

Short Rectangular Membrane Stress and Deflection Calculator		
Pressure on membrane $p =$	0.6000	lbs/in <sup>2</sup>
modulus of elasticity $E =$	3,200.0	lbs/in <sup>2</sup>
length $a =$	4.0000	in
width $b =$	2.0000	in
thickness of membrane $t =$	0.1250	in
Coefficient "x" axis variable $a / b =$	2.0000	-
is $a / b < 5?$	Yes	Valid
Coefficient $\eta_1 =$	0.16	-
Coefficient $\eta_2 =$	0.25	-
Coefficient $\eta_3 =$	0.10	-
Coefficient $\eta_4 =$	0.04	-
Coefficient $\eta_5 =$	0.08	-
Coefficient $\eta_6 =$	0.34	-
Coefficient $\eta_7 =$	0.10	-
Calculated Results		
Eq. 1 deflection at center $\delta =$	0.1163	in
Eq. 2 Center of plate $f_x =$	26.4154	lbs/in <sup>2</sup>
Eq. 3 Center of plate $f_y =$	10.5662	lbs/in <sup>2</sup>
Eq. 4 Center of short side $f_x =$	4.2265	lbs/in <sup>2</sup>
Eq. 5 Center of short side $f_y =$	8.4529	lbs/in <sup>2</sup>
Eq. 6 Center of long side $f_x =$	35.9250	lbs/in <sup>2</sup>
Eq. 7 Center of long side $f_y =$	10.5662	lbs/in <sup>2</sup>