

Instituto Politécnico Nacional

Unidad Profesional Interdisciplinaria de Ingeniería Campus Tlaxcala

Lista de equipo y materiales del Laboratorio de Física

Semestre 2024-2

MTRA. DANIELA HERNÁNDEZ OTERO (TÉCNICO DE LABORATORIO)




ING. MARTHA ROSA BENITEZ QUIROZ (TÉCNICO DE LABORATORIO)

DR. Yael HERNÁNDEZ ESPINOSA (JEFE DE LABORATORIO)


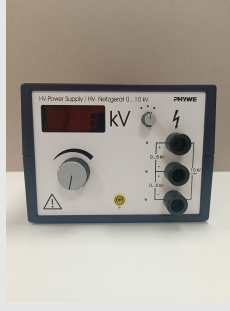


9 de Marzo 2024

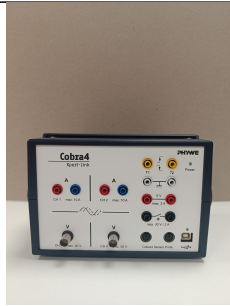


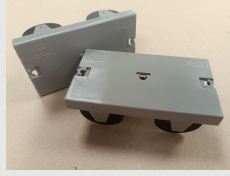

Lista de materiales

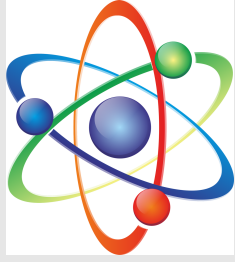

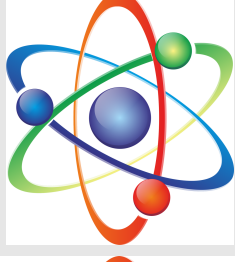

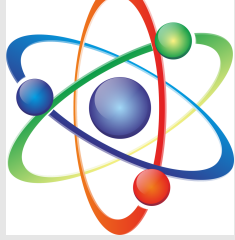
Número	Artículo	Cantidad	Marca	Serie	Foto
1	Cobra SMART sense Light - Sensor for measuring the illuminance 0 – 128 kLx (Bluetooth + USB)	5	PHYWE	12906-01	
2	Cobra SMART sense Acceleration (3-axis) - Sensor for measuring acceleration in 3 axes ± 8 g (Bluetooth + USB)	5	PHYWE	12907-01	
3	Cobra SMART sense 3-Axis Magnetic field - Sensor for measuring the magnetic field in 3 axes ± 130 mT / ± 5 mT (Bluetooth + USB)	5	PHYWE	12947-00	
4	Cobra SMART sense Wide-Range Temperature - Sensor for measuring temperature -20 – 330°C (Bluetooth)	5	PHYWE	12910-00	

Número	Artículo	Cantidad	Marca	Serie	Foto
5	Cobra SMART sense Current - Sensor for measuring electrical current ± 1 A (Bluetooth + USB)	5	PHYWE	12902-01	
6	Cobra SMART sense Voltage - Sensor for measuring electrical voltage ± 30 V (Bluetooth + USB)	5	PHYWE	12901-01	
7	Cobra SMART sense Motion - Sensor for measuring linear movements 0.2 – 2 m (Bluetooth + USB)	5	PHYWE	12908-01	
8	Cobra SMART sense Absolute Pressure - Sensor for measuring the absolute pressure 20 – 400 kPa (Bluetooth + USB)	5	PHYWE	12905-01	
9	Cobra SMART sense Force and Acceleration - Sensor for measuring force and acceleration ± 50 N / ± 16 g (Bluetooth + USB)	5	PHYWE	12943-00	

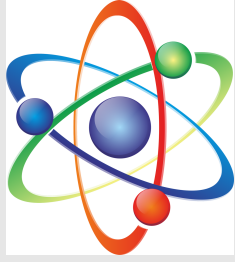

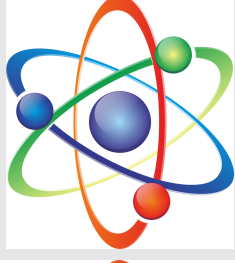
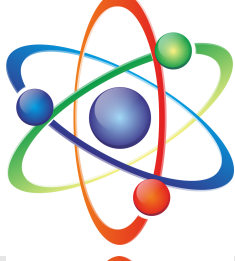
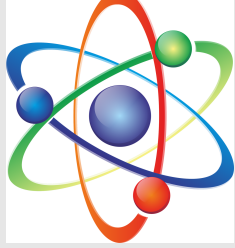
Número	Artículo	Cantidad	Marca	Serie	Foto
10	Cobra SMART sense Photogate A - Photoelectric barrier 0 - ∞ s (Bluetooth + USB)	5	PHYWE		
11	Cobra SMART sense Photogate B - Photoelectric barrier 0 - ∞ s (Bluetooth + USB)	5	PHYWE	12909-00	
12	Timer 2-1	5	PHYWE	13607.99	
13	Timer 4-4	5	PHYWE	13604.99	


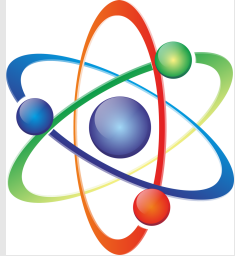

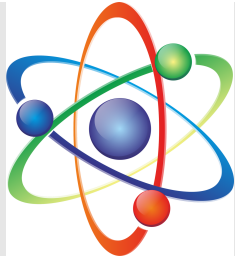

Número	Artículo	Cantidad	Marca	Serie	Foto
14	Variable Power Source DC: 0–12 V, 2 A, AC: 6 V, 12 V, 5 A	20	PHYWE	13506.93	
15	High voltage power supply with digital display, 10 kV DC: 0– ± 10 kV, max. 2 mA	5	PHYWE	13673.93	
16	High voltage power supply with digital display, 25 kV DC: 0– ± 25 kV, max. 0.5 mA	5	PHYWE		
17	Generador de funciones digital	5	PHYWE	13654.99	

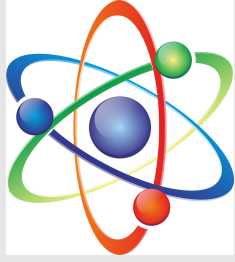

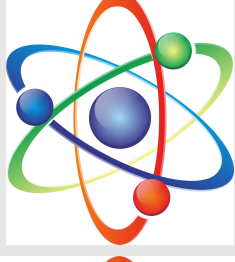

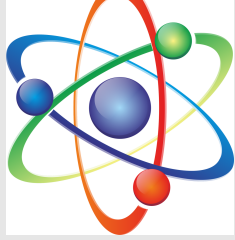
Número	Arículo	Cantidad	Marca	Serie	Foto
18	Cobra4 Xpert-Link (Universal interface)	5	PHYWE		
19	Cobra4 Xpert-Link set of cable	5	PHYWE	12625-10	
20	Multitap transformer DC: 2/4/6/8/10/12 V, 5A / AC: 2/4/6/8/10/12/14 V, 5A	5	PHYWE	13533-93	
21	Car for measurements and experiments	5	PHYWE	11060-00	
22	Ligth barrier compact, without accesories	5	PHYWE	11207-20	


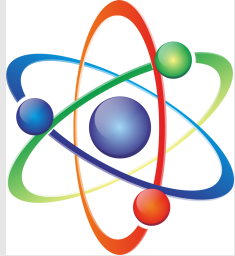
Número	Arículo	Cantidad	Marca	Serie	Foto
23	Starter System for demonstration track (disparador carritos)	5	PHYWE	11309-00	
24	Slotted weight, black, 50 g	50	PHYWE	02206-01	
25	Slotted weight, black, 10 g	50	PHYWE	02204-00	
26	Weight for low friction cart, 400 g	15	PHYWE	11306-10	
27	Cart, low friction sapphire bearings	10	PHYWE	11306-00	

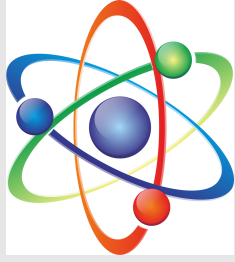
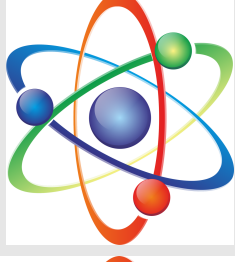

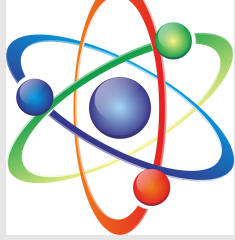
Número	Arículo	Cantidad	Marca	Serie	Foto
28	Centrifugal force apparatus	5	PHYWE	11008-00	
29	Motor de laboratorio 220V AC	5	PHYWE	11030-93	
30	Gearing 30/1, for 11030.93	5	PHYWE	11029.00	
31	Power supply 5V DC / 2.4A with 4mm plug 20W	10	PHYWE	11077.99	
32	Amortiguacion magnetica	5			


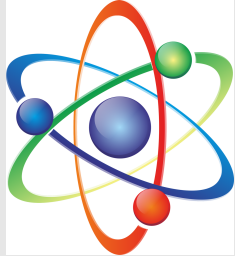

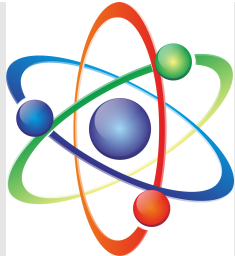

Número	Arículo	Cantidad	Marca	Serie	Foto
33	Convertidor voltage 5v 2.5A, 30w	5	PHYWE	11077.99	
34	Digital multimeter, 600V AC/DC, 10A AC/DC, 20 MΩ, 200 μF, 20 kHz, -20°C – 760°C	24	PHYWE	7122.00	
35	Generador de ondas mecanicas	5	PHYWE	11260.02	
36	Generador de alta tension 0 a 25kv	5	PHYWE	13671.93	
37	Power supply, universal	5	PHYWE	13504.99	



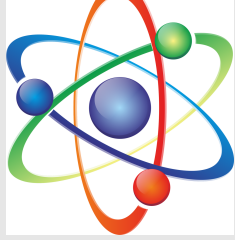
Número	Arículo	Cantidad	Marca	Serie	Foto
38	Power supply 5 VDC/4 A, according EN61558-2-16	5	PHYWE	12651.99	
39	Spring balance, transparent, 2 N	5	PHYWE	3065.03	
40	Torsion dynamometer 0.01N	5	PHYWE	2416.00	
41	Unit-construction capacitor, large model	20	PHYWE	06233-00	
42	Plate capacitor, 283×283 mm	4	PHYWE	06233-02	


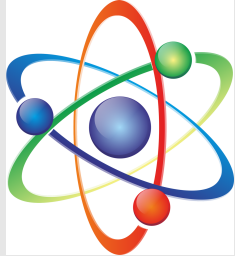

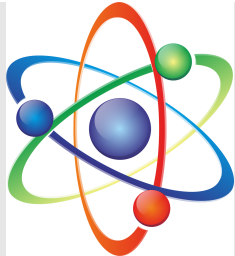

Número	Arículo	Cantidad	Marca	Serie	Foto
43	Safety connecting cable, 32 A, l = 25 cm, black	10	PHYWE	07334-05	
44	Safety connecting cable, 32A, l = 50 cm, black	20	PHYWE	07336-05	
45	Safety connecting cable, 32A, l = 100 cm, black	5	PHYWE	07337-05	
46	Safety connecting cable, 32 A, l = 25 cm, red	0	PHYWE	07335-01	
47	Safety connecting cable, 32A, l = 50 cm, red	5	PHYWE	07336-01	

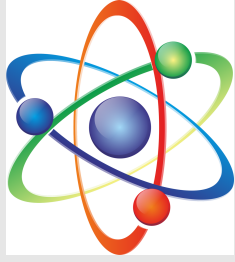

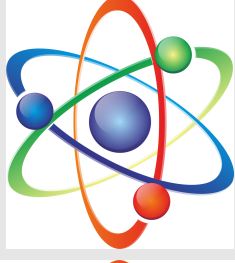
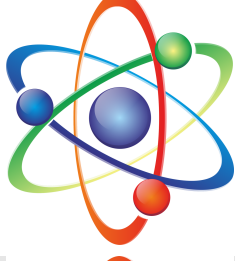
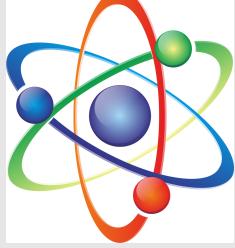
Número	Arículo	Cantidad	Marca	Serie	Foto
48	Safety connecting cable, 32A, l = 50 cm, yellow	0	PHYWE	07336-02	
49	Safety connecting cable, 32A, l = 100 cm, yellow	14	PHYWE	07337-02	
50	Safety connecting cable, 32 A, l = 25 cm, blue	0	PHYWE	07335-04	
51	Safety connecting cable, 32A, l = 50 cm, blue	0	PHYWE	07336-04	
52	Safety connecting cable, 32A, l = 100 cm, blue	24	PHYWE	07337-04	


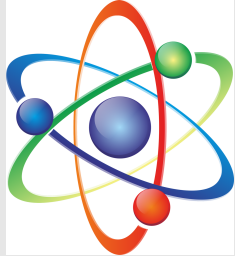

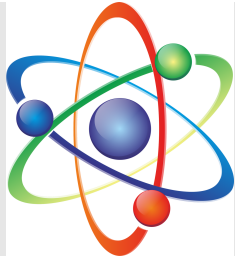

Número	Arículo	Cantidad	Marca	Serie	Foto
53	Safety connecting cable, 32A, l = 25 cm, green-yellow	15	PHYWE	07335-15	
54	Safety connecting cable, 32A, l = 50 cm, green-yellow	0	PHYWE	07336-15	
55	Safety connecting cable, 32A, l = 100 cm, green-yellow	20	PHYWE	07337-15	
56	Safety connecting cable, 32 A, l = 25 cm, yellow	0	PHYWE	07335-02	
57	Conector banana-banana rojo HV 50	5			

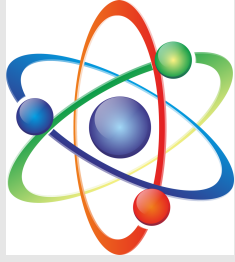

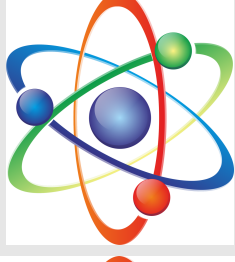

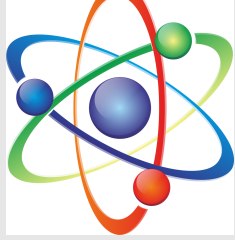
Número	Arículo	Cantidad	Marca	Serie	Foto
58	Conector banana-banana rojo HV 100	5			
59	Connecting cord, 30 kV, 500 mm	20	PHYWE	07366-00	
60	Long Distance line - model 2 pices	5	PHYWE	07305-01	
61	Adapter cable, DC-socket 2.1mm to 2x4mm plug, 5A	5	PHYWE	11077-00	
62	Electrometer Amplifier	5	PHYWE	13621-00	


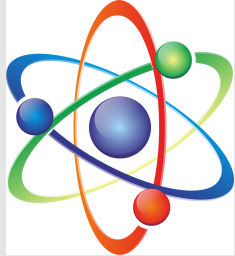

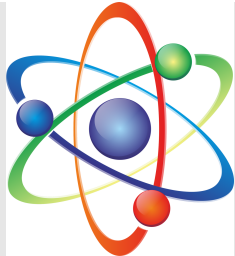

Número	Artículo	Cantidad	Marca	Serie	Foto
63	Fuente de poder 12V /500 mA	5	PHYWE	11074-93	
64	On/Off Switch Azul	5	PHYWE	06004-00	
65	Right angle clamp expert with fulcrum screw	5	PHYWE	02054-00	
66	Bench clamp expert	10	USBECK	02011-00	
67	Plate holder, opening width 2 – 35 mm	20	PHYWE	06509-00	

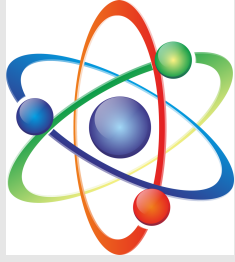

Número	Arículo	Cantidad	Marca	Serie	Foto
68	Conductor spheres, con suspensión	20	PHYWE	02416-01	
69	Puentes Blanco	0	PHYWE		
70	Support base DEMO	5	PHYWE	02007-55	
71	Insulating stem (Soporte transparente cabeza de metal)	10	PHYWE	06021-00	
72	Clamping device for iron cores	10	PHYWE	06506-00	

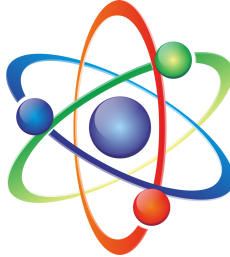
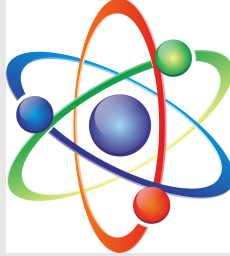

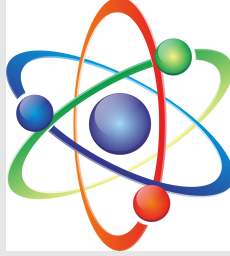

Número	Artículo	Cantidad	Marca	Serie	Foto
73	Holder for light barrier	10	PHYWE	11307-00	
74	Hojas albanene Pack	5			
75	Support rod with hole, stainless steel, 10 cm	5	PHYWE	02036-01	
76	Support rod, stainless steel, different lengths (250 mm)	5	PHYWE	02031-00	
77	Barra ranurada	10	PHYWE		

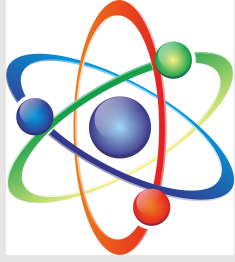

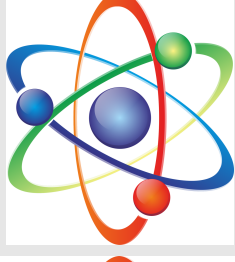

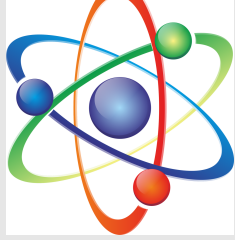
Número	Arículo	Cantidad	Marca	Serie	Foto
78	Barra con tornillo	5	PHYWE		
79	Barrel base expert	45	PHYWE	02004-55	
80	Cable USB-C	24	USBECK		
81	Generador de vibraciones externo para cubeta de ondas	5	PHYWE	11260-10	
82	Button Cell	7	PHYWE	07922-17	


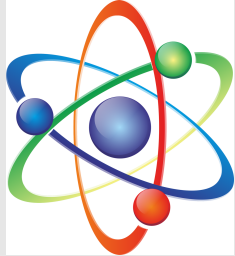

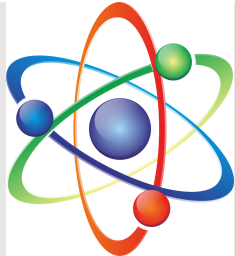

Número	Artículo	Cantidad	Marca	Serie	Foto
83	Batería 1.5V	2	DAIRU		
84	Electric Field Meter,USB	5	PHYWE	11500-20	
85	Barrera fotoeléctrica A	4	PHYWE	12909-00	
86	Barrera fotoeléctrica B	4	PHYWE	12909-00	
87	Digital stopwatch, 24 h, 1/100 s and 1 s	5	PHYWE	24025-00	

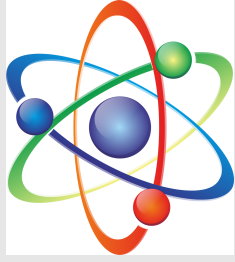

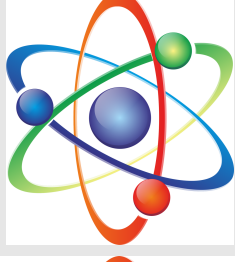

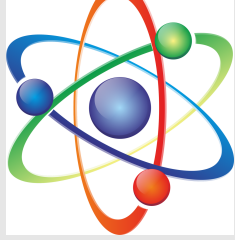
Número	Arículo	Cantidad	Marca	Serie	Foto
88	Measuring tape, l = 2 m (-Naranja-)	10	Richtei	09936-00	
89	Ruler, plastic, 200 mm	10	PHYWE	09937-01	
90	Helical spring, 3 N/m	5	PHYWE	02220-00	
91	Tableta con software PHYWE	5	Dedutel	M1070	
92	USB quick charger with 8 USB ports	4	LogiLink	07934-99	


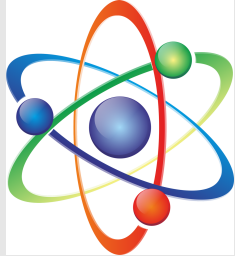

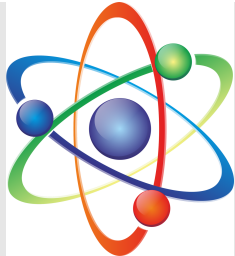

Número	Arículo	Cantidad	Marca	Serie	Foto
93	Demonstration Track, Aluminium, length: 1.5m	5	PHYWE	11305-00	
94	Track, l 900 mm	5	PHYWE	11606-00	
95	Scale, l = 750 mm, on rod	5	PHYWE	02200-00	
96	Meter scale, l = 1000 mm	5	PHYWE	03001-00	
97	Unidad de potencia central de accesorios	5			


Número	Arículo	Cantidad	Marca	Serie	Foto
98	Driving belt	5	PHYWE	03981-00	
99	Holding pin	5	PHYWE	03949-00	
100	Bearing unit	5	PHYWE	02845-00	
101	End holder for demonstration track	5	PHYWE	11305-12	
102	Equiforce Launcher	5	PHYWE	11311-00	


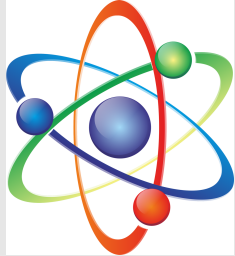

Número	Arículo	Cantidad	Marca	Serie	Foto
103	Rubber bands for fork with plug, 10 pcs	5	PHYWE	11202-09	
104	Accesorio para colisiones con corcho	10			
105	Light barrier with counter	10	PHYWE	11207-00	
106	Accesorio para colisiones con barrera metálica	5			
107	Magnet w.plug f.starter system	5	PHYWE	11202-14	

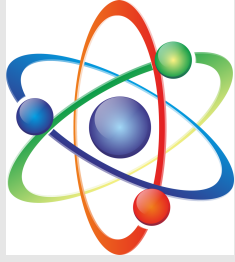

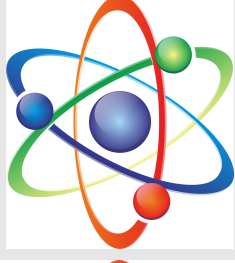
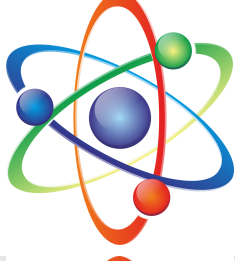
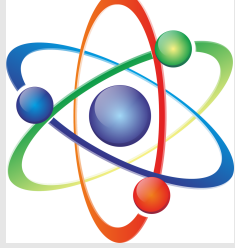
Número	Artículo	Cantidad	Marca	Serie	Foto
108	Recording paper, 1 roll,25 m	5	PHYWE	11221-01	
109	Lamp holder E10, on base plate	5	PHYWE	06002-00	
110	Tripod base PHYWE	5	PHYWE	02002-55	
111	Blow lamp, butane cartridge,X2000	5	PHYWE	46930-00	
112	Butane cartridge with valve 220 g	5	PHYWE	32181-00	


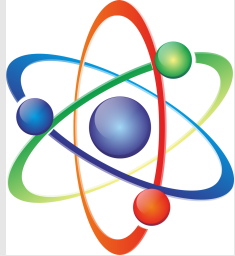

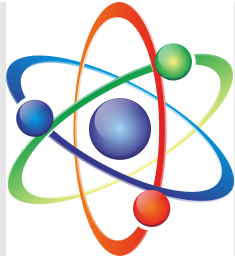

Número	Artículo	Cantidad	Marca	Serie	Foto
113	Recording timer	5	PHYWE	11207-00	
114	Adapter plate for Light barrier compact	5	PHYWE	11207-22	
115	Shutter plate for low friction cart, width: 100 mm	10	PHYWE	11308-00	
116	Conductor ball, d 20mm	5	PHYWE	06236-00	
117	Conductor ball, d 40mm	5	PHYWE	06237-00	

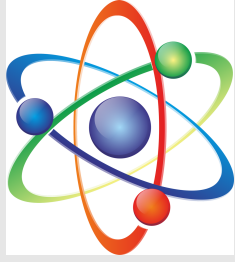

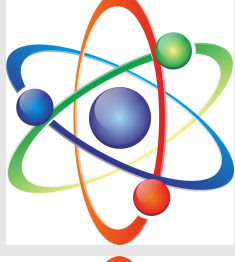

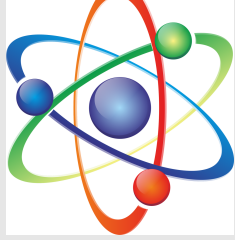
Número	Arículo	Cantidad	Marca	Serie	Foto
118	Conductor ball, d 120mm	5	PHYWE	06238-00	
119	Connection box	5	PHYWE	06000-00	
120	Induction coil,300 turns,dia.40mm	5	PHYWE	11007-01	
121	Coil, 10000 turns	10	PHYWE	06519-01	
122	Coil, 900 turns	5	PHYWE	06512-01	


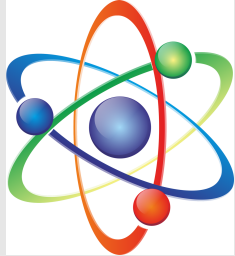

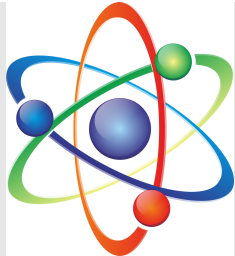

Número	Arículo	Cantidad	Marca	Serie	Foto
123	Coil, 75 turns	10	PHYWE	06511-01	
124	Capacitor 470nF/250V, G1	5	PHYWE	39105-20	
125	Capacitor 10nF/250V, G1	5	PHYWE	39105-14	
126	Capacitor 47nF/250V, G1	5	PHYWE	39105-17	
127	Capacitor 100 nF/250V, G1	5	PHYWE	39105-18	

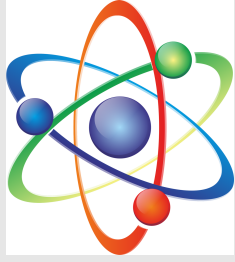

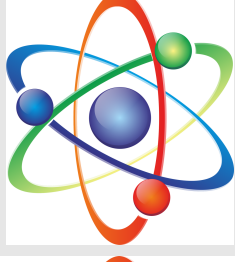

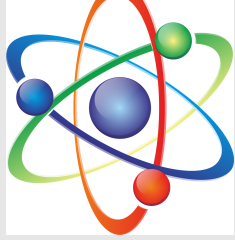
Número	Arículo	Cantidad	Marca	Serie	Foto
128	Resistor 47 Ohm, 1W, G1	5	PHYWE	39104-15	
129	Resistor 470 Ohm, 1W, G1	5	PHYWE	39104-62	
130	Resistor 100 Ohm, 1W, G1	5	PHYWE	39104-63	
131	Iron core, U-shaped, laminated	10	PHYWE	07832-00	
132	Cable USB A 2.0 a USB D	10		CB 40497590553394	


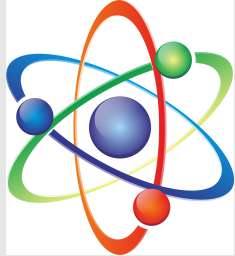
Número	Arículo	Cantidad	Marca	Serie	Foto
133	Cable USB mini B	5		s/n serie	
134	DEMO advanced Physics Set MT-DYN Linear Motion (Dynamics)	5	PHYWE	15514-88	
135	Coulomb's law/ image charge	5	PHYWE	P2420406	
136	PHYWE Ripple Tank with LED light source, complete set	5	PHYWE	11260-88	
137	Ballistic Unit	5	PHYWE	11229-10	

Número	Arículo	Cantidad	Marca	Serie	Foto
138	Spring balance,holder	5	PHYWE	03065-20	
139	Filament Lamp 6V/3W E10 10pcs.	6	PHYWE	35673-03	
140	Filament Lamp 1.5V/0.15A/2.2W E10 10pcs.	0.5	PHYWE	06150-03	
141	Filament Lamp 4V/0.04A/1.6W E10 10pcs.	1	PHYWE	06154-03	
142	Filament Lamp 12V/0.1A/1.2W E10 10pcs.	1		E28012100	

Número	Artículo	Cantidad	Marca	Serie	Foto
143	Steel ball, d = 19 mm	10	PHYWE	2502-01	
144	Holder for light barrier	5	PHYWE	02817-10	
145	Iron wire, d = 1.0 mm, l = 10 m	0.9	PHYWE	06104-01	
146	Safety gas tubing, DVGW, sold by metre	1	PHYWE	39281-10	
147	Aluminium foil, set of 2 sheets	5	PHYWE	06270-00	

Número	Arículo	Cantidad	Marca	Serie	Foto
148	Vernier calliper stainless steel 0-160 mm, 1/20	5	PHYWE	03010-00	
149	Micrometer screw gauge 0 – 25 mm	4	PHYWE	03012-00	
150	Spherometer	5	PHYWE	03017-00	
151	Glass tube, straight, L=80mm, 10pkg	0.9	PHYWE		
152	Glass tube, do=24 mm, di=21 mm, l=120 mm	5	PHYWE	MAU-16074500	

Número	Artículo	Cantidad	Marca	Serie	Foto
153	Glass plate, 100 mm x 85 mm x approx. 1 mm	5			
154	Watch glass, dia.80mm	5	PHYWE	34572-00	
155	Watch glass, dia.100 mm	5	PHYWE	34574-00	
156	Watch glass, dia.125 mm	5	PHYWE	34575-00	
157	Cobra DigiCart Expert Set	5	PHYWE	12940-88	

Número	Artículo	Cantidad	Marca	Serie	Foto
158	Cobra DigiCart (blue)	5	PHYWE	12940-01	
159	Cobra DigiCart (White)	5	PHYWE	12940-00	
160	Generador de funciones analógico	5	PHYWE	12625.99	