



**LOW VOLTAGE  
HARMONISED PVC CABLES  
FOR HIGH TEMPERATURE  
WITH IMQ ◁HAR▷  
MARK**

***PVC insulated power cables according to  
CENELEC HD 21 harmonised Standards,  
marked with IMQ ◁HAR▷ quality mark which  
guarantees equivalence with the corresponding  
Standards in use in the following countries:  
Italy • Austria • Belgium • Czech Republic •  
Finland • France • Germany • Great Britain •  
Greece • Holland • Hungary • Norway • Poland •  
Portugal • Spain • Sweden •Switzerland •  
Turkey.***

The mark IMQ ◁HAR▷ states that ICEL has been initially evaluated and that the production is submitted to a continuous control from the Italian Quality Mark Institute (IMQ), in conformity with special technical procedures contained in the harmonized documents.

## H05V2-K



◁HAR▷

CE

Single-core PVC insulated, non-sheathed power cable with **flexible conductor** for internal wiring of appliances with a maximum continuous operating temperature of 90°C.

Nominal cross-sectional area of conductor mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductor at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm·km
			MIN mm	MAX mm			
0,5	0,21	0,6	2,1	2,5	8,9	39,0	0,013
0,75	0,21	0,6	2,2	2,7	11,5	26,0	0,011
1	0,21	0,6	2,4	2,8	14	19,5	0,010

## H07V2-K



◁HAR▷

CE

Single-core PVC insulated, non-sheathed power cable with **flexible conductor** for internal wiring of appliances with a maximum continuous operating temperature of 90°C.

Nominal cross-sectional area of conductor mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductor at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm·km
			MIN mm	MAX mm			
1,5	0,26	0,7	2,8	3,4	22	13,3	0,010
2,5	0,26	0,8	3,4	4,1	33	7,98	0,0095
4	0,31	0,8	3,9	4,8	47	4,95	0,0078
6	0,31	0,8	4,4	5,3	65	3,30	0,0068
10	0,41	1,0	5,7	6,8	110	1,91	0,0065
16	0,41	1,0	6,7	8,1	163	1,21	0,0053
25	0,41	1,2	8,4	10,2	250	0,780	0,0050
35	0,41	1,2	9,7	11,7	339	0,554	0,0043

## H05V2-U



◁HAR▷

CE

Single-core PVC insulated, non-sheathed power cable with **solid conductor** for internal wiring of appliances with a maximum continuous operating temperature of 90°C.

Nominal cross-sectional area of conductor mm <sup>2</sup>	Minimum number of conductor wires n	Thickness of insulation specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductor at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm·km
			MIN mm	MAX mm			
0,5	1	0,6	1,9	2,3	8,3	36,0	0,014
0,75	1	0,6	2,1	2,5	11,6	24,5	0,013
1	1	0,6	2,2	2,7	14	18,1	0,011

## H07V2-U



◁HAR▷

CE

Single-core PVC insulated, non-sheathed power cable with **solid conductor** for internal wiring of appliances with a maximum continuous operating temperature of 90°C.

Nominal cross-sectional area of conductor mm <sup>2</sup>	Minimum number of conductor wires n	Thickness of insulation specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductor at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm·km
			MIN mm	MAX mm			
1,5	1	0,7	2,6	3,2	20	12,1	0,011
2,5	1	0,8	3,2	3,9	32,1	7,41	0,010

## H03V2V2-F



◁HAR▷



**Flexible** power cables PVC insulated, under a light PVC sheath, with a maximum continuous operating temperature of 90°C.

Number and nominal cross-sectional area of conductors n x mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified value mm	Thickness of sheath specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductors at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm-km
				MIN mm	MAX mm			
2 x 0,5	0,21	0,5	0,6	4,6	5,9	40	39,0	0,011
2 x 0,75	0,21	0,5	0,6	4,9	6,3	48	26,0	0,010
3 G 0,5	0,21	0,5	0,6	4,9	6,3	48	39,0	0,011
3 G 0,75	0,21	0,5	0,6	5,2	6,7	56	26,0	0,010
4 G 0,5	0,21	0,5	0,6	5,4	6,9	57	39,0	0,011
4 G 0,75	0,21	0,5	0,6	5,7	7,3	74	26,0	0,010

If explicitly requested, and for agreed quantities, the version without the protective conductor (green/yellow) can be supplied.

## H05V2V2-F



◁HAR▷



**Flexible** power cables PVC insulated, under a medium PVC sheath, with a maximum continuous operating temperature of 90°C.

Number and nominal cross-sectional area of conductors n x mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified value mm	Thickness of sheath specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductors at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm-km
				MIN mm	MAX mm			
2 x 0,5	0,21	0,6	0,7	5,2	6,6	46	39,0	0,013
2 x 0,75	0,21	0,6	0,8	5,7	7,2	61	26,0	0,011
2 x 1	0,21	0,6	0,8	5,9	7,5	70	19,5	0,010
2 x 1,5	0,26	0,7	0,8	6,8	8,6	92	13,3	0,010
2 x 2,5	0,26	0,8	1,0	8,4	10,6	140	7,98	0,0095
2 x 4	0,31	0,8	1,1	9,7	12,1	190	4,95	0,0078
3 x 0,5	0,21	0,6	0,7	5,5	7,0	55	39,0	0,013
3 G 0,75	0,21	0,6	0,8	6,0	7,6	72	26,0	0,011
3 G 1	0,21	0,6	0,8	6,3	8,0	83	19,5	0,010
3 G 1,5	0,26	0,7	0,9	7,4	9,4	115	13,3	0,010
3 G 2,5	0,26	0,8	1,1	9,2	11,4	130	7,98	0,0095
3 G 4	0,31	0,8	1,2	10,5	13,1	240	4,95	0,0078
4 x 0,5	0,21	0,6	0,8	6,2	7,9	66	39,0	0,013
4 G 0,75	0,21	0,6	0,8	6,6	8,3	88	26,0	0,011
4 G 1	0,21	0,6	0,9	7,1	9,0	105	19,5	0,010
4 G 1,5	0,26	0,7	1,0	8,4	10,5	145	13,3	0,010
4 G 2,5	0,26	0,8	1,1	10,1	12,5	210	7,98	0,0095
4 G 4	0,31	0,8	1,2	11,5	14,3	290	4,95	0,0078
5 G 0,75	0,21	0,6	0,9	7,4	9,3	110	26,0	0,011
5 G 1	0,21	0,6	0,9	7,8	9,8	130	19,5	0,010
5 G 1,5	0,26	0,7	1,1	9,3	11,6	180	13,3	0,010
5 G 2,5	0,26	0,8	1,2	11,2	13,9	265	7,98	0,0095
5 G 4	0,31	0,8	1,4	13,0	16,1	320	4,95	0,0078

If explicitly requested, and for agreed quantities, the version without the protective conductor (green/yellow) can be supplied.

## H03V2V2H2-F



◁HAR▷



**Flat flexible** power cables PVC insulated, under a light PVC sheath, with a maximum continuous operating temperature of 90°C.

Number and nominal cross-sectional area of conductors n x mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified value mm	Thickness of sheath specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductors at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm·km
				MIN mm	MAX mm			
2 x 0,5	0,21	0,5	0,6	3,0x4,9	3,7x5,9	28,5	39,0	0,011
2 x 0,75	0,21	0,5	0,6	3,2x5,2	3,8x6,3	34,5	26,0	0,010

## H05V2V2H2-F



◁HAR▷



**Flat flexible** power cables PVC insulated, under a medium PVC sheath, with a maximum continuous operating temperature of 90°C.

Number and nominal cross-sectional area of conductors n x mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified Value mm	Thickness of sheath specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductors at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm·km
				MIN mm	MAX mm			
2 x 0,5	0,21	0,6	0,7	3,4x5,5	4,1x6,6	48	39,0	0,013
2 x 0,75	0,21	0,6	0,8	3,7x6,0	4,5x7,2	61	26,0	0,011
2 x 1	0,21	0,6	0,8	3,9x6,2	4,7x7,5	70	19,5	0,010

All the PVC cables contained in this brochure are "**flame retardant on a single vertical cable test**" according to the test CEI 20-35 (EN and IEC 60332-1) as indicated in the CEI 20-20 and CENELEC HD 21 standards.

They also belong to the ecological line "ECOGAMMA", and are marked on the documentation and on the packaging by the Wind Mill symbol. In these new ecological cables **lead** and its' compounds have been eliminated. Lead is a heavy metal that can be dangerous, for the environment and to humans if present in high quantities.

<b>H03V2V2-F</b>	Multi-core sheathed round flexible cable
<b>H05V2V2-F</b>	Multi-core sheathed round flexible cable
<b>H03V2V2H2-F</b>	Multi-core sheathed flat flexible cable
<b>H05V2V2H2-F</b>	Multi-core sheathed flat flexible cable

**Rated voltage:**

U<sub>o</sub>/U = 300/300 V for H03V2V2-F and H03V2V2H2-F cables;  
 U<sub>o</sub>/U = 300/500 V for H05V2V2-F and H05V2V2H2-F cables.

**Standards:** CENELEC HD 21, CEI 20-20.

**European directives:** L.V.D. 2006/95/EC - 2002/95/EC (RoHS)

**Conductor:** flexible annealed plain copper.

**Insulation:** PVC of type TI3.

**Insulation colours:**

- two cores : blue-brown;
- three cores : green/yellow-blue-brown or brown-black-grey;
- four cores : green/yellow-brown-black-grey or blue-brown-black-grey;
- five cores : green/yellow-blue-brown-black-grey or blue-brown-black-grey-black.

**Sheath:** PVC type TM3.

**Colour:** black or white; if explicitly requested, and for agreed quantities, may be supplied in other single colours.

\* **Marking:** continuous marking on one side of the sheath: «ICEL (cable designation) IEMMEQU <HAR> ECOGAMMA», on the opposed side «the nominal cross-section, year of production, MADE IN ITALY ».

**Maximum operating temperature:** 90°C on the conductor; the temperature to which the cable is exposed may be due to high ambient temperature of the installation and/or by the heat generated by the appliances in which the cables are installed.

**Maximum short circuit temperature:** 150°C on the conductor (for maximum 5 seconds).

**Minimum internal bending radii:**

For free movements 5 times the overall diameter or the smaller dimension of flat cable if lower than 12 mm; 6 times if higher.

For fixed installations 3 times the greatest overall dimension if less than 12 mm; 4 times if more than 12 mm.

For repeated wrappings 7 times the greatest overall dimension if less than 12 mm; 8 times if more than 12 mm.

**Maximum tensile stress:** 1,5 kg/mm<sup>2</sup> of the conductor cross section.

**Current carrying capacity:** see CENELEC HD 516 and CEI-UNEL 35024.

For the sections up to 1 mm<sup>2</sup>:

section (mm <sup>2</sup> )	0,5	0,75	1
current (A)	3	6	10

**Guidance for Use:**

For use in domestic appliances in which the cable is going to operate at high temperatures; unsuitable for outdoor installations, in industrial or agricultural buildings or for non-domestic portable tools.

Cables to be used only for electrical power transmission and to be installed only by skilled personal.

Further guidance and warnings for use of these cables are given in the guide to use standards CENELEC HD 516 or CEI 20-40.

\* For present agreements it is not allowed to mark the Harmonised cables and their labels with the marking of special national Standards.

The mark "ECOGAMMA" indicates the use of lead free compounds.



<b>H05V2-K</b>	Single-core flexible conductor up to 1 mm <sup>2</sup>
<b>H07V2-K</b>	Single-core flexible conductor over 1 mm <sup>2</sup>
<b>H05V2-U</b>	Single-core solid conductor up to 1 mm <sup>2</sup>
<b>H07V2-U</b>	Single-core solid conductor over 1 mm <sup>2</sup>

**Rated voltage:**

U<sub>0</sub>/U = 300/500 V for H05V2-K and H05V2-U cables;

U<sub>0</sub>/U = 450/750 V for H07V2-K, H07V2-U cables.

**Standards:** CENELEC HD 21, CEI 20-20.

**European directives:** L.V.D. 2006/95/EC - 2002/95/EC (RoHS).

**Conductor:** annealed plain copper, solid or flexible.

**Insulation:** PVC of type TI3.

**Insulation colours:**

H05V2-K and H05V2-U cables: blue, dark blue, black, brown, grey, green/yellow, red, white, turquoise, violet, orange, pink, green, yellow and all the bicolour combinations of these colours;

H07V2-K and H07V2-U cable: blue, dark blue, black, brown, grey, green/yellow, red, white, turquoise, violet, orange, pink.

**Marking:** continuous marking on the insulation: on one side «ICEL (cable designation) IEMMEQU <HAR> ECOGAMMA», on the opposed side «the nominal section, year of production, MADE IN ITALY ».

**Maximum operating temperature:** 90°C on the conductor; the temperature to which the cable is exposed may be due to high ambient temperature of the installation and/or by the heat generated by the appliances in which the cables are installed.

**Maximum short circuit temperature:** 160°C on the conductor (for maximum 5 seconds).

**Minimum internal bending radii:** 4 times the overall diameter if the cable diameter is less than 8 mm; 5 times if between 8 and 12 mm; 6 times if greater than 12 mm.

**Maximum tensile stress:** 1,5 kg/mm<sup>2</sup> of the conductor cross section for flexible conductors; 5 kg/mm<sup>2</sup> for solid conductors.

**Current carrying capacity:** see CEI-UNEL 35024 and CENELEC HD 516.

For sections up to 1 mm<sup>2</sup>:

section (mm <sup>2</sup> )	0,5	0,75	1
current (A)	3	6	10

**Guidance for Use:**

For fixed and protected installations inside electrical appliances in which the wiring will operate in high temperature areas.

Cables to be used only for electrical power transmission and to be installed only by skilled personal.

Further guidance and warnings for the use of these cables are given in the guide to use standards CENELEC HD 516 or CEI 20-40.



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