

# Apertures

for MINI-BEAM™  
Opposed Mode sensor pairs

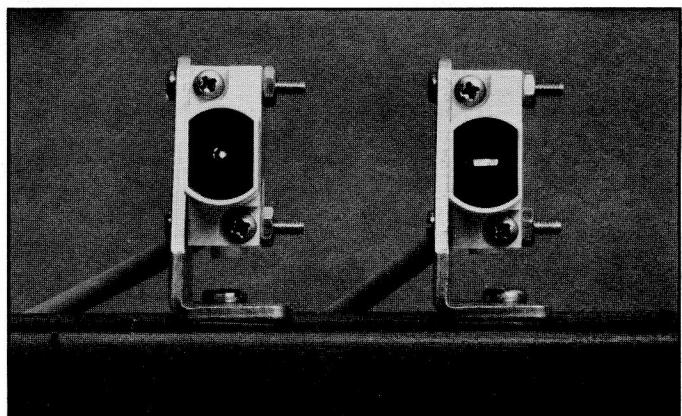
**BANNER**  
the photoelectric specialist

Opposed mode MINI-BEAM sensors may be fitted with apertures, which narrow or "shape" the effective beam of the sensors to more closely match the size or profile of the object to be sensed (see photo, right). A common example is the use of a "line" or "slit" type aperture when wire or thread is to be sensed.

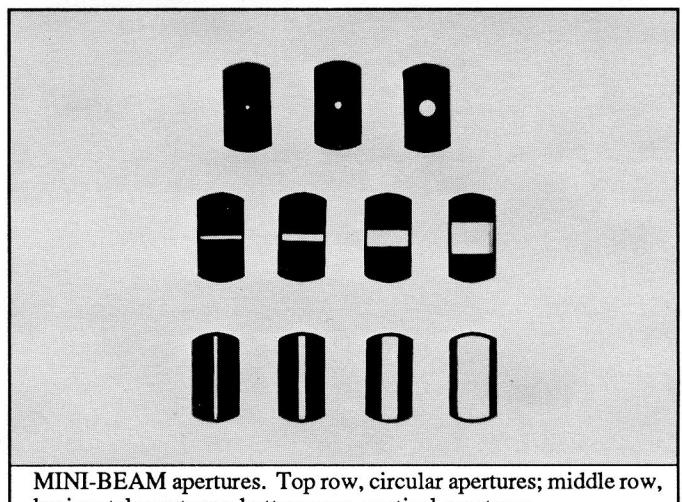
Apertures may also be used to lower the excess gain of opposed mode sensors to avoid "burn-through" of thin-walled or translucent objects.

MINI-BEAM apertures are available in three styles: circular, horizontal slotted, and vertical slotted. Several sizes are available. Apertures install easily behind the lens, inside the MINI-BEAM's "nose".

Each model number in the table below indicates a package of 20 apertures of the size shown. A bag of two apertures of *each* of the eleven types listed may be ordered by specifying part number AP31-DVH2.



Model	Dimensions & Style
AP31-020	.02 inch diameter, circular
AP31-040	.04 inch diameter, circular
AP31-100	.10 inch diameter, circular
AP31-020H	.02 x .25 inch, horizontal slotted
AP31-040H	.04 x .25 inch, horizontal slotted
AP31-100H	.10 x .25 inch, horizontal slotted
AP31-200H	.20 x .25 inch, horizontal slotted
AP31-020V	.02 x .50 inch, vertical slotted
AP31-040V	.04 x .50 inch, vertical slotted
AP31-100V	.10 x .50 inch, vertical slotted
AP31-200V	.20 x .50 inch, vertical slotted



MINI-BEAM apertures. Top row, circular apertures; middle row, horizontal apertures; bottom row, vertical apertures.

## Range of MINI-BEAM Opposed Mode Sensor Pairs when used with Apertures

Aperture(s) used	RANGE: Standard Group I and II Sensor Pairs				RANGE: Group I Sensor Pairs with UC-300EL upper covers substituted	
	Emitter & Receiver both apertured		Receiver only apertured		Emitter & Receiver both apertured	Receiver only apertured
	Group I Sensors	Group II Sensors	Group I Sensors	Group II Sensors		
AP31-020	3.5 in.	4.0 in.	18 in.	60 in.	5.0 in.	36 in.
AP31-040	13 in.	18 in.	37 in.	10.5 ft.	19 in.	80 in.
AP31-100	60 in.	10 ft.	100 in.	27 ft.	84 in.	19 ft.
AP31-020H	16 in.	70 in.	38 in.	30 ft.	34 in.	11 ft.
AP31-040H	36 in.	13 ft.	72 in.	41 ft.	72 in.	17 ft.
AP31-100H	90 in.	34 ft.	114 in.	68 ft.	17 ft.	28 ft.
AP31-200H	110 in.	70 ft.	120 in.	80 ft.	27 ft.	36 ft.
AP31-020V	18 in.	65 in.	40 in.	27 ft.	40 in.	11 ft.
AP31-040V	40 in.	18 ft.	70 in.	52 ft.	84 in.	18 ft.
AP31-100V	90 in.	35 ft.	114 in.	75 ft.	20 ft.	28 ft.
AP31-200V	110 in.	75 ft.	120 in.	85 ft.	28 ft.	36 ft.

Example: the MINI-BEAM SM31E/SM31R sensor pair is in Group I. With an AP31-040 circular aperture on the receiver only, range is 37 inches. With AP31-040 apertures on both emitter and receiver, range is 13 inches. Group I range with AP31-040 apertures and UC-300EL upper covers on both units is 19 inches; range with only receiver apertured is 80 inches.