Rectifier Tables: Monophasic Controlled

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1 Rectifier Tables

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1.1 Monophasic Controlled Full Wave Rectifier, R vs RL load

| What | Controlled FWR R load | Controlled FWR RL load |
|--------------------|--|--|
| Circuit Diagram | $D1 \boxtimes D2 \boxtimes$ $v_i \bigotimes D3 \boxtimes D4 \boxtimes$ | $D1 \longrightarrow D2 \longrightarrow$ $v_i \bigcirc$ $D3 \longrightarrow D4 \longrightarrow$ |
| v_o | 27 37 4n | |
| $ar{v_o}(lpha)$ | $\bar{v_o} = \frac{V_i}{\pi} (\cos{(\alpha)} + 1)$ | $\bar{v_o} = \frac{2V_i}{\pi} \cos\left(\alpha\right)$ |
| v_R | 2π 3π 4π | 2π 3π 4π |
| Thyristor table | | |
| $i_o(t)$ | $\frac{1}{2\pi}$ $\frac{3\pi}{4\pi}$ | A 37 47 |
| $ar{i_o}$ | | |

| $i_i(t)$ | 3π 3π 4π | 37 37 4π |
|--------------|--------------------------------------|----------|
| $v_{T1}(t)$ | $\frac{1}{2\pi}$ $\frac{3\pi}{4\pi}$ | |
| Power Factor | | |