

# MultiSync® MT820/MT1020 Installation Data

## Desk Top and Ceiling Mount

---

### Contents

Notes and Formulas_____	Page 1
Projection Distances and Screen Sizes	
Ceiling Mount (Lens Wide)_____	Page 2
Ceiling Mount (Lens Telephoto)_____	Page 3
Desktop Setup (Lens Wide)_____	Page 4
Desktop Setup (Lens Telephoto)_____	Page 5
Cabinet Dimensions_____	Page 6
Ceiling Mount Dimensions_____	Page 7

### Notes

---

- For Screen Sizes of 60 to 300 inches not indicated on the projection tables, use the formulas below.
- Set the projection distance based on the width of the screen.
- If the figures on the tables do not match the figures in the formulas, use the figures in the table.

### Formulas

---

#### Units: Inches

$$M = 1.25 \times W / 33.02$$

$$A = C / \text{COSINE } \alpha$$

$$B = (8 \times M) + 5.598$$

$$C \text{ (Zoom Wide)} = (53.2 \times M) - 3.37$$

$$C \text{ (Zoom Telephoto)} = C \text{ (Zoom Wide)} \times 1.3055$$

$$D = (3 \times W / 8) - E$$

$$E = (8 \times M) + 3.433$$

$$\alpha = \text{TAN}^{-1} ((E - 3.433) / C)$$

#### Units: Millimeters

$$M = 1.25 \times W / 1.3$$

$$A = C / \text{COSINE } \alpha$$

$$B = (8 \times M) + 142.2$$

$$C \text{ (Zoom Wide)} = (53.2 \times M) - 85.609$$

$$C \text{ (Zoom Telephoto)} = C \text{ (Zoom Wide)} \times 1.3055$$

$$D = 25.4 \times (3 \times W / 8) - E$$

$$E = (8 \times M) + 87.2$$

$$\alpha = \text{TAN}^{-1} ((E - 87.2) / C)$$

**W** = Width of Screen

**A** = Distance between lens center and screen center

**B** = Vertical distance between top of NEC ceiling mount and screen center

**C** = Horizontal throw distance between screen surface and projector lens

**D** = Vertical distance between projector base and screen bottom

**E** = Vertical distance between desk top level and screen center

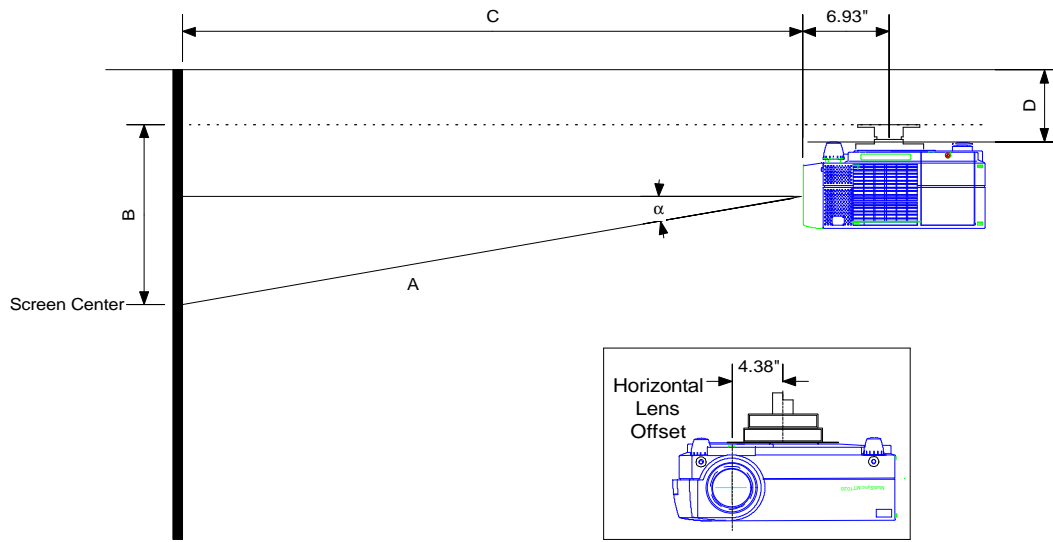
# MultiSync® MT820/MT1020 Installation Data

Desk Top and Ceiling Mount

## Projection Distance and Screen Size for Ceiling Mount

The following shows the proper relative positions of the projector and screen. Refer to the table to determine the position of installation.

### Ceiling Mount System



### Zoom Lens (Wide)

$\alpha$	degree	8.86	8.81	8.77	8.75	8.73	8.70	8.67	8.65	8.64	8.63	8.62	8.61
$\beta$ (=sin $\alpha$ )		0.1539	0.1531	0.1525	0.1521	0.1518	0.1513	0.1508	0.1504	0.1503	0.1500	0.1499	0.1497
$\gamma$ (=cos $\alpha$ )		0.9881	0.9882	0.9883	0.9884	0.9884	0.9885	0.9886	0.9886	0.9886	0.9887	0.9887	0.9887
Screen Width	inch	48	56	64	72	80	96	120	144	160	192	216	240
Diagonal (4:3)	inch	60	70	80	90	100	120	150	180	200	240	270	300
A	inch	94.4	110.8	127.1	143.4	159.6	192.1	241.1	289.9	322.5	387.7	436.5	485.4
	mm	2398.6	2813.2	3227.8	3642.4	4053.0	4880.2	6123.0	7362.8	8191.0	9846.4	11086.2	12329.0
B	inch	20.1	22.6	25.0	27.4	29.8	34.7	41.9	49.2	54.1	63.7	71.0	78.3
	mm	511.4	573.0	634.5	696.0	757.6	880.7	1065.3	1249.9	1373.0	1619.1	1803.7	1988.4
C	inch	93.3	109.4	125.6	141.7	157.7	189.9	238.3	286.6	318.8	383.3	431.5	479.9
	mm	2370	2780	3190	3600	4006	4824	6053	7279	8098	9735	10961	12190
D	inch	0.0	0.6	1.2	1.7	2.3	3.5	5.2	6.9	8.1	10.4	12.1	13.8
	mm	0.5	15.1	29.7	44.3	59.0	88.2	132.0	175.9	205.1	263.6	307.4	351.3

### Note:

For screen sizes of 60 to 300 inches not indicated on the projection tables, use the formulas on page 1. All calculations are with the lens (Wide setting).

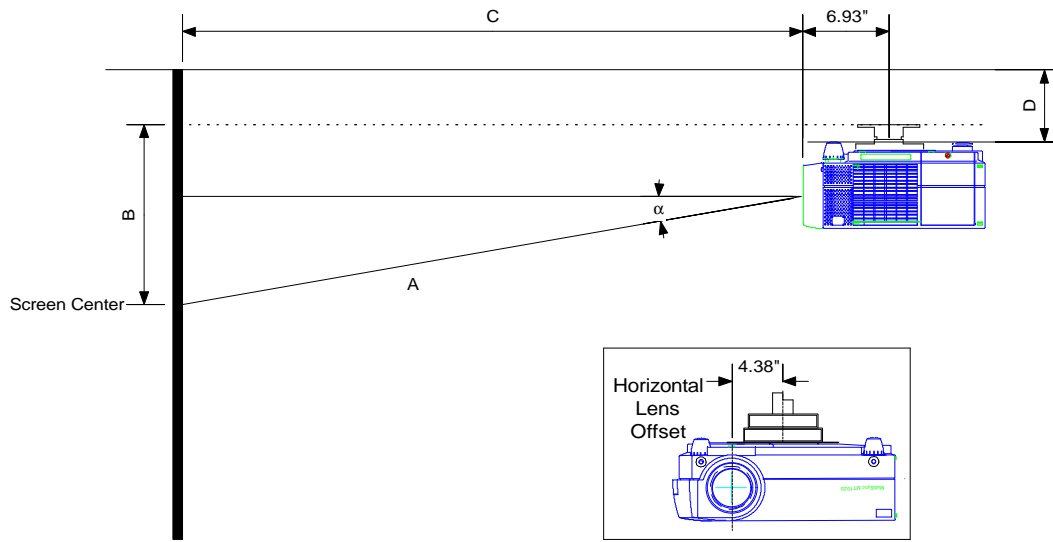
# MultiSync® MT820/MT1020 Installation Data

Desk Top and Ceiling Mount

## Projection Distance and Screen Size for Ceiling Mount

The following shows the proper relative positions of the projector and screen. Refer to the table to determine the position of installation.

### Ceiling Mount System



### Zoom Lens (Telephoto)

$\alpha$	degree	6.78	6.75	6.73	6.72	6.71	6.69	6.67	6.66	6.65	6.64	6.64	6.63
$\beta (= \sin\alpha)$		0.1181	0.1176	0.1172	0.1170	0.1168	0.1165	0.1162	0.1160	0.1159	0.1157	0.1156	0.1155
$\gamma (= \cos\alpha)$		0.9930	0.9931	0.9931	0.9931	0.9932	0.9932	0.9932	0.9933	0.9933	0.9933	0.9933	0.9933
Screen Width	inch	48	56	64	72	80	96	120	144	160	192	216	240
Diagonal (4:3)	inch	60	70	80	90	100	120	150	180	200	240	270	300
A	inch	123.1	144.2	165.3	186.3	207.4	249.6	312.8	376.1	418.2	502.5	565.8	629.1
	mm	3126.9	3663.4	4199.0	4732.5	5269.1	6339.2	7945.8	9552.4	10622.5	12764.7	14371.4	15979.0
B	inch	20.1	22.6	25.0	27.4	29.8	34.7	41.9	49.2	54.1	63.7	71.0	78.3
	mm	511.4	573.0	634.5	696.0	757.6	880.7	1065.3	1249.9	1373.0	1619.1	1803.7	1988.4
C	inch	122.2	143.2	164.2	185.0	206.0	247.9	310.7	373.5	415.4	499.2	562.0	624.9
	mm	3105	3638	4170	4700	5233	6296	7892	9488	10551	12679	14275	15872
D	inch	0.0	0.6	1.2	1.7	2.3	3.5	5.2	6.9	8.1	10.4	12.1	13.8
	mm	0.5	15.1	29.7	44.3	59.0	88.2	132.0	175.9	205.1	263.6	307.4	351.3

### Note:

For screen sizes of 60 to 300 inches not indicated on the projection tables, use the formulas on page 1. All calculations are with the lens (Telephoto setting)

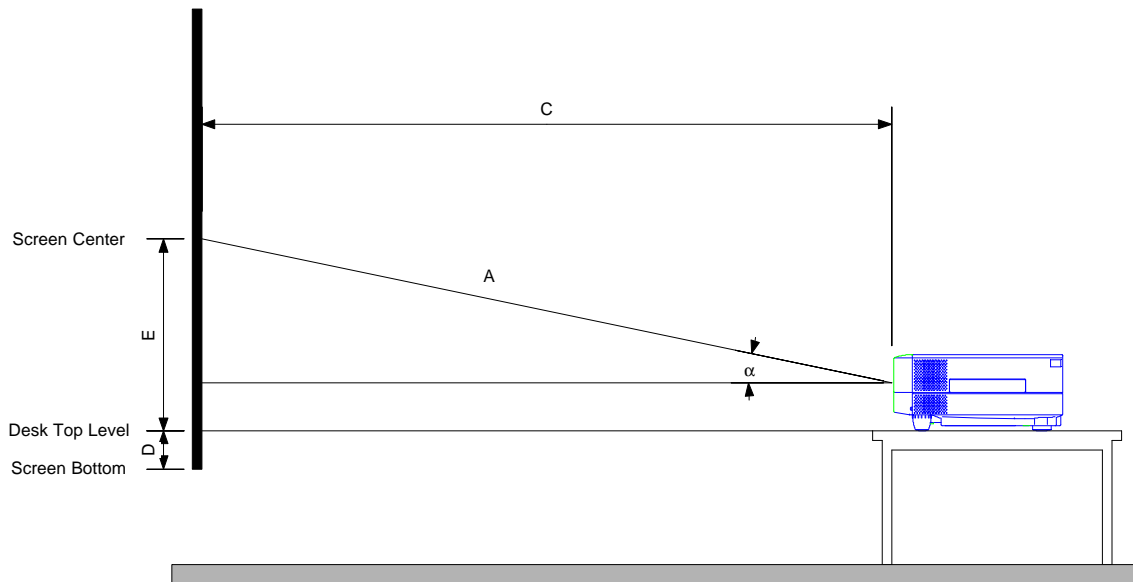
# MultiSync® MT820/MT1020 Installation Data

## Desk Top and Ceiling Mount

### Projection Distance and Screen Size for Desktop

The following diagram shows the relationship between projector position and the screen.

#### Desktop System



#### Zoom Lens (Wide)

$\alpha$	degree	8.86	8.81	8.77	8.75	8.73	8.70	8.67	8.65	8.64	8.63	8.62	8.61
$\beta (= \sin\alpha)$		0.1539	0.1531	0.1525	0.1521	0.1518	0.1513	0.1508	0.1504	0.1503	0.15	0.1499	0.1497
$\gamma (= \cos\alpha)$		0.9881	0.9882	0.9883	0.9884	0.9884	0.9885	0.9886	0.9886	0.9886	0.9887	0.9887	0.9887
Screen Width	inch	48	56	64	72	80	96	120	144	160	192	216	240
Diagonal (4:3)	inch	60	70	80	90	100	120	150	180	200	240	270	300
A	inch	94.4	110.8	127.1	143.4	159.6	192.1	241.1	289.9	322.5	387.7	436.5	485.4
	mm	2398.6	2813.2	3227.8	3642.4	4053.0	4880.2	6123.0	7362.8	8191.0	9846.4	11086.2	12329.0
C	inch	93.3	109.4	125.6	141.7	157.7	189.9	238.3	286.6	318.8	383.3	431.5	479.9
	mm	2370	2780	3190	3600	4006	4824	6053	7279	8098	9735	10961	12190
D	inch	0.0	0.6	1.2	1.7	2.3	3.5	5.2	6.9	8.1	10.4	12.1	13.8
	mm	0.5	15.1	29.7	44.3	59.0	88.2	132.0	175.9	205.1	263.6	307.4	351.3
E	inch	18.0	20.4	22.8	25.2	27.7	32.5	39.8	47.0	51.9	61.6	68.8	76.1
	mm	456.4	518.0	579.5	641.0	702.6	825.7	1010.3	1194.9	1318.0	1564.1	1748.7	1933.4

#### Note:

For screen sizes of 60 to 300 inches not indicated on the projection tables, use the formulas on page 1. All calculations are with the lens (Wide setting).

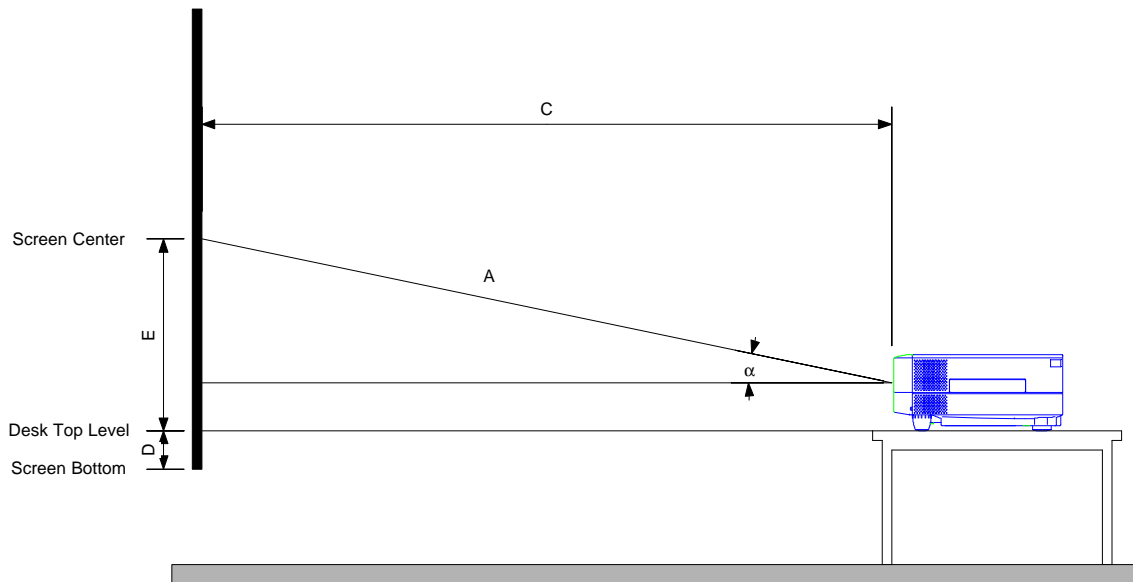
# MultiSync® MT820/MT1020 Installation Data

## Desk Top and Ceiling Mount

### Projection Distance and Screen Size for Desktop

The following diagram shows the relationship between projector position and the screen.

#### Desktop System



#### Zoom Lens (Telephoto)

$\alpha$	degree	6.78	6.75	6.73	6.72	6.71	6.69	6.67	6.66	6.65	6.64	6.64	6.63
$\beta (= \sin\alpha)$		0.1181	0.1176	0.1172	0.1170	0.1168	0.1165	0.1162	0.1160	0.1159	0.1157	0.1156	0.1155
$\gamma (= \cos\alpha)$		0.9930	0.9931	0.9931	0.9931	0.9932	0.9932	0.9932	0.9933	0.9933	0.9933	0.9933	0.9933
Screen Width	inch	48	56	64	72	80	96	120	144	160	192	216	240
Diagonal (4:3)	inch	60	70	80	90	100	120	150	180	200	240	270	300
A	inch	123.1	144.2	165.3	186.3	207.4	249.6	312.8	376.1	418.2	502.5	565.8	629.1
	mm	3126.9	3663.4	4199.0	4732.5	5269.1	6339.2	7945.8	9552.4	10622.5	12764.7	14371.4	15979.0
C	inch	122.2	143.2	164.2	185.0	206.0	247.9	310.7	373.5	415.4	499.2	562.0	624.9
	mm	3105	3638	4170	4700	5233	6296	7892	9488	10551	12679	14275	15872
D	inch	0.0	0.6	1.2	1.7	2.3	3.5	5.2	6.9	8.1	10.4	12.1	13.8
	mm	0.5	15.1	29.7	44.3	59.0	88.2	132.0	175.9	205.1	263.6	307.4	351.3
E	inch	18.0	20.4	22.8	25.2	27.7	32.5	39.8	47.0	51.9	61.6	68.8	76.1
	mm	456.4	518.0	579.5	641.0	702.6	825.7	1010.3	1194.9	1318.0	1564.1	1748.7	1933.4

#### Note:

For screen sizes of 60 to 300 inches not indicated on the projection tables, use the formulas on page 1. All calculations are with the lens (Telephoto).

# MultiSync® MT820/MT1020 Installation Data

Desk Top and Ceiling Mount

## Cabinet Dimensions

The following diagrams show the cabinet dimensions for the MultiSync MT820/MT1020. Dimensions are in Inches. For millimeters multiply by 25.4.

