

Base Calculation

```
clearvars
format shortEng

syms v_ln
vDc = (3*sqrt(6)/pi)*v_ln
```

```
vDc =
5267163335246927 v_ln
2251799813685248
```

```
vDcWanted = 180
```

```
vDcWanted =
180.0000e+000
```

```
vln = double(solve(vDc == vDcWanted))
```

```
vln =
76.9530e+000
```

```
vll = vln*sqrt(3)
```

```
vll =
133.2865e+000
```

```
% the line-to-neutral voltage must be adjusted to 77 V RMS
% this voltage will provide 133 V line-to-line and may be used to power a
% power brick (adapter) for the control circuitry
vPeak = vln*sqrt(2) % for diode selection
```

```
vPeak =
108.8280e+000
```

```
prospEff = 0.6; % prospective efficiency
prospPow = 2e3;
gridPow = prospPow/prospEff
```

```
gridPow =
3.3333e+003
```

```
phaseCurr = gridPow/(3*vln)
```

```
phaseCurr =
14.4388e+000
```

```
iDc = gridPow/vDcWanted
```

```
iDc =
18.5185e+000
```

1 phi Rectifier For Control CCT

```
vAv_1phi = (2*sqrt(2)/pi)*vln
```

```
vAv_1phi =  
69.2820e+000
```