The Initial startup curve for the Energy Harvester

**Setup**
- Device: bq25570
- Current Source: Solar Cell (4 cells in series)
- Pat Number: KXOB-22-04X3 Mfg: IXYS
- Light level: Office Lighting with Desk lamp (600 LUX)
- Open Circuit Cell Voltage: 1.022Vdc (X4 = 4.088Vdc)
- MPPT @80%: 3.0Vdc
- Power Level: 600uA @ 1.8mW
- Storage Type: 47mF Super Capacitor

**Operations**
- Initial Startup: <1.5Vdc, Slow charge
- Normal Charge: >1.5Vdc, Fast charge
- LDO Turn On: 3.90Vdc
- Storage Cell Max voltage: 4.20Vdc
- LDO Turn Off: 3.20Vdc

**Plot**
- Sampling Interval: 1 Second
- Sampling Rate: 1 sample per 1 Second
- Sample Count: 4443 seconds (74.51 Minutes)

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Solar Cell Data curve for a resistive load compared to the bq25570

KXOB22-04X3 Bq25570
Single solar cell Solar Cell is an KXOB-22-04X3 from IXYS

<table>
<thead>
<tr>
<th>Description of light source</th>
<th>Lux</th>
<th>Wattage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family living room lights</td>
<td>50</td>
<td>0.000069 W</td>
</tr>
<tr>
<td>Office building hallway/toilet lighting</td>
<td>80</td>
<td>0.000102 W</td>
</tr>
<tr>
<td>Very dark overcast day</td>
<td>100</td>
<td>0.000126 W</td>
</tr>
<tr>
<td>Office lighting</td>
<td>350</td>
<td>0.000317 W</td>
</tr>
<tr>
<td>Sunrise or sunset on a clear day.</td>
<td>400</td>
<td>0.000363 W</td>
</tr>
<tr>
<td>Overcast day, typical TV studio lighting</td>
<td>1000</td>
<td>0.000774 W</td>
</tr>
<tr>
<td>Full daylight (not direct sun)</td>
<td>10000</td>
<td>0.005536 W</td>
</tr>
<tr>
<td>Direct sunlight</td>
<td>32000</td>
<td>0.007937 W</td>
</tr>
</tbody>
</table>

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TI Designs: bq25570 Power and VI Curve

MPPT 80% - Voltage and Current Input regulation curves for the bq25570

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