阻 DC resistance of conductor at 90°C	Ω/km	Category A, 类	1.20	1.10	1.10	1.0	0.85	0.70	/
		category B类	1.4	1.30	1.0	0.90	0.77	0.65	0.65

DC resistance of finished cable conductor at 90°C in table 3

Table 3

4、交联聚乙烯绝缘控制电缆的耐热性、耐寒性、耐化学性、绝缘电阻和使用寿命远优于聚氯乙烯绝缘控制电缆。

4: Control cable with XLPE insulation has good features of heat resistance, freezing resistance, chemistry resistance, insulated resistance and long lifetime compared with control cable with PVC insulation.

六、典型电缆结构及外形尺寸

External Dimension of Common Type

KYJV型铜芯交联聚乙烯绝缘聚氯乙烯护套控制电缆
Control cable with Cu conductor, XLPE insulation and PVC sheath (KYJV)

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter
2×0.75	1	7.7	3×0.75	1	8.1	4×0.75	1	8.6
2×0.75	2	7.9	3×0.75	2	8.3	4×0.75	2	8.8
2×1.0	1	8.0	3×1.0	1	8.4	4×1.0	1	8.9
2×1.0	2	8.2	3×1.0	2	8.6	4×1.0	2	9.2
2×1.5	1	8.5	3×1.5	1	8.9	4×1.5	1	9.5
2×1.5	2	8.7	3×1.5	2	9.1	4×1.5	2	9.7
2×2.5	1	9.6	3×2.5	1	10.1	4×2.5	1	10.9
2×2.5	2	9.8	3×2.5	2	10.3	4×2.5	2	11.1
2×4	1	10.5	3×4	1	11.1	4×4	1	12.0
2×4	2	10.8	3×4	2	11.4	4×4	2	12.3
2×6	1	11.5	3×6	1	12.1	4×6	1	13.7
2×6	2	11.8	3×6	2	12.5	4×6	2	14.2
2×10	2	14.2	3×10	2	15.0	4×10	2	16.2
5×0.75	1	9.2	7×0.75	1	9.8	8×0.75	1	10.7
5×0.75	2	9.4	7×0.75	2	10.1	8×0.75	2	11.0
5×1.0	1	9.6	7×1.0	1	10.2	8×1.0	1	11.2
5×1.0	2	9.8	7×1.0	2	10.5	8×1.0	2	11.5
5×1.5	1	10.2	7×1.5	1	10.9	8×1.5	1	12.0
5×1.5	2	10.5	7×1.5	2	11.2	8×1.5	2	12.4
5×2.5	1	11.8	7×2.5	1	12.7	8×2.5	1	14.6
5×2.5	2	12.0	7×2.5	2	13.5	8×2.5	2	14.9
5×4	1	12.9	7×4	1	14.5	8×4	1	16.1
5×4	2	13.9	7×4	2	15.0	8×4	2	16.6
5×6	1	14.8	7×6	1	16.0	8×6	1	17.7
5×6	2	15.3	7×6	2	16.6	8×6	2	18.4
5×10	2	17.6	7×10	2	19.1	8×10	2	21.8
10×0.75	1	11.8	12×0.75	1	12.2	14×0.75	1	12.7
10×0.75	2	12.2	12×0.75	2	12.6	14×0.75	2	13.7
10×1.0	1	12.4	12×1.0	1	12.8	14×1.0	1	13.9
10×1.0	2	12.8	12×1.0	2	13.8	14×1.0	2	14.3
10×1.5	1	14.0	12×1.5	1	14.4	14×1.5	1	15.0
10×1.5	2	14.3	12×1.5	2	14.8	14×1.5	2	15.4
10×2.5	1	16.3	12×2.5	1	16.7	14×2.5	1	17.5
10×2.5	2	16.6	12×2.5	2	17.1	14×2.5	2	17.9
10×4	1	18.0	12×4	1	18.5	14×4	1	19.8
10×4	2	18.6	12×4	2	19.1	14×4	2	20.4
10×6	1	20.3	12×6	1	20.9	14×6	1	21.9
10×6	2	21.1	12×6	2	21.7	14×6	2	22.8
10×10	2	24.5	19×0.75	1	14.5	24×0.75	1	16.6
16×0.75	1	13.9	19×0.75	2	15.0	24×0.75	2	17.1
16×0.75	2	14.3	19×1.0	1	15.2	24×1.0	1	17.4
16×1.0	1	14.5	19×1.0	2	15.7	24×1.0	2	18.0
16×1.0	2	15.0	19×1.5	1	16.4	24×1.5	1	18.9
16×1.5	1	15.7	19×1.5	2	16.9	24×1.5	2	19.8
16×1.5	2	16.1	19×2.5	1	19.7	24×2.5	1	22.7
16×2.5	1	18.4	19×2.5	2	20.2	24×2.5	2	23.3
16×2.5	2	18.8	30×0.75	1	17.4	37×0.75	1	18.6
27×0.75	1	16.9	30×0.75	2	18.0	37×0.75	2	19.7
27×0.75	2	17.5	30×1.0	1	18.3	37×1.0	1	20.0
27×1.0	1	17.7	30×1.0	2	18.9	37×1.0	2	20.7
27×1.0	2	18.3	30×1.5	1	20.2	37×1.5	1	21.7
27×1.5	1	19.2	30×1.5	2	20.9	37×1.5	2	22.4
27×1.5	2	20.2	30×2.5	1	23.9	37×2.5	1	25.7
27×2.5	1	23.1	30×2.5	2	24.6	37×2.5	2	26.4
27×2.5	2	23.7	48×0.75	1	21.4	52×0.75	1	21.9
44×0.75	1	21.1	48×0.75	2	22.2	52×0.75	2	22.7
44×0.75	2	21.8	48×1.0	1	22.5	52×1.0	1	23.1
44×1.0	1	22.2	48×1.0	2	23.3	52×1.0	2	23.9
44×1.0	2	23.0	48×1.5	1	24.5	52×1.5	1	25.1
44×1.5	1	24.1	48×1.5	2	25.3	52×1.5	2	25.9
44×1.5	2	24.9	48×2.5	1	29.8	52×2.5	1	30.6
44×2.5	1	29.3	48×2.5	2	30.6	52×2.5	2	31.4
44×2.5	2	30.1	61×1.0	1	24.2	61×1.5	1	26.3
61×0.75	1	22.9	61×1.0	2	25.1	61×1.5	2	27.2
61×0.75	2	23.8	61×2.5	1	32.0	61×2.5	2	32.9

KYJVP型铜芯交联聚乙烯绝缘聚氯乙烯护套编织屏蔽控制电缆
Control cable with Cu conductor, XLPE insulation, PVC sheath and copper wire braided shielding (KYJVP)

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter
2×0.75	1	8.7	2×0.75	2	8.9	3×0.75	1	9.1
2×1.0	1	9.0	2×1.0	2	9.2	3×1.0	1	9.4
2×1.5	1	9.5	2×1.5	2	9.7	3×1.5	1	9.9
2×2.5	1	10.6	2×2.5	2	10.8	3×2.5	1	11.1
2×4	1	11.5	2×4	2	11.8	3×4	1	12.1
2×6	1	12.5	2×6	2	13.4	3×6	1	13.7
/	/	/	2×10	2	15.4	/	/	/
3×0.75	2	9.3	4×0.75	1	9.6	4×0.75	2	9.8
3×1.0	2	9.6	4×1.0	1	9.9	4×1.0	2	10.2
3×1.5	2	10.1	4×1.5	1	10.5	4×1.5	2	10.8
3×2.5	2	11.3	4×2.5	1	11.9	4×2.5	2	12.2
3×4	2	12.4	4×4	1	13.5	4×4	2	13.9
3×6	2	14.1	4×6	1	14.9	4×6	2	15.4
3×10	2	16.2	/	/	/	4×10	2	17.5
5×0.75	1	10.2	5×0.75	2	10.4	7×0.75	1	10.8
5×1.0	1	10.6	5×1.0	2	10.8	7×1.0	1	11.2
5×1.5	1	11.2	5×1.5	2	11.5	7×1.5	1	11.9
5×2.5	1	13.3	5×2.5	2	13.6	7×2.5	1	14.2
5×4	1	14.7	5×4	2	15.1	7×4	1	15.8
5×6	1	16.0	5×6	2	16.6	7×6	1	17.2
/	/	/	5×10	2	18.9	/	/	/
7×0.75	2	11.1	8×0.75	1	11.7	8×0.75	2	12.1
7×1.0	2	11.5	8×1.0	1	12.2	8×1.0	2	12.5
7×1.5	2	12.2	8×1.5	1	13.6	8×1.5	2	14.0
7×2.5	2	14.8	8×2.5	1	15.8	8×2.5	2	16.2
7×4	2	16.2	8×4	1	17.3	8×4	2	17.8
7×6	2	17.8	8×6	1	19.4	8×6	2	20.0
7×10	2	20.8	/	/	/	8×10	2	23.3
10×0.75	1	13.4	10×0.75	2	13.8	12×0.75	1	13.8
10×1.0	1	14.0	10×1.0	2	14.4	12×1.0	1	14.4
10×1.5	1	15.2	10×1.5	2	15.6	12×1.5	1	15.6
10×2.5	1	17.5	10×2.5	2	17.9	12×2.5	1	18.0
10×4	1	19.6	10×4	2	20.2	12×4	1	20.2
10×6	1	21.5	10×6	2	22.3	12×6	1	22.2
12×0.75	2	14.2	14×0.75	1	14.3	14×0.75	2	14.9
12×1.0	2	15.0	14×1.0	1	15.2	14×1.0	2	15.6
12×1.5	2	16.0	14×1.5	1	16.2	14×1.5	2	16.6
12×2.5	2	18.4	14×2.5	1	18.8	14×2.5	2	19.6
12×4	2	20.8	14×4	1	21.0	14×4	2	21.7
12×6	2	23.0	14×6	1	23.2	14×6	2	24.0
16×0.75	1	15.1	16×0.75	2	15.6	19×0.75	1	15.7
16×1.0	1	15.8	16×1.0	2	16.2	19×1.0	1	16.5
16×1.5	1	16.9	16×1.5	2	17.4	19×1.5	1	17.7
16×2.5	1	20.0	16×2.5	2	20.5	19×2.5	1	20.9
19×0.75	2	16.2	24×0.75	1	17.8	24×0.75	2	18.4
19×1.0	2	16.9	24×1.0	1	18.7	24×1.0	2	19.6
19×1.5	2	18.1	24×1.5	1	20.5	24×1.5	2	21.1
19×2.5	2	21.4	24×2.5	1	23.9	24×2.5	2	24.5
27×0.75	1	18.1	27×0.75	2	18.7	30×0.75	1	18.6
27×1.0	1	19.4	27×1.0	2	20.0	30×1.0	1	20.0
27×1.5	1	20.9	27×1.5	2	21.4	30×1.5	1	21.5
27×2.5	1	24.4	27×2.5	2	25.2	30×2.5	1	25.4
30×0.75	2	19.6	37×0.75	1	20.2	37×0.75	2	20.9
30×1.0	2	20.6	37×1.0	1	21.3	37×1.0	2	21.9
30×1.5	2	22.1	37×1.5	1	22.9	37×1.5	2	23.6
30×2.5	2	26.0	37×2.5	1	27.2	37×2.5	2	27.9
44×0.75	1	22.3	44×0.75	2	23.1	48×0.75	1	22.6
44×1.0	1	23.5	44×1.0	2	24.2	48×1.0	1	23.8
44×1.5	1	25.6	44×1.5	2	26.4	48×1.5	1	26.0
44×2.5	1	30.8	44×2.5	2	31.6	48×2.5	1	31.3
48×0.75	2	23.4	52×0.75	1	23.2	52×0.75	2	24.0
48×1.0	2	24.6	52×1.0	1	24.4	52×1.0	2	25.4
48×1.5	2	26.8	52×1.5	1	26.6	52×1.5	2	27.4
48×2.5	2	32.0	52×2.5	1	32.0	52×2.5	2	32.9
61×0.75	1	24.4	61×1.0	1	25.9	61×1.5	1	28.6
61×2.5	1	33.8	61×0.75	2	25.5	61×1.0	2	26.8
61×1.5	2	29.5	61×2.5	2	35.1	/	/	/

KYJVP2(P3)型铜芯交联聚乙烯绝缘聚氯乙烯护套铜带(铝塑复合带)屏蔽控制电缆
Control cable with Cu conductor, XLPE insulation, PVC sheath and Copper tape /Aluminum polyester tape shielding (KYJV P2/P3)

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter
4×2.5	1	11.4	5×2.5	1	12.2	7×0.75	1	10.3
4×4	1	12.4	5×4	1	14.0	7×1.0	1	10.7
4×6	1	14.2	5×6	1	15.3	7×1.5	1	11.4
4×10	2	16.7	5×10	2	18.1	7×2.5	1	13.7
8×0.75	1	11.2	10×0.75	1	12.3	7×4	1	15.0
8×1.0	1	11.7	10×1.0	1	13.5	7×6	1	16.5
8×1.5	1	12.5	10×1.5	1	14.4	7×10	2	20.0
8×2.5	1	15.1	10×2.5	1	16.7	12×0.75	1	13.2
8×4	1	16.6	10×4	1	18.5	12×1.0	1	13.8
8×6	1	18.2	10×6	1	20.8	12×1.5	1	14.8
8×10	2	22.3	10×10	2	25.0	12×2.5	1	17.2
14×0.75	1	13.8	16×0.75	1	14.3	12×4	1	19.4
14×1.0	1	14.4	16×1.0	1	15.0	12×6	1	21.4
14×1.5	1	15.4	16×1.5	1	16.2	19×0.75	1	15.0
14×2.5	1	18.0	16×2.5	1	18.9	19×1.0	1	15.7
14×4	1	20.3	27×0.75	1	17.3	19×1.5	1	16.9
14×6	1	22.4	27×1.0	1	18.2	19×2.5	1	20.2
24×0.75	1	17.0	27×1.5	1	20.1	30×0.75	1	17.9
24×1.0	1	17.9	27×2.5	1	23.6	30×1.0	1	18.8
24×1.5	1	19.7	44×0.75	1	21.5	30×1.5	1	20.7
24×2.5	1	23.2	44×1.0	1	22.7	30×2.5	1	24.4
37×0.75	1	19.5	44×1.5	1	24.6	48×0.75	1	21.9
37×1.0	1	20.5	44×2.5	1	29.8	48×1.0	1	23.0
37×1.5	1	22.2	52×0.75	1	22.4	48×1.5	1	25.0
37×2.5	1	26.2	52×1.0	1	23.6	48×2.5	1	30.3
52×1.5	1	25.6	61×1.5	1	27.1	61×0.75	1	23.6
52×2.5	1	31.0	61×2.5	1	32.8	61×1.0	1	24.9

KYJV22型铜芯交联聚乙烯绝缘聚氯乙烯护套铜带铠装控制电缆
Control cable with Cu conductor, XLPE insulation, PVC sheath and steel tape armored (KYJV 22)

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter
4×2.5	1	13.9	5×2.5	1	14.7	7×0.75	1	12.2
4×4	1	14.9	5×4	1	15.9	7×1.0	1	12.6
4×6	1	16.1	5×6	1	17.2	7×1.5	1	13.9
4×10	2	18.6	5×10	2	20.4	7×2.5	1	15.6
8×0.75	1	13.7	10×0.75	1	14.8	7×4	1	16.9
8×1.0	1	14.2	10×1.0	1	15.4	7×6	1	18.4
8×1.5	1	15.0	10×1.5	1	16.4	7×10	2	21.9
8×2.5	1	17.0	10×2.5	1	18.7	12×0.75	1	15.2
8×4	1	18.5	10×4	1	20.8	12×1.0	1	15.8
8×6	1	20.5	10×6	1	22.7	12×1.5	1	16.8
8×10	2	24.2	10×10	2	27.3	12×2.5	1	19.1
14×0.75	1	15.7	16×0.75	1	16.3	12×4	1	21.3
14×1.0	1	16.3	16×1.0	1	16.9	12×6	1	23.3
14×1.5	1	17.4	16×1.5	1	18.1	19×0.75	1	16.9
14×2.5	1	20.3	16×2.5	1	21.2	19×1.0	1	17.6
14×4	1	22.2	27×0.75	1	19.6	19×1.5	1	18.8
14×6	1	24.3	27×1.0	1	20.5	19×2.5	1	22.1
24×0.75	1	19.0	27×1.5	1	22.0	30×0.75	1	20.2
24×1.0	1	20.2	27×2.5	1	25.5	30×1.0	1	21.1
24×1.5	1	21.6	44×0.75	1	23.5	30×1.5	1	22.6
24×2.5	1	25.1	44×1.0	1	24.6	30×2.5	1	26.7
37×0.75	1	21.4	44×1.5	1	26.9	48×0.75	1	23.8
37×1.0	1	22.4	44×2.5	1	32.1	48×1.0	1	24.9
37×1.5	1	24.1	52×0.75	1	24.3	48×1.5	1	27.3
37×2.5	1	29.1	52×1.0	1	25.5	48×2.5	1	32.6
52×1.5	1	27.9	52×2.5	1	33.7	61×0.75	1	25.5
61×1.0	1	27.2	61×1.5	1	29.9	61×2.5	1	36.7

KYJVP2-22型铜芯交联聚乙烯绝缘聚氯乙烯护套铜带屏蔽钢带铠装控制电缆
Control cable with Cu conductor, XLPE insulation, PVC sheath , Copper tape shielding and steel tape armored
(KYJV P2-22)

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter
4×2.5	1	14.7	5×2.5	1	15.5	7×0.75	1	13.5
4×4	1	15.7	5×4	1	14.7	7×1.0	1	14.0
4×6	1	16.9	5×6	1	18.0	7×1.5	1	14.7
4×10	2	19.8	5×10	2	21.2	7×2.5	1	16.4
8×0.75	1	14.5	10×0.75	1	15.6	7×4	1	17.7
8×1.0	1	15.0	10×1.0	1	16.2	7×6	1	19.1
8×1.5	1	15.8	10×1.5	1	17.1	7×10	2	22.2
8×2.5	1	17.8	10×2.5	1	19.8	12×0.75	1	15.9
8×4	1	19.6	10×4	1	21.5	12×1.0	1	16.5
8×6	1	21.8	10×6	1	23.5	12×1.5	1	17.5
8×10	2	24.9	10×10	2	28.1	12×2.5	1	20.3
14×0.75	1	16.4	16×0.75	1	17.0	12×4	1	22.1
14×1.0	1	17.1	16×1.0	1	17.7	12×6	1	24.1
14×1.5	1	18.1	16×1.5	1	18.8	19×0.75	1	17.7
14×2.5	1	21.1	16×2.5	1	21.9	19×1.0	1	18.4
14×4	1	23.0	27×0.75	1	20.4	19×1.5	1	20.0
14×6	1	25.1	27×1.0	1	21.3	19×2.5	1	22.8
24×0.75	1	20.1	27×1.5	1	22.8	30×0.75	1	21.0
24×1.0	1	21.0	27×2.5	1	26.7	30×1.0	1	21.9
24×1.5	1	22.4	44×0.75	1	24.2	30×1.5	1	23.4
24×2.5	1	25.9	44×1.0	1	25.4	30×2.5	1	27.5
37×0.75	1	22.2	44×1.5	1	27.7	48×0.75	1	24.5
37×1.0	1	23.2	44×2.5	1	32.9	48×1.0	1	25.7
37×1.5	1	24.9	52×0.75	1	25.1	48×1.5	1	28.1
37×2.5	1	29.8	52×1.0	1	26.7	48×2.5	1	33.3
52×1.5	1	29.3	52×2.5	1	35.6	61×0.75	1	26.7
61×1.0	1	28.0	61×1.5	1	30.7	61×2.5	1	37.4

KYJV32型铜芯交联聚乙烯绝缘聚氯乙烯护套钢丝铠装控制电缆
Control cable with Cu conductor, XLPE insulation, PVC sheath and steel wire armored (KYJV 32)

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter
4×4	1	16.6	5×4	1	17.5	7×1.5	1	14.7
4×6	1	17.7	5×6	1	18.8	7×2.5	1	17.3
4×10	2	20.7	5×10	2	22.7	7×4	1	18.6
8×1.5	1	16.6	10×1.5	1	18.0	7×6	1	20.4
8×2.5	1	18.6	10×2.5	1	20.7	7×10	2	24.2
8×4	1	20.5	10×4	1	23.1	12×1.5	1	18.4
8×6	1	22.8	10×6	1	25.0	12×2.5	1	21.8
8×10	2	26.5	10×10	2	30.2	12×4	1	23.6
14×1.5	1	19.0	16×1.5	1	20.1	12×6	1	25.6
14×2.5	1	22.6	16×2.5	1	23.5	19×0.75	1	18.5
14×4	1	24.5	27×0.75	1	21.9	19×1.0	1	19.2
14×6	1	26.6	27×1.0	1	22.8	19×1.5	1	20.8
24×0.75	1	21.0	27×1.5	1	24.8	19×2.5	1	24.4
24×1.0	1	22.5	27×2.5	1	27.9	30×0.75	1	22.5
24×1.5	1	23.9	44×0.75	1	25.8	30×1.0	1	23.4
24×2.5	1	27.4	44×1.0	1	26.9	30×1.5	1	24.9
37×0.75	1	23.7	44×1.5	1	29.8	30×2.5	1	29.6
37×1.0	1	24.7	44×2.5	1	35.6	48×0.75	1	26.1
37×1.5	1	26.4	52×0.75	1	26.1	48×1.0	1	27.3
37×2.5	1	31.4	52×1.0	1	27.3	48×1.5	1	30.2
52×1.5	1	30.2	52×2.5	1	36.0	48×2.5	1	36.0
61×0.75	1	27.8	61×1.0	1	30.1	61×1.5	1	33.0
61×2.5	1	38.6	/	/	/	/	/	/

聚氯乙烯绝缘和护套控制电缆

Control Cable with PVC Insulation and Sheath

本产品适用于交流额定电压450/750V及以下控制、监控回路及保护线路等场合使用。

It is used for supervising and controlling return circuit and protective circuit of A.C rated voltage of 450/750V or lower.

一、产品执行标准 GB/T 9330.2-2008

Executive standard: GB/T 9330.2-2008

二、使用特性

- 1、电缆导体的长期允许工作温度为70℃。
- 2、电缆的敷设温度应不低于0℃，推荐的允许弯曲半径：
无铠装层的电缆，应不小于电缆外径的6倍。
有铠装或铜带屏蔽结构的电缆，应不小于电缆外径的12倍。
有屏蔽层结构的软电缆，应不小于电缆外径的6倍。

Working Condition

- 1: Long term working temperature of conductor allowed by cable is 70℃.
- 2: Environment temperature for installation is no less than 0℃.
Min. bending radius of cable is no less than 6 times that of cable OD for cable without armoring, 12 times for cable with armoring or metallic tape shielding and 6 times for soft cable with shielding structure.

三、电缆型号及主要使用范围

Type, Description and Application Occasion

型号 Type	名称 Description	主要使用范围 Application occasion
KVV	铜芯聚氯乙烯绝缘聚氯乙烯护套控制电缆 Control cable with Cu core, PVC insulation and sheath	敷设在室内、电缆沟、管道固定场合 To be fixedly laid indoor, in cable furrow, pipe
KVVP	铜芯聚氯乙烯绝缘聚氯乙烯护套编织屏蔽控制电缆 Control cable with Cu core, PVC insulation and sheath, braided shielding	敷设在室内、电缆沟、管道等要求屏蔽的固定场合 To be fixedly laid indoor, in cable furrow, pipe with demand on shielding
KVVP2	铜芯聚氯乙烯绝缘聚氯乙烯护套铜带屏蔽控制电缆 Control cable with Cu core, PVC insulation and sheath, copper tape shielding	敷设在室内、电缆沟、管道等要求屏蔽的固定场合 To be fixedly laid indoor, in cable furrow, pipe with demand on shielding
KVVP3	铜芯聚氯乙烯绝缘聚氯乙烯护套铝塑复合带屏蔽控制电缆 Control cable with Cu conductor, PVC insulation, PVC sheath and Aluminum polyester tape shielding	敷设在室内、电缆沟、管道等要求屏蔽的固定场合 To be fixedly laid indoor, in cable furrow, pipe with demand on shielding
KVV22	铜芯聚氯乙烯绝缘聚氯乙烯护套钢带铠装控制电缆 Control cable with Cu core, PVC insulation and sheath, steel tape armoring	敷设在室内、电缆沟、管道直埋等能承受较大机械外力的固定场合 To be fixedly laid indoor, in cable furrow, pipe, underground with demand on enduring strong mechanical force
KVVP2-22	铜芯聚氯乙烯绝缘聚氯乙烯护套铜带屏蔽钢带铠装控制电缆 Control cable with Cu conductor, PVC insulation, PVC sheath and steel tape armored	敷设在室内、电缆沟、管道直埋等要求屏蔽并能承受较大机械外力的固定场合 To be laid indoor, cable furrow, pipe, underground and as like set places with demand on enduring strong mechanical force.
KVV32	铜芯聚氯乙烯绝缘聚氯乙烯护套细钢丝铠装控制电缆 Control cable with Cu core, PVC insulation and sheath, steel wire armoring	敷设在室内、电缆沟、管道竖井等能承受较大机械拉力等固定场合 To be fixedly laid indoor, in cable furrow, pipe, shaft with demand on enduring strong mechanical force
KVVR	铜芯聚氯乙烯绝缘聚氯乙烯护套控制软电缆 Control soft cable with Cu core, PVC insulation and sheath	敷设在室内移动要求柔软等场合 To be laid indoor with demand on mobility and softness
KVVRP	铜芯聚氯乙烯绝缘聚氯乙烯护套编织屏蔽控制软电缆 Control soft cable with Cu core, PVC insulation and sheath, braiding shielding	敷设在室内移动要求柔软、屏蔽等场合 To be laid indoor with demand on shielding and softness

注：①用户需要阻燃型产品，上述型号均可生产供货，只要在型号前加“ZA-、ZB-、ZC-”，如：ZA-KVV型等。
②根据用户需要，还可提供生产未列出的型号的产品，如：KVVP32、KVVP2-32等。

Note: Prefix ZA-, ZB-, ZC is added to the original type for indication of flame resistance cable, for example, ZA-KYJV.
We also produce unlisted type of cables as required, such as KVVP32, KVVP2-32 and so on.

各型号规格范围 Various Specification Range

型号 Type	额定 电压V Rated voltage	导体标称截面mm ² Nominal cross section of conductor area						
		0.5	0.75	1.0	1.5	2.5	4	6
		芯数 core number						
KVV KVVP	450/750	--	2~61			2~14		2~10
KVVP2 KVVP3		--	4~61			4~14		4~10
KVV22		--	7~61	4~61		4~14		4~10
KVVP2-22		--	7~61	4~61		4~14		4~10
KVV32		--	19~61	7~61		4~14		4~10
KVVR		4~61				--	--	--
KVVRP		4~61		4~48		--	--	--

注：推荐的芯数系列为：2、3、4、5、7、8、10、12、14、16、19、24、27、30、37、44、48、52和61芯。

Note: Cores recommended: 2,3,4,5,7,8,10,12,14,16,19,24,27,30,37,44,48, 52 or 61.

四、典型电缆结构及外形尺寸

Typical Cable Structure and External Dimension

KVV型铜芯聚氯乙烯绝缘及护套控制电缆
KVV type control cable with Cu core, PVC insulation and sheath

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70°C最小绝缘电阻MΩ.km Min insulated resistance at 70°C	芯数×标称截面 mm ² No.*nominal cross section area	导体种类 Conductor category	外径 Mm Outer diameter	70°C最小绝缘电阻MΩ.km insulated resistance at 70°C
2×0.75	1	7.7	0.012	3×0.75	1	8.1	0.012
2×0.75	2	7.9	0.014	3×0.75	2	8.3	0.014
2×1.0	1	8.0	0.011	3×1.0	1	8.4	0.011
2×1.0	2	8.2	0.013	3×1.0	2	8.6	0.013
2×1.5	1	8.9	0.011	3×1.5	1	9.3	0.011
2×1.5	2	9.1	0.010	3×1.5	2	9.5	0.010
2×2.5	1	10.0	0.010	3×2.5	1	10.5	0.010
2×2.5	2	10.2	0.009	3×2.5	2	10.7	0.009
2×4	1	10.9	0.0085	3×4	1	11.5	0.0085
2×4	2	11.2	0.0070	3×4	2	11.8	0.0077
2×6	1	11.8	0.0070	3×6	1	12.5	0.0070
2×6	2	12.2	0.0065	3×6	2	12.9	0.0065
2×10	2	15.3	0.0065	3×10	2	16.2	0.0065
4×0.75	1	8.6	0.012	5×0.75	1	9.2	0.012
4×0.75	2	8.8	0.014	5×0.75	2	9.4	0.014
4×1.0	1	8.9	0.011	5×1.0	1	9.6	0.011
4×1.0	2	9.2	0.013	5×1.0	2	9.8	0.013
4×1.5	1	10.0	0.011	5×1.5	1	10.7	0.011
4×1.5	2	10.2	0.010	5×1.5	2	11.0	0.010
4×2.5	1	11.4	0.010	5×2.5	1	12.3	0.010
4×2.5	2	11.6	0.009	5×2.5	2	12.5	0.009
4×4	1	12.4	0.0085	5×4	1	14.0	0.0085
4×4	2	12.8	0.0077	5×4	2	14.4	0.0077
4×6	1	14.2	0.0070	5×6	1	15.3	0.0070
4×6	2	14.6	0.0065	5×6	2	15.8	0.0065
4×10	2	17.6	0.0065	5×10	2	19.2	0.0065
7×0.75	1	9.8	0.012	8×0.75	1	10.7	0.012
7×0.75	2	10.1	0.014	8×0.75	2	11.0	0.014
7×1.0	1	10.2	0.011	8×1.0	1	11.2	0.011
7×1.0	2	10.5	0.013	8×1.0	2	11.5	0.013
7×1.5	1	11.5	0.011	8×1.5	1	12.7	0.011
7×1.5	2	11.8	0.010	8×1.5	2	13.6	0.010
7×2.5	1	13.8	0.010	8×2.5	1	15.3	0.010
7×2.5	2	14.1	0.009	8×2.5	2	15.6	0.009
7×4	1	15.1	0.0085	8×4	1	16.8	0.0085
7×4	2	15.5	0.0077	8×4	2	17.3	0.0077
7×6	1	16.6	0.0070	8×6	1	18.4	0.0070
7×6	2	17.1	0.0065	8×6	2	19.1	0.0065
7×10	2	21.3	0.0065	8×10	2	23.8	0.0065

芯数×标称 截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电 阻MΩ.km Min. insulated resistance at 70℃	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电 阻MΩ.km Min insulated resistance at 70℃
10×0.75	1	11.8	0.012	12×0.75	1	12.2	0.012
10×0.75	2	12.2	0.014	12×0.75	2	12.6	0.014
10×1.0	1	12.4	0.011	12×1.0	1	12.8	0.011
10×1.0	2	12.8	0.013	12×1.0	2	13.8	0.013
10×1.5	1	14.7	0.011	12×1.5	1	15.2	0.011
10×1.5	2	15.1	0.010	12×1.5	2	15.5	0.010
10×2.5	1	17.0	0.010	12×2.5	1	17.5	0.010
10×2.5	2	17.4	0.009	12×2.5	2	17.9	0.009
10×4	1	18.8	0.0085	12×4	1	19.7	0.0085
10×4	2	19.7	0.0077	12×4	2	20.3	0.0077
10×6	1	21.1	0.0070	12×6	1	21.7	0.0070
10×6	2	21.8	0.0065	12×6	2	22.5	0.0065
10×10	2	26.8	0.0065	/	/	/	/
14×0.75	1	12.7	0.012	16×0.75	1	13.9	0.012
14×0.75	2	13.7	0.014	16×0.75	2	14.3	0.014
14×1.0	1	13.9	0.011	16×1.0	1	14.5	0.011
14×1.0	2	14.3	0.013	16×1.0	2	15.0	0.013
14×1.5	1	15.8	0.011	16×1.5	1	16.6	0.011
14×1.5	2	16.2	0.010	16×1.5	2	17.0	0.010
14×2.5	1	18.4	0.010	16×2.5	1	19.3	0.010
14×2.5	2	18.8	0.009	16×2.5	2	20.1	0.009
14×4	1	20.6	0.0085	24×0.75	1	16.6	0.012
14×4	2	21.3	0.0077	24×0.75	2	17.1	0.014
14×6	1	22.8	0.0070	24×1.0	1	17.4	0.011
14×6	2	23.6	0.0065	24×1.0	2	18.0	0.013
19×0.75	1	14.5	0.012	24×1.5	1	20.4	0.011
19×0.75	2	15.0	0.014	24×1.5	2	21.0	0.010
19×1.0	1	15.2	0.011	24×2.5	1	23.8	0.010
19×1.0	2	15.7	0.013	24×2.5	2	24.4	0.009
19×1.5	1	17.4	0.011	30×0.75	1	17.4	0.012
19×1.5	2	17.8	0.010	30×0.75	2	18.0	0.014
19×2.5	1	20.6	0.010	30×1.0	1	18.5	0.011
19×2.5	2	21.1	0.009	30×1.0	2	19.5	0.013
27×0.75	1	16.9	0.012	30×1.5	1	21.5	0.011
27×0.75	2	17.5	0.014	30×1.5	2	22.5	0.010
27×1.0	1	17.7	0.011	30×2.5	1	24.9	0.010
27×1.0	2	18.3	0.013	30×2.5	2	26.3	0.009
27×1.5	1	20.8	0.011	44×0.75	1	21.1	0.012
27×1.5	2	21.4	0.010	44×0.75	2	21.8	0.014
27×2.5	1	24.3	0.010	44×1.0	1	22.2	0.011
27×2.5	2	24.9	0.009	44×1.0	2	23.0	0.013
37×0.75	1	18.5	0.012	44×1.5	1	25.7	0.011
37×0.75	2	19.8	0.014	44×1.5	2	26.4	0.010
37×1.0	1	20.0	0.011	44×2.5	1	30.9	0.010
37×1.0	2	20.7	0.013	44×2.5	2	31.6	0.009
37×1.5	1	23.0	0.011	52×0.75	1	21.9	0.012
37×1.5	2	23.7	0.010	52×0.75	2	22.7	0.014
37×2.5	1	27.1	0.010	52×1.0	1	23.1	0.011
37×2.5	2	27.7	0.009	52×1.0	2	23.9	0.013
48×0.75	1	21.4	0.012	52×1.5	1	26.8	0.011
48×0.75	2	22.2	0.014	52×1.5	2	27.6	0.010
48×1.0	1	22.5	0.011	52×2.5	1	32.2	0.010
48×1.0	2	23.3	0.013	52×2.5	2	33.0	0.009
48×1.5	1	26.1	0.011	61×0.75	1	22.9	0.012
48×1.5	2	26.9	0.010	61×0.75	2	23.8	0.014
48×2.5	1	31.3	0.010	61×1.0	1	24.2	0.011
48×2.5	2	32.1	0.009	61×1.0	2	25.1	0.013
61×1.5	1	28.0	0.011	61×2.5	1	34.1	0.010
61×1.5	2	29.5	0.010	61×2.5	2	35.0	0.009

KVVP型铜芯聚氯乙烯绝缘及护套编织屏蔽控制电缆
KVVP type control cable with Cu core, PVC insulation and sheath, braided shielding

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘 电阻MΩ.km Min insulated resistance at 70℃	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电 阻MΩ.km Min insulated resistance at 70℃
2×0.75	1	8.7	0.012	2×0.75	2	8.9	0.014
2×1.0	1	9.0	0.011	2×1.0	2	9.2	0.013
2×1.5	1	9.9	0.011	2×1.5	2	10.1	0.010
2×2.5	1	11.0	0.010	2×2.5	2	11.2	0.009
2×4	1	11.9	0.0085	2×4	2	12.2	0.0077
2×6	1	12.9	0.0070	2×6	2	13.8	0.0065
/	/	/	/	2×10	2	16.6	0.0065
3×0.75	1	9.1	0.012	3×0.75	2	9.3	0.014
3×1.0	1	9.4	0.011	3×1.0	2	9.6	0.013
3×1.5	1	10.3	0.011	3×1.5	2	10.5	0.010
3×2.5	1	11.5	0.010	3×2.5	2	11.8	0.009
3×4	1	12.5	0.0085	3×4	2	12.8	0.0077
3×6	1	14.1	0.0070	3×6	2	14.7	0.0065
/	/	/	/	3×10	2	17.4	0.0065
4×0.75	1	9.6	0.012	4×0.75	2	9.8	0.014
4×1.0	1	9.9	0.011	4×1.0	2	10.2	0.013
4×1.5	1	11.0	0.011	4×1.5	2	11.2	0.010
4×2.5	1	12.4	0.010	4×2.5	2	12.6	0.009
4×4	1	14.0	0.0085	4×4	2	14.6	0.0077
4×6	1	15.4	0.0070	4×6	2	15.9	0.0065
/	/	/	/	4×10	2	18.9	0.0065
5×0.75	1	10.2	0.012	5×0.75	2	10.4	0.014
5×1.0	1	10.6	0.011	5×1.0	2	10.8	0.013
5×1.5	1	11.7	0.011	5×1.5	2	12.0	0.010
5×2.5	1	13.9	0.010	5×2.5	2	14.1	0.009
5×4	1	15.3	0.0085	5×4	2	15.7	0.0077
5×6	1	16.6	0.0070	5×6	2	17.1	0.0065
/	/	/	/	5×10	2	20.8	0.0065
7×0.75	1	10.8	0.012	7×0.75	2	11.1	0.014
7×1.0	1	11.2	0.011	7×1.0	2	11.5	0.013
7×1.5	1	12.5	0.011	7×1.5	2	12.8	0.010
7×2.5	1	15.1	0.010	7×2.5	2	15.4	0.009
7×4	1	16.4	0.0085	7×4	2	16.8	0.0077
7×6	1	17.8	0.0070	7×6	2	18.4	0.0065
/	/	/	/	7×10	2	22.5	0.0065
8×0.75	1	11.7	0.012	8×0.75	2	12.1	0.014
8×1.0	1	12.2	0.011	8×1.0	2	12.5	0.013
8×1.5	1	14.5	0.011	8×1.5	2	14.9	0.010
8×2.5	1	16.5	0.010	8×2.5	2	16.8	0.009
8×4	1	18.0	0.0085	8×4	2	18.5	0.0077
8×6	1	20.0	0.0070	8×6	2	20.7	0.0065
/	/	/	/	8×10	2	25.2	0.0065
10×0.75	1	12.9	0.012	10×0.75	2	13.8	0.014
10×1.0	1	14.0	0.011	10×1.0	2	14.6	0.013
10×1.5	1	16.0	0.011	10×1.5	2	16.4	0.010
10×2.5	1	18.3	0.010	10×2.5	2	18.7	0.009
10×4	1	20.4	0.0085	10×4	2	21.0	0.0077
10×6	1	22.3	0.0070	10×6	2	23.1	0.0065
/	/	/	/	10×10	2	28.9	0.0065
12×0.75	1	13.8	0.012	12×0.75	2	14.2	0.014
12×1.0	1	14.6	0.011	12×1.0	2	15.0	0.013
12×1.5	1	16.4	0.011	12×1.5	2	16.8	0.010
12×2.5	1	18.8	0.010	12×2.5	2	19.2	0.009
12×4	1	21.0	0.0085	12×4	2	21.6	0.0077
12×6	1	23.0	0.0070	12×6	2	23.8	0.0065
14×0.75	1	14.5	0.012	14×0.75	2	14.9	0.014
14×1.0	1	15.2	0.011	14×1.0	2	15.6	0.013
14×1.5	1	17.1	0.011	14×1.5	2	17.5	0.010

14×2.5	1	20.0	0.010	14×2.5	2	20.4	0.009
14×4	1	21.9	0.0085	14×4	2	22.5	0.0077
14×6	1	24.0	0.0070	14×6	2	25.1	0.0065
16×0.75	1	15.1	0.012	16×0.75	2	15.6	0.014
16×1.0	1	15.8	0.011	16×1.0	2	16.2	0.013
16×1.5	1	17.8	0.011	16×1.5	2	18.3	0.010
16×2.5	1	20.9	0.010	16×2.5	2	21.4	0.009
19×0.75	1	15.7	0.012	19×0.75	2	16.2	0.014
19×1.0	1	16.5	0.011	19×1.0	2	16.9	0.013
19×1.5	1	18.6	0.011	19×1.5	2	19.1	0.010
19×2.5	1	21.9	0.010	19×2.5	2	22.4	0.009
24×0.75	1	17.8	0.012	24×0.75	2	18.4	0.014
24×1.0	1	18.7	0.011	24×1.0	2	19.2	0.013
24×1.5	1	21.6	0.011	24×1.5	2	22.2	0.010
24×2.5	1	25.3	0.010	24×2.5	2	25.9	0.009
27×0.75	1	18.1	0.012	27×0.75	2	18.7	0.014
27×1.0	1	19.0	0.011	27×1.0	2	20.0	0.013
27×1.5	1	22.0	0.011	27×1.5	2	22.6	0.010
27×2.5	1	25.8	0.010	27×2.5	2	26.4	0.009
30×0.75	1	18.6	0.012	30×0.75	2	19.3	0.014
30×1.0	1	20.0	0.011	30×1.0	2	20.6	0.013
30×1.5	1	22.7	0.011	30×1.5	2	23.3	0.010
30×2.5	1	26.7	0.010	30×2.5	2	27.3	0.009
37×0.75	1	20.2	0.012	37×0.75	2	20.9	0.014
37×1.0	1	21.3	0.011	37×1.0	2	21.9	0.013
37×1.5	1	24.3	0.011	37×1.5	2	25.2	0.010
37×2.5	1	29.1	0.010	37×2.5	2	29.8	0.009
44×0.75	1	22.3	0.012	44×0.75	2	23.1	0.014
44×1.0	1	23.5	0.011	44×1.0	2	24.2	0.013
44×1.5	1	26.8	0.011	44×1.5	2	27.9	0.010
44×2.5	1	32.0	0.010	44×2.5	2	33.3	0.009
48×0.75	1	22.2	0.012	48×0.75	2	23.4	0.014
48×1.0	1	23.5	0.011	48×1.0	2	24.6	0.013
48×1.5	1	27.1	0.011	48×1.5	2	28.9	0.010
48×2.5	1	32.5	0.010	48×2.5	2	33.6	0.009
52×0.75	1	22.6	0.012	52×0.75	2	23.7	0.014
52×1.0	1	24.3	0.011	52×1.0	2	25.4	0.013
52×1.5	1	27.9	0.011	52×1.5	2	29.6	0.010
52×2.5	1	33.4	0.010	52×2.5	2	35.0	0.009
61×0.75	1	24.0	0.012	61×0.75	2	24.9	0.014
61×1.0	1	25.5	0.011	61×1.0	2	26.5	0.013
61×1.5	1	29.9	0.011	61×1.5	2	30.9	0.010
61×2.5	1	35.7	0.010	61×2.5	2	37.1	0.009

KVVP2(P3)型铜芯聚氯乙烯绝缘及护套铜带(铝塑复合带)屏蔽控制电缆
Control cable with Cu conductor, PVC insulation, PVC sheath and Copper tape /Aluminum polyester tape shielding (KYJV P2/P3)

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电阻 MΩ.km Min insulated resistance at 70℃	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电 阻MΩ.km Min insulated resistance at 70℃
4×0.75	1	9.1	0.012	5×0.75	1	9.6	0.012
4×1.0	1	9.4	0.011	5×1.0	1	10.0	0.011
4×1.5	1	10.5	0.011	5×1.5	1	11.2	0.011
4×2.5	1	11.9	0.010	5×2.5	1	12.8	0.010
4×4	1	13.5	0.0085	5×4	1	14.5	0.0085
4×6	1	14.6	0.0070	5×6	1	15.8	0.0070
4×10	2	18.1	0.0065	5×10	2	20.1	0.0065
7×0.75	1	10.3	0.012	8×0.75	1	11.2	0.012
7×1.0	1	10.7	0.011	8×1.0	1	11.7	0.011
7×1.5	1	12.0	0.011	8×1.5	1	13.8	0.011
7×2.5	1	14.3	0.010	8×2.5	1	15.7	0.010
7×4	1	15.6	0.0085	8×4	1	17.2	0.0085
7×6	1	17.0	0.0070	8×6	1	18.9	0.0070
7×10	2	21.7	0.0065	8×10	2	24.2	0.0065
10×0.75	1	12.3	0.012	10×4	1	19.6	0.0085
10×1.0	1	13.5	0.011	10×6	1	21.5	0.0070
10×1.5	1	15.2	0.011	10×10	2	27.3	0.0065
10×2.5	1	17.5	0.010	/	/	/	/
12×0.75	1	12.7	0.012	14×0.75	1	13.2	0.012
12×1.0	1	13.8	0.011	14×1.0	1	14.4	0.011
12×1.5	1	15.6	0.011	14×1.5	1	16.3	0.011
12×2.5	1	18.0	0.010	14×2.5	1	18.8	0.010
12×4	1	20.2	0.0085	14×4	1	21.1	0.0085
12×6	1	22.2	0.0070	14×6	1	23.2	0.0070
16×0.75	1	14.3	0.012	19×0.75	1	15.0	0.012
16×1.0	1	15.0	0.011	19×1.0	1	15.7	0.011
16×1.5	1	17.1	0.011	19×1.5	1	17.8	0.011
16×2.5	1	20.1	0.010	19×2.5	1	21.1	0.010
24×0.75	1	17.0	0.012	27×0.75	1	17.3	0.012
24×1.0	1	17.9	0.011	27×1.0	1	18.2	0.011
24×1.5	1	20.9	0.011	27×1.5	1	21.3	0.011
24×2.5	1	24.3	0.010	27×2.5	1	24.8	0.010
30×0.75	1	17.9	0.012	37×0.75	1	19.1	0.012
30×1.0	1	18.8	0.011	37×1.0	1	20.5	0.011
30×1.5	1	22.0	0.011	37×1.5	1	23.5	0.011
30×2.5	1	25.6	0.010	37×2.5	1	27.5	0.010
44×0.75	1	21.5	0.012	48×0.75	1	21.9	0.012
44×1.0	1	22.7	0.011	48×1.0	1	23.0	0.011
44×1.5	1	26.2	0.011	48×1.5	1	26.5	0.011
44×2.5	1	31.3	0.010	48×2.5	1	31.8	0.010
52×0.75	1	22.4	0.012	61×0.75	1	23.6	0.012
52×1.0	1	23.6	0.011	61×1.0	1	24.9	0.011
52×1.5	1	27.2	0.011	61×1.5	1	29.4	0.011
52×2.5	1	32.7	0.010	61×2.5	1	34.9	0.010

KVV22型铜芯聚氯乙烯绝缘及护套钢带铠装控制电缆
KVV22 type control cable with Cu core, PVC insulation and sheath, steel tape armoring

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电阻 MΩ.km Min insulated resistance at 70℃	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电阻 MΩ.km Min insulated resistance at 70℃
4×1.5	1	13.0	0.011	5×1.5	1	13.7	0.011
4×2.5	1	14.4	0.010	5×2.5	1	15.3	0.010
4×4	1	15.4	0.0085	5×4	1	16.4	0.0085
4×6	1	16.6	0.0070	5×6	1	17.7	0.0070
4×10	2	20.4	0.0065	5×10	2	22.0	0.0065
7×0.75	1	12.8	0.012	8×0.75	1	13.7	0.012
7×1.0	1	13.2	0.011	8×1.0	1	14.2	0.011
7×1.5	1	14.5	0.011	8×1.5	1	15.7	0.011
7×2.5	1	16.2	0.010	8×2.5	1	17.7	0.010
7×4	1	17.5	0.0085	8×4	1	19.2	0.0085
7×6	1	19.0	0.0070	8×6	1	21.2	0.0070
7×10	2	23.7	0.0065	8×10	2	26.2	0.0065
10×0.75	1	14.8	0.012	14×0.75	1	15.7	0.012
10×1.0	1	15.4	0.011	14×1.0	1	16.3	0.011
10×1.5	1	17.1	0.011	14×1.5	1	18.2	0.011
10×2.5	1	19.8	0.010	14×2.5	1	21.1	0.010
10×4	1	21.5	0.0085	14×4	1	23.0	0.0085
10×6	1	23.5	0.0070	14×6	1	25.2	0.0070
10×10	2	30.2	0.0065	16×0.75	1	16.3	0.012
12×0.75	1	15.1	0.012	16×1.0	1	17.0	0.011
12×1.0	1	15.8	0.011	16×1.5	1	19.0	0.011
12×1.5	1	17.6	0.011	16×2.5	1	22.1	0.010
12×2.5	1	20.3	0.010	19×0.75	1	16.9	0.012
12×4	1	22.1	0.0085	19×1.0	1	17.6	0.011
12×6	1	24.1	0.0070	19×1.5	1	20.2	0.011
/	/	/	/	19×2.5	1	23.0	0.010
24×0.75	1	19.0	0.012	27×0.75	1	19.7	0.012
24×1.0	1	20.2	0.011	27×1.0	1	20.5	0.011
24×1.5	1	22.8	0.011	27×1.5	1	23.2	0.011
24×2.5	1	26.6	0.010	27×2.5	1	27.1	0.010
30×0.75	1	20.2	0.012	37×0.75	1	21.4	0.012
30×1.0	1	21.1	0.011	37×1.0	1	22.4	0.011
30×1.5	1	23.9	0.011	37×1.5	1	25.4	0.011
30×2.5	1	28.0	0.010	37×2.5	1	30.4	0.010
44×0.75	1	23.5	0.012	48×0.75	1	23.8	0.012
44×1.0	1	24.6	0.011	48×1.0	1	25.0	0.011
44×1.5	1	29.0	0.011	48×1.5	1	29.4	0.011
44×2.5	1	34.0	0.010	48×2.5	1	34.5	0.010
52×0.75	1	24.3	0.012	61×0.75	1	25.5	0.012
52×1.0	1	25.5	0.011	61×1.0	1	27.2	0.011
52×1.5	1	30.1	0.011	61×1.5	1	31.7	0.011
52×2.5	1	36.5	0.010	61×2.5	1	38.4	0.010

KVVP2-22型铜芯聚氯乙烯绝缘及护套铜带屏蔽钢带铠装控制电缆
Control cable with Cu conductor, PVC insulation & sheath, Copper tape shielding and steel tape armored (KYJV P2-22)

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电阻 MΩ.km Min insulated resistance at 70℃	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电阻 MΩ.km Min insulated resistance at 70℃
4×1.5	1	13.7	0.011	5×1.5	1	14.5	0.011
4×2.5	1	15.1	0.010	5×2.5	1	16.0	0.010
4×4	1	16.2	0.0085	5×4	1	17.2	0.0085
4×6	1	17.3	0.0070	5×6	1	18.5	0.0070
4×10	2	21.2	0.0065	5×10	2	22.8	0.0065
7×0.75	1	13.5	0.012	8×0.75	1	14.5	0.012
7×1.0	1	14.0	0.011	8×1.0	1	15.0	0.011
7×1.5	1	15.3	0.011	8×1.5	1	16.4	0.011
7×2.5	1	17.0	0.010	8×2.5	1	18.4	0.010
7×4	1	18.3	0.0085	8×4	1	20.3	0.0085
7×6	1	20.1	0.0070	8×6	1	22.0	0.0070
7×10	2	24.4	0.0065	8×10	2	27.3	0.0065
10×0.75	1	15.6	0.012	10×4	1	22.3	0.0085
10×1.0	1	16.2	0.011	10×6	1	24.2	0.0070
10×1.5	1	17.9	0.011	10×10	2	31.0	0.0065
10×2.5	1	20.6	0.010	/	/	/	/
12×0.75	1	15.9	0.012	14×0.75	1	16.4	0.012
12×1.0	1	16.5	0.011	14×1.0	1	17.1	0.011
12×1.5	1	18.3	0.011	14×1.5	1	19.4	0.011
12×2.5	1	21.1	0.010	14×2.5	1	21.9	0.010
12×4	1	22.9	0.0085	14×4	1	23.8	0.0085
12×6	1	24.9	0.0070	14×6	1	25.9	0.0070
16×0.75	1	17.0	0.012	19×0.75	1	17.7	0.012
16×1.0	1	17.7	0.011	19×1.0	1	18.4	0.011
16×1.5	1	20.1	0.011	19×1.5	1	20.9	0.011
16×2.5	1	22.8	0.010	19×2.5	1	23.8	0.010
24×0.75	1	20.1	0.012	27×0.75	1	20.4	0.012
24×1.0	1	21.0	0.011	27×1.0	1	21.3	0.011
24×1.5	1	23.6	0.011	27×1.5	1	24.0	0.011
24×2.5	1	27.4	0.010	27×2.5	1	27.9	0.010
30×0.75	1	21.0	0.012	37×0.75	1	22.2	0.012
30×1.0	1	21.9	0.011	37×1.0	1	23.2	0.011
30×1.5	1	24.6	0.011	37×1.5	1	26.6	0.011
30×2.5	1	29.3	0.010	37×2.5	1	31.2	0.010
44×0.75	1	24.2	0.012	48×0.75	1	24.5	0.012
44×1.0	1	25.4	0.011	48×1.0	1	25.7	0.011
44×1.5	1	29.8	0.011	48×1.5	1	30.2	0.011
44×2.5	1	34.8	0.010	48×2.5	1	36.4	0.010
52×0.75	1	25.9	0.012	61×0.75	1	26.7	0.012
52×1.0	1	27.6	0.011	61×1.0	1	28.0	0.011
52×1.5	1	31.9	0.011	61×1.5	1	32.4	0.011
52×2.5	1	38.5	0.010	61×2.5	1	39.2	0.010

**KVV32型铜芯聚氯乙烯绝缘及护套钢丝铠装控制电缆
Control cable with Cu conductor, PVC insulation, & sheath and steel wire armored (KVV32)**

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电阻 MΩ.km Min insulated resistance at 70℃	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电阻 MΩ.km Min insulated resistance at 70℃
4×4	1	17.0	0.0085	5×4	1	18.0	0.0085
4×6	1	18.2	0.0070	5×6	1	19.7	0.0070
4×10	2	22.7	0.0065	5×10	2	24.3	0.0065
7×1.5	1	16.1	0.011	8×1.5	1	17.3	0.011
7×2.5	1	17.8	0.010	8×2.5	1	19.7	0.010
7×4	1	19.1	0.0085	8×4	1	21.8	0.0085
7×6	1	21.0	0.0070	8×6	1	23.5	0.0070
7×10	2	26.0	0.0065	8×10	2	28.5	0.0065
10×1.5	1	18.8	0.011	10×4	1	23.8	0.0085
10×2.5	1	22.1	0.010	10×6	1	25.8	0.0070
10×10	2	33.3	0.0065	/	/	/	/
12×1.5	1	19.2	0.011	14×1.5	1	20.2	0.011
12×2.5	1	22.6	0.010	14×2.5	1	23.4	0.010
12×4	1	24.4	0.0085	14×4	1	25.3	0.0085
12×6	1	26.4	0.0070	14×6	1	27.5	0.0070
16×1.5	1	21.0	0.011	19×0.75	1	18.5	0.012
16×2.5	1	24.4	0.010	19×1.0	1	19.2	0.011
24×0.75	1	21.0	0.012	19×1.5	1	22.5	0.011
24×1.0	1	22.5	0.011	19×2.5	1	25.3	0.010
24×1.5	1	25.1	0.011	27×0.75	1	21.9	0.012
24×2.5	1	29.5	0.010	27×1.0	1	22.8	0.011
30×0.75	1	22.5	0.012	27×1.5	1	25.5	0.011
30×1.0	1	23.4	0.011	27×2.5	1	30.0	0.010
30×1.5	1	26.2	0.011	37×0.75	1	23.7	0.012
30×2.5	1	30.8	0.010	37×1.0	1	24.7	0.011
44×0.75	1	25.8	0.012	37×1.5	1	27.7	0.011
44×1.0	1	26.9	0.011	37×2.5	1	33.5	0.010
44×1.5	1	31.3	0.011	48×0.75	1	26.1	0.012
44×2.5	1	37.1	0.010	48×1.0	1	27.3	0.011
52×0.75	1	26.1	0.012	48×1.5	1	31.7	0.011
52×1.0	1	27.3	0.011	48×2.5	1	37.6	0.010
52×1.5	1	31.7	0.011	61×0.75	1	27.8	0.012
52×2.5	1	37.6	0.010	61×1.0	1	30.1	0.011
61×1.5	1	35.1	0.011	61×2.5	1	40.3	0.010

KVVR型铜芯聚氯乙烯绝缘及护套控制软电缆
Control soft cable with Cu conductor, PVC insulation& sheath a (KVVR)

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电阻 M.Ω.km Min insulated resistance at 70℃	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电 阻M.Ω.km Min insulated resistance at 70℃
2×0.5	5	7.4	0.013	3×0.5	5	7.8	0.013
2×0.75	5	7.7	0.011	3×0.75	5	8.1	0.011
2×1.0	5	8.0	0.010	3×1.0	5	8.4	0.010
2×1.5	5	8.9	0.010	3×1.5	5	9.3	0.010
2×2.5	5	10.1	0.009	3×2.5	5	10.7	0.009
4×0.5	5	8.3	0.013	5×0.5	5	8.9	0.013
4×0.75	5	8.6	0.011	5×0.75	5	9.3	0.011
4×1.0	5	9.0	0.010	5×1.0	5	9.6	0.010
4×1.5	5	10.0	0.010	5×1.5	5	10.8	0.010
4×2.5	5	11.5	0.009	5×2.5	5	12.5	0.009
7×0.5	5	9.5	0.013	8×0.5	5	10.4	0.013
7×0.75	5	9.9	0.011	8×0.75	5	10.9	0.011
7×1.0	5	10.3	0.010	8×1.0	5	11.4	0.010
7×1.5	5	11.6	0.010	8×1.5	5	13.5	0.010
7×2.5	5	14.1	0.009	8×2.5	5	15.6	0.009
10×0.5	5	11.5	0.013	12×0.5	5	11.9	0.013
10×0.75	5	12.1	0.011	12×0.75	5	12.5	0.011
10×1.0	5	13.3	0.010	12×1.0	5	13.7	0.010
10×1.5	5	15.0	0.010	12×1.5	5	15.4	0.010
10×2.5	5	17.5	0.009	12×2.5	5	18.0	0.009
14×0.5	5	12.4	0.013	16×0.5	5	13.6	0.013
14×0.75	5	13.6	0.011	16×0.75	5	14.2	0.011
14×1.0	5	14.2	0.010	16×1.0	5	14.9	0.010
14×1.5	5	16.1	0.010	16×1.5	5	17.0	0.010
14×2.5	5	18.9	0.009	16×2.5	5	20.3	0.009
19×0.5	5	14.2	0.013	24×0.5	5	16.3	0.013
19×0.75	5	14.9	0.011	24×0.75	5	17.1	0.011
19×1.0	5	15.6	0.010	24×1.0	5	18.0	0.010
19×1.5	5	17.8	0.010	24×1.5	5	21.0	0.010
19×2.5	5	21.3	0.009	24×2.5	5	24.7	0.009
27×0.5	5	16.6	0.013	30×0.5	5	17.1	0.013
27×0.75	5	17.4	0.011	30×0.75	5	18.0	0.011
27×1.0	5	18.3	0.010	30×1.0	5	18.9	0.010
27×1.5	5	21.4	0.010	30×1.5	5	22.1	0.010
27×2.5	5	25.2	0.009	30×2.5	5	26.1	0.009
37×0.5	5	18.3	0.013	44×0.5	5	20.8	0.013
37×0.75	5	19.7	0.011	44×0.75	5	21.9	0.011
37×1.0	5	20.7	0.010	44×1.0	5	23.1	0.010
37×1.5	5	23.7	0.010	44×1.5	5	26.5	0.010
37×2.5	5	28.7	0.009	44×2.5	5	32.1	0.009
48×0.5	5	21.1	0.013	52×0.5	5	21.6	0.013
48×0.75	5	22.2	0.011	52×0.75	5	22.8	0.011
48×1.0	5	23.4	0.010	52×1.0	5	24.0	0.010
48×1.5	5	26.9	0.010	52×1.5	5	27.7	0.010
48×2.5	5	32.6	0.009	52×2.5	5	33.9	0.009
61×0.5	5	22.8	0.013	61×1.5	5	29.9	0.010
61×0.75	5	24.1	0.011	61×2.5	5	35.9	0.009
61×1.0	5	25.4	0.010	/	/	/	/

KVVRP型铜芯聚氯乙烯绝缘及护套编织屏蔽控制软电缆
Control soft cable with Cu conductor, PVC insulation & sheath and copper braided shielding a (KVVRP)

芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电阻 M.Ω.km Min insulated resistance at 70℃	芯数×标称截面 mm ² core No.*nominal cross section area	导体种类 Conductor category	外径mm Outer diameter	70℃最小绝缘电 阻M.Ω.km Min insulated resistance at 70℃
2×0.5	5	8.4	0.013	3×0.5	5	8.8	0.013
2×0.75	5	8.7	0.011	3×0.75	5	9.1	0.011
2×1.0	5	9.0	0.010	3×1.0	5	9.4	0.010
2×1.5	5	9.9	0.010	3×1.5	5	10.3	0.010
2×2.5	5	11.1	0.009	3×2.5	5	11.7	0.009
4×0.5	5	9.3	0.013	5×0.5	5	9.9	0.013
4×0.75	5	9.6	0.011	5×0.75	5	10.3	0.011
4×1.0	5	10.0	0.010	5×1.0	5	10.7	0.010
4×1.5	5	11.0	0.010	5×1.5	5	11.8	0.010
4×2.5	5	12.5	0.009	5×2.5	5	14.3	0.009
7×0.5	5	10.5	0.013	8×0.5	5	11.4	0.013
7×0.75	5	10.9	0.011	8×0.75	5	11.9	0.011
7×1.0	5	11.4	0.010	8×1.0	5	12.4	0.010
7×1.5	5	13.2	0.010	8×1.5	5	14.7	0.010
7×2.5	5	15.3	0.009	8×2.5	5	16.9	0.009
10×0.5	5	12.6	0.013	12×0.5	5	13.5	0.013
10×0.75	5	13.7	0.011	12×0.75	5	14.3	0.011
10×1.0	5	14.5	0.010	12×1.0	5	14.9	0.010
10×1.5	5	16.3	0.010	12×1.5	5	16.7	0.010
10×2.5	5	18.7	0.009	12×2.5	5	19.7	0.009
14×0.5	5	14.2	0.013	16×0.5	5	14.8	0.013
14×0.75	5	14.9	0.011	16×0.75	5	15.5	0.011
14×1.0	5	15.5	0.010	16×1.0	5	16.2	0.010
14×1.5	5	17.4	0.010	16×1.5	5	18.2	0.010
14×2.5	5	20.5	0.009	16×2.5	5	21.5	0.009
19×0.5	5	15.4	0.013	24×0.5	5	17.5	0.013
19×0.75	5	16.2	0.011	24×0.75	5	18.4	0.011
19×1.0	5	16.9	0.010	24×1.0	5	19.6	0.010
19×1.5	5	19.4	0.010	24×1.5	5	22.2	0.010
19×2.5	5	22.5	0.009	24×2.5	5	26.2	0.009
27×0.5	5	17.8	0.013	30×0.5	5	18.3	0.013
27×0.75	5	18.7	0.011	30×0.75	5	19.7	0.011
27×1.0	5	20.0	0.010	30×1.0	5	20.6	0.010
27×1.5	5	22.6	0.010	30×1.5	5	23.3	0.010
27×2.5	5	26.7	0.009	30×2.5	5	27.6	0.009
37×0.5	5	19.9	0.013	44×0.5	5	22.0	0.013
37×0.75	5	21.0	0.011	44×0.75	5	23.2	0.011
37×1.0	5	22.0	0.010	44×1.0	5	24.6	0.010
37×1.5	5	25.2	0.010	44×1.5	5	28.6	0.010
37×2.5	5	30.2	0.009	44×2.5	5	34.0	0.009
48×0.5	5	22.3	0.013	52×0.5	5	22.9	0.013
48×0.75	5	23.5	0.011	52×0.75	5	24.1	0.011
48×1.0	5	24.9	0.010	52×1.0	5	25.5	0.010
48×1.5	5	29.0	0.010	61×0.5	5	24.1	0.013
48×2.5	5	34.5	0.009	61×0.75	5	25.6	0.011
/	/	/	/	61×1.0	5	26.9	0.010