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4PPoE – Requirements for Lighting

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Power level at PD

- Retail (spots) most popular is 6000-7000 lm
  Example: MASTERColour CDM-TC Elite Light Boost
  Global size HID 70W luminaires → 6M/year*

- LED luminaire of this lumen output, 2 years from now requires **PD power of 65W**

- Full coverage of office lighting possible

* Source: Philips Lighting

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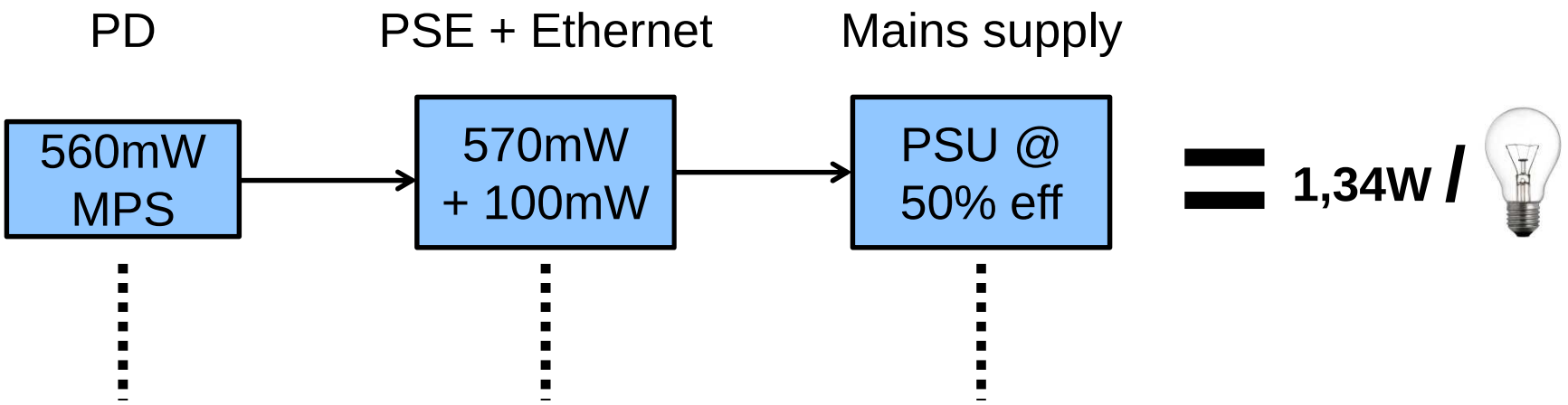
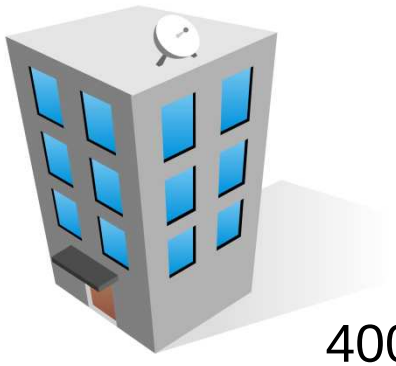
Major issue: standby power





400 people

X 5000

= 6,7 KW

= € 8800/year

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Reduce Maintain Power Signature

- With MPS=10mA, minimum power consumption is >500mW at PD
- 802.3az allows Ethernet operation for ~100mW
- **New proposed <u>total</u> MPS of 2mA** (combined for all pairs)
- Compatibility: Type 3 PDs connected to Type 1 or Type 2 PSE will have to draw 10mA. This can be handled in the PD or in the device after the PD.

- MPS duty cycling is not practical to effectively cut down on standby

Standby power	Effect for Lighting
>= 1W	Above current legal limit for control gear standby
>= 0,5W	Above 2016 EU legal limit for control gear standby

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Autodetect Power Class

- Power budgeting using class resistors is crude but simple
- LLDP-MED allows fine grained budgeting but requires Ethernet
- Low cost PoE lighting will not use Ethernet
- Matching consumed power to PSU capacity is critical to reach price targets

- Proposal: **Create 2 new power classes for Type 3**
  - Normal Type 3 class 25.5W – 49W (or whatever)
  - **Autodetect power class**

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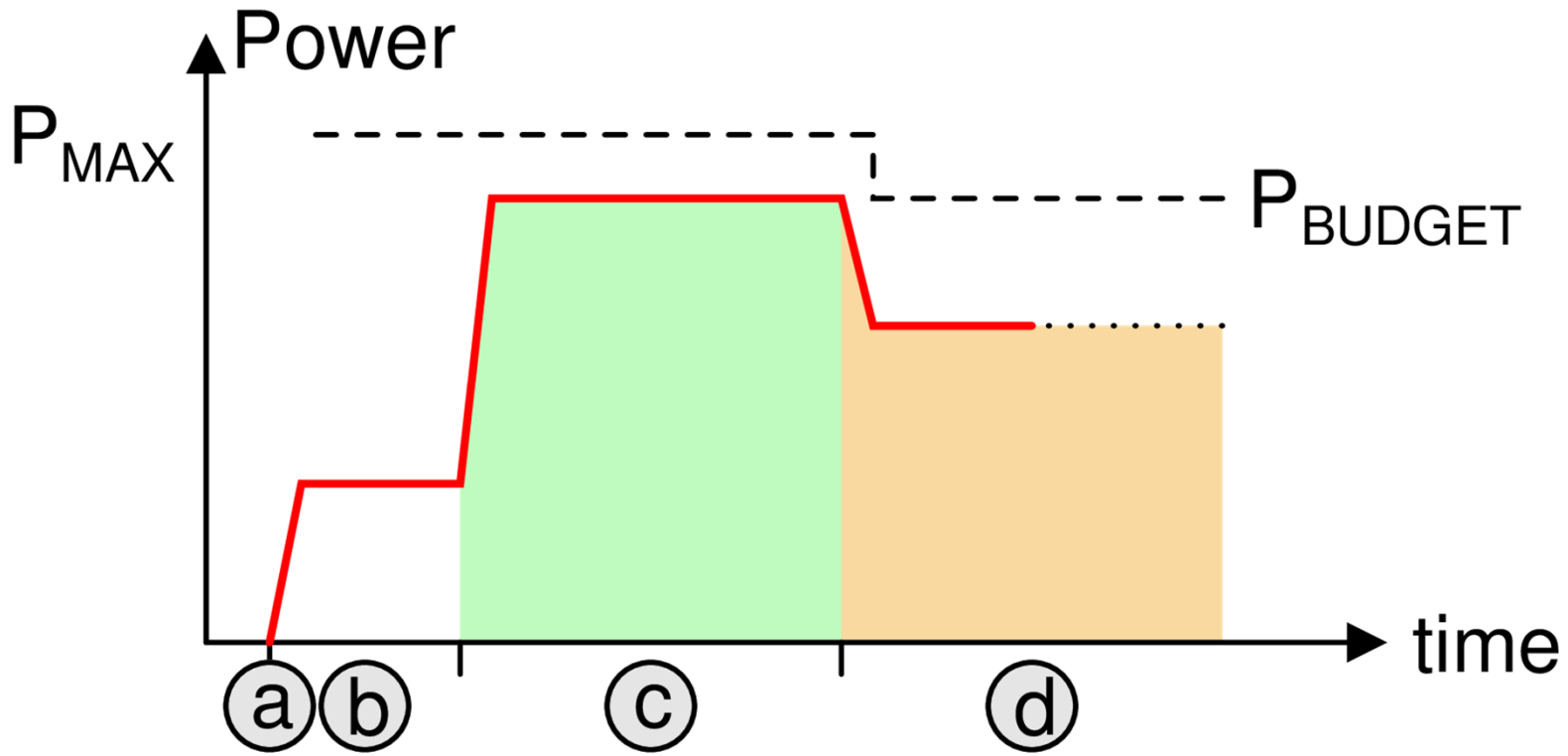
Autodetect Power Class



a) Cable inserted
b) Controlled inrush (power budget allocation initially maximum possible)
c) PD start up – PD must consume maximum power that device can ever need
   PSE measures power consumption
d) PSE reallocates PD power budget to measured value (+ margin)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