



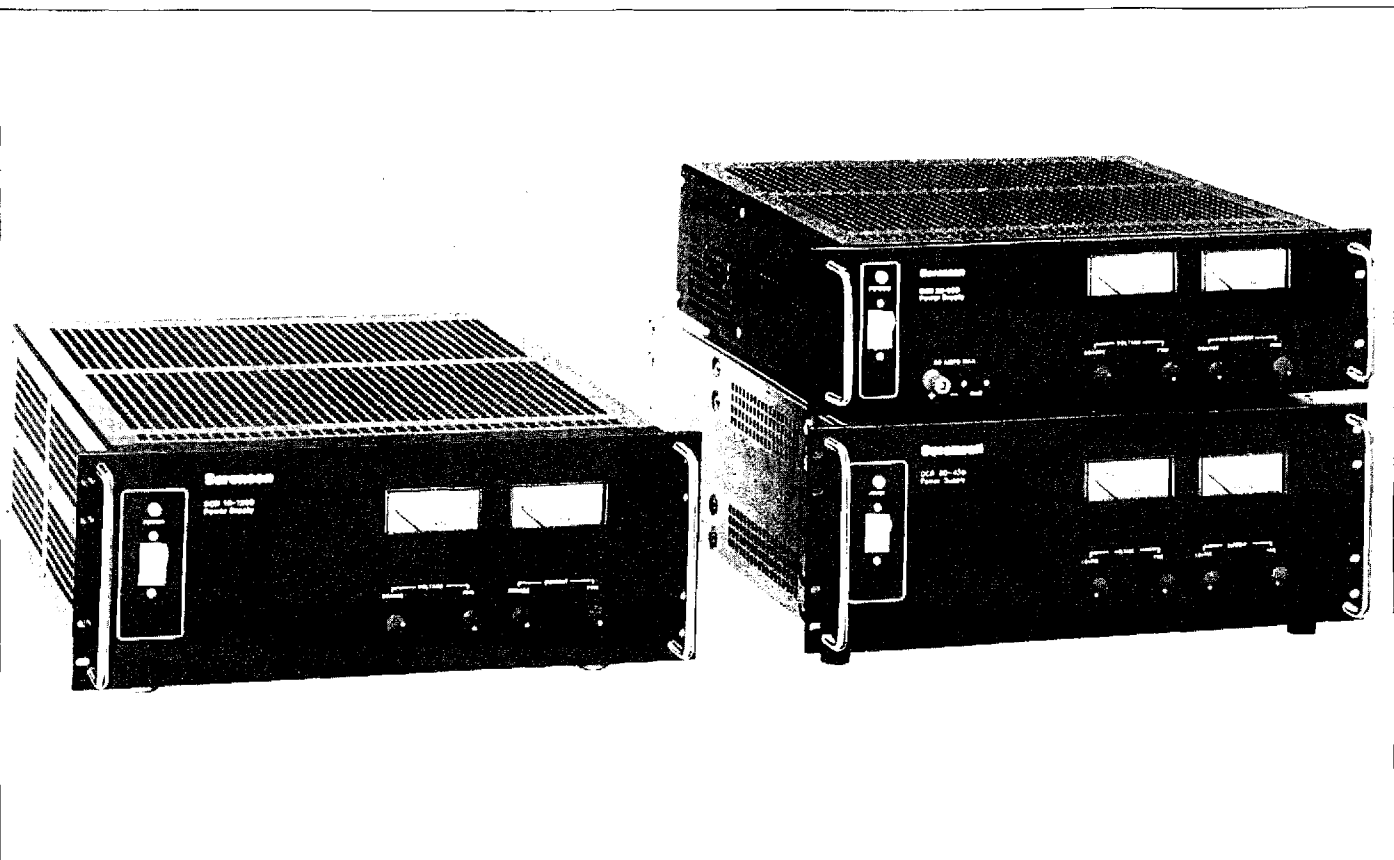
# Advanced Test Equipment Rentals

[www.atecorp.com](http://www.atecorp.com) 800-404-ATEC (2832)

DCR-B Series high power laboratory and industrial power supplies have input SCR controlled regulator which provides unparalleled reliability along with regulation and transient response performance suitable for nearly all burn-in and test applications.

31 models in 9 voltage ranges offer from 0-7 to 0-600 Vdc with power levels from 400 to 2700 W. Sorensen has over 20 years of industry experience in designing this type of product.

- 31 models in nine voltage ranges from 0-7 Vdc to 0-600 Vdc with power levels from 400 to 2700 watts
- 115 Vac single phase input standard (208/220/230 Vac single phase optional) on all convection cooled models (up to 1800 watts)
- 208 Vac single phase input standard (220/230 Vac optional) on all models in excess of 2000W
- 50/60 Hz operation without derating
- Low ripple and noise
- Excellent voltage and current regulation with automatic crossover. Panel lights indicate operating mode
- Remote voltage and resistance programming in voltage and current modes
- Adjustable current limiting (overload/short circuit protection) with automatic recovery
- Overvoltage protection with crowbar standard, all models
- 0.05% line & load regulation (typical)
- 65-1200 mV rms ripple (model dependent)
- 50 ms transient response—50% change (typical)
- Option M50: LCD digital meters
- 5-year warranty



**OUTPUT  
CONSTANT VOLTAGE MODE**

**Voltage Regulation:**

Line and load combined  
0-7 and 0-10 Vdc models

0.1% or 5 mV, whichever is greater.

0-20 to 0-80 Vdc models

0.05% or 10 mV, whichever is greater.

0-150 to 0-600 Vdc models

0.05% or 75 mV, whichever is greater.

**Temperature Coefficient:**

0.015%/°C of  $E_o$  max.

**Resistance Programming:**

See model specification chart.

**Voltage Programming:**

Consult instruction manual.

**Stability:**

0.1%  $E_o$  max for 8 hours after 30 minute warm-up.

**Remote Sensing:**

Maximum drop per load lead should not exceed 5% of  $E_o$  max. or 3 V, whichever is smaller.

**Transient Response:**

0-10 to 0-600 Vdc models

50 ms (typical) to return to  $\pm 1\%$  band for step load change of 50 to 100% of full load ( $\pm 2\%$  or 20 V model,  $\pm 3\%$  for 10 V model).

0-7 Vdc model

100 ms (typical) to return to  $\pm 3\%$  band for step load change of 67 to 100% of full load.

**CONSTANT CURRENT MODE**

**Current Regulation:**

0.25% of  $I_o$  max. line and load combined. (0.5% for 7 V model)

**Temperature Coefficient:**

0.03%/°C. of  $I_o$  max.

**Current Programming:**

See model specification chart.

**Stability:**

0.15% of  $I_o$  max. for 8 hours after 30 minute warm-up.

**INPUT**

**Voltage:**

103-127 Vac single phase for 400 to 1800 watts models. 187-229 Vac single phase for 2100-2700 watt models.

Model	Output Power				Constant Voltage Mode					Temp. Coeff., Voltage mV/°C (Typ.)	Voltage Drift, (Typ.) <sup>4</sup> % $E_o$ Max.	Programming Constants Voltage Mode	
	Voltage (Vdc)	Current (A dc)			Regulation mV <sup>1</sup>	Ripple (PARD)		Resolution % $E_o$ Max. (Typ.)	Transient Response Time (ms (Typ.) <sup>2</sup> )			Ohms/V	V/V <sup>5</sup>
		40°C	50°C	70°C		mV-rms	mV-P-P						
DCR 7-300B	0-7	300	225	150	1	65	200	0.05	100	1.1	0.1	1710	0-10
DCR 10-40B	0-10	40	30	20	3	65	200	0.05	50	1.5	0.1	1200	0-10
DCR 10-80B	0-10	80	60	40	3	65	200	0.05	50	1.5	0.1	1200	0-10
DCR 10-120B	0-10	120	90	60	3	65	200	0.05	50	1.5	0.1	1200	0-10
DCR 20-25B	0-20	25	19.3	13	3	65	200	0.05	50	3.0	0.1	600	0-10
DCR 20-50B	0-20	50	37.5	25	10	65	200	0.05	50	3.0	0.1	600	0-10
DCR 20-80B	0-20	80	60	40	6	65	200	0.05	50	3.0	0.1	600	0-10
DCR 20-115B	0-20	115	86.5	58	6	65	200	0.05	50	3.0	0.1	600	0-10
DCR 40-13B	0-40	13	9.8	6.6	12	90	270	0.05	50	6.0	0.1	300	0-10
DCR 40-25B	0-40	25	19.3	13	12	90	270	0.05	50	6.0	0.1	300	0-10
DCR 40-40B	0-40	40	30	20	12	90	270	0.05	50	6.0	0.1	300	0-10
DCR 40-70B	0-40	70	55	40	12	90	270	0.05	50	6.0	0.1	300	0-10
DCR 60-9B	0-60	9	7	5	18	125	375	0.05	50	9.0	0.1	200	0-10
DCR 60-18B	0-60	18	13.3	8.6	18	125	375	0.05	50	9.0	0.1	200	0-10
DCR 60-30B	0-60	30	23.3	16.5	18	125	375	0.05	50	9.0	0.1	200	0-10
DCR 60-45B	0-60	45	35.8	26.5	18	125	375	0.05	50	9.0	0.1	200	0-10
DCR 80-6B	0-80	6	4.7	3.3	24	150	450	0.05	50	12.0	0.1	150	0-10
DCR 80-12B	0-80	12	9.3	6.6	24	150	450	0.05	50	12.0	0.1	150	0-10
DCR 80-33B	0-80	33	26.5	20	24	150	450	0.05	50	12.0	0.1	150	0-10
DCR 150-3B	0-150	3	2.4	1.7	45	300	900	0.05	50	22.5	0.1	80	0-10
DCR 150-6B	0-150	6	4.7	3.3	45	300	900	0.05	50	22.5	0.1	80	0-10
DCR 150-12B	0-150	12	9.3	6.6	45	300	900	0.05	50	22.5	0.1	80	0-10
DCR 150-18B	0-150	18	14	10	45	300	900	0.05	50	22.5	0.1	80	0-10
DCR 300-1.5B	0-300	1.5	1.2	.8	90	700	2100	0.05	50	45.0	0.1	40	0-10
DCR 300-3B	0-300	3	2.3	1.65	90	700	2100	0.05	50	45.0	0.1	40	0-10
DCR 300-6B	0-300	6	4.7	3.3	90	700	2100	0.05	50	45.0	0.1	40	0-10
DCR 300-9B	0-300	9	7.3	5.5	90	700	2100	0.05	50	45.0	0.1	40	0-10
DCR 600-.75B	0-600	.75	.6	.4	180	1200	5400	0.05	50	90.0	0.1	20	0-10
DCR 600-1.5B	0-600	1.5	1.2	.83	180	1200	5400	0.05	50	90.0	0.1	20	0-10
DCR 600-3B	0-600	3	2.3	1.65	180	1200	5400	0.05	50	90.0	0.1	20	0-10
DCR 600-4.5B	0-600	4.5	3.5	2.5	180	1200	5400	0.05	50	90.0	0.1	20	0-10

NOTES: 1. With load change (NL-to-FL or FL-to-NL) and a full line voltage change combined. 2. Below 60 Hz, ripple and transient response characteristics will deteriorate by a factor of (60/x) where F is input frequency. 3. To return to  $\pm 1\%$  band on all models except 10 volt ( $\pm 3\%$ ) and 20 volt ( $\pm 20\%$ ) for a step-load change of half load-to-full load or full load-to-half load. 4. For 8 hours (after 30 min. warmup) with constant line, load and ambient temperature. 5. With 0.95%

# DCR-B Series Specifications

## Voltage Options:

190-230 Vac, add M1 to model no.  
200-240 Vac, add M2 to model no.  
210-250 Vac, add M3 to model no.  
Consult factory for modification price.

## Frequency:

49-63 Hz single phase.  
(Ripple and transient response specs apply only at 60 Hz).

## OPERATING DATA

### Ambient Operating

#### Temperature Range:

0 to +70°C

#### Storage Temperature Range:

-40°C to +85°C

#### Efficiency:

61-86% depending on model.

## Series Operation:

200 Vdc max. output (150 and 300 V models, two in series).

## Parallel Operation:

Master-slave or straight parallel;  
four units maximum in master-slave.

## Overshoot:

No overshoot at turn-on, turn-off or power failure.

## Overvoltage Protection:

Now factory installed on all DCR-B models.

## Remote Shutdown:

Remote relay, transistor or logic switching can be connected to shutdown terminals on back of supply.

## Cooling:

Convection cooled on 400 & 1800 Watt models, built-in fan on 1000 & 2100-2700 watt models.

## DCRB ACCESSORIES

### Digital Programmer:

Available for all models in DCRB series. IEEE-488 interface to GPIB Bus. Order Model 488 DAP.

### Chassis Slide (Kit):

Available for all models.

## OPTIONS

**M1:** 208 Vac  $\pm$  10% input voltage

**M2:** 220 Vac  $\pm$  10% input voltage

**M3:** 230 Vac  $\pm$  10% input voltage

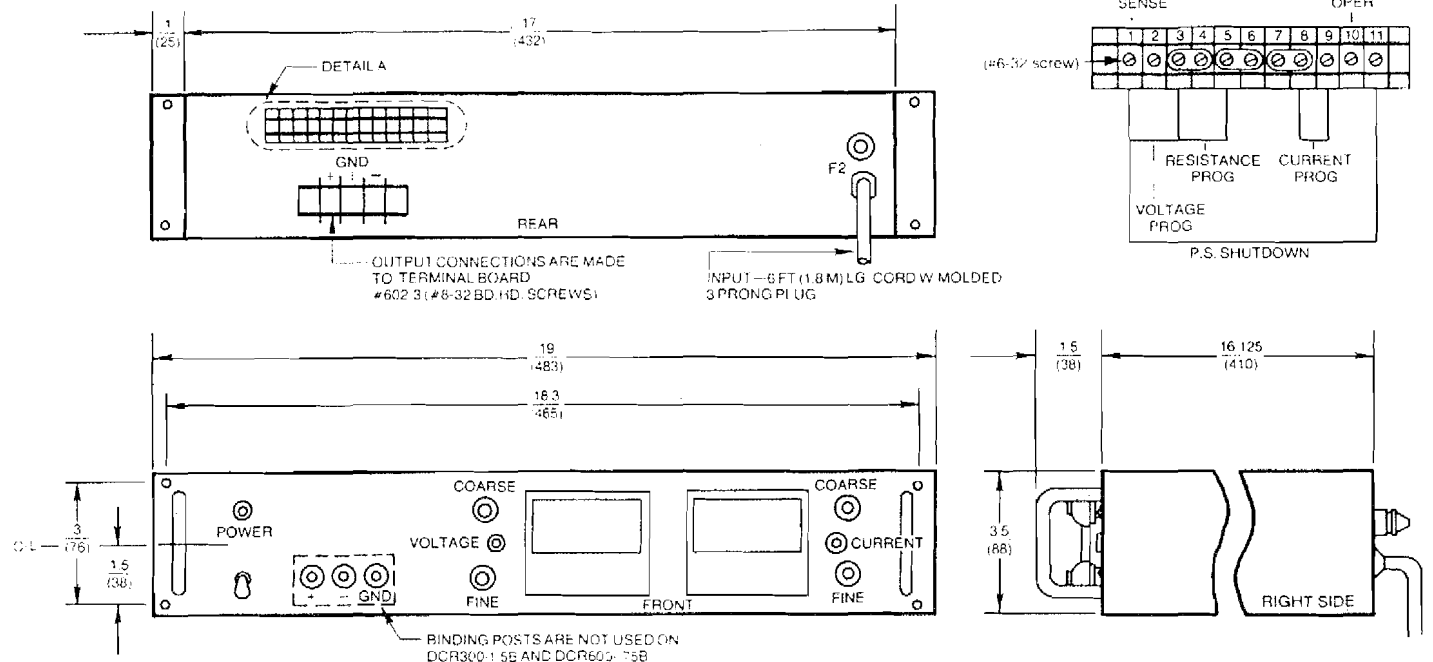
**M50:** LCD digital meters

Model	Constant Current Mode			Temp. Coeff., Current mA/°C (Typ.)	Current Drift (Typ.) <sup>2</sup> % I <sub>o</sub> Max.	Programming Constants, Current Mode		Standard Input Power (single phase, 50/60Hz)		Power Factor (Typ.)	Efficiency % <sup>6</sup>	Case Size <sup>1</sup>
	Regulation mA <sup>7</sup>	Ripple (PARB) mA <sup>8</sup> rms	Resolution % I <sub>o</sub> Max. (Typ.)			Ohms/A	V/A	Voltage Vac <sup>9</sup>	Current (Max. Aac) <sup>10</sup>			
DCR 7-300B	1500	2800	0.05	90	0.15	0.33	0-10	187-229	27.5	.62	65	V
DCR 10-40B	100	260	0.05	12	0.15	10	0-10	103-127	8.7	.65	61	VI
DCR 10-80B	200	260	0.05	24	0.15	5	0-10	103-127	16.0	.69	62	VI
DCR 10-120B	300	785	0.05	36	0.15	3.3	0-10	103-127	24.0	.67	62	IV
DCR 20-25B	63	82	0.05	7.5	0.15	16	0-10	103-127	9.4	.65	71	VI
DCR 20-50B	125	125	0.05	15	0.15	8	0-10	103-127	20.0	.62	69	VI
DCR 20-80B	200	260	0.05	24	0.15	5	0-10	103-127	30.0	.66	70	IV
DCR 20-115B	288	375	0.05	35	0.15	3.5	0-10	187-229	26.5	.60	70	IV
DCR 40-13B	33	30	0.05	3.9	0.15	30	0-10	103-127	9.8	.65	71	VI
DCR 40-25B	63	56	0.05	7.5	0.15	16	0-10	103-127	16.0	.68	79	VI
DCR 40-40B	100	90	0.05	12	0.15	10	0-10	103-127	26.8	.66	78	III
DCR 40-70B	175	157	0.05	21	0.15	6	0-10	187-229	29.6	.58	77	IV
DCR 60-9B	23	19	0.05	2.7	0.15	46	0-10	103-127	9.7	.65	75	VI
DCR 60-18B	45	38	0.05	5.4	0.15	22	0-10	103-127	19.0	.60	81	VI
DCR 60-30B	75	63	0.05	0.9	0.15	16	0-10	103-127	27.0	.68	84	III
DCR 60-45B	113	93	0.05	13.5	0.15	9	0-10	187-229	29.0	.56	80	IV
DCR 80-6B	15	12	0.05	1.8	0.15	68	0-10	103-127	8.3	.65	77	VI
DCR 80-12B	33	23	0.05	3.6	0.15	33	0-10	103-127	15.0	.65	83	VI
DCR 80-33B	83	61	0.05	9.9	0.15	12	0-10	187-229	27.2	.57	81	IV
DCR 150-3B	3	6	0.05	0.9	0.15	134	0-10	103-127	8.2	.65	74	VI
DCR 150-6B	16	12	0.05	1.8	0.15	66	0-10	103-127	15.5	.60	84	VI
DCR 150-12B	32	24	0.05	3.6	0.15	33	0-10	103-127	27.0	.69	84	III
DCR 150-18B	45	36	0.05	5.4	0.15	22	0-10	187-229	27.0	.58	83	IV
DCR 300-1.5B	4	4	0.05	0.45	0.15	270	0-10	103-127	8.9	.60	74	VI
DCR 300-3B	8	7	0.05	0.9	0.15	133	0-10	103-127	15.7	.60	82	VI
DCR 300-6B	16	14	0.05	1.8	0.15	66	0-10	103-127	27.0	.69	84	III
DCR 300-9B	23	21	0.05	2.7	0.15	44	0-10	187-229	27.4	.57	83	IV
DCR 600-.75B	2	2	0.05	0.225	0.15	530	0-10	103-127	8.9	.60	74	VI
DCR 600-1.5B	4	3	0.05	0.45	0.15	266	0-10	103-127	15.2	.60	86	VI
DCR 600-3B	8	6	0.05	0.9	0.15	133	0-10	103-127	27.4	.66	86	III
DCR 600-4.5B	12	9	0.05	1.35	0.15	89	0-10	187-229	26.8	.57	85	IV

compliance-voltage change and  $\pm$  10% line voltage change combined. 6. At full compliance voltage. 7. Optional input voltage available 208 Vac  $\pm$  10% (except 7 in. fan), option M1, 220 Vac  $\pm$  10% (option M2), and 230 Vac  $\pm$  10% (option M3). 8. At 115 or 208 Vac. 9. 7 in. units offer convection or fan cooling. 10. 0-10V available by switch on PCB. 0-10V = 0-100% I<sub>o</sub>, or 0-400 mV = 0-100% I<sub>o</sub>. 11. For 0-100% V.

**CASE I (3.5" High)**  
**CONVECTION COOLED**

Note: Dimensions are for reference only

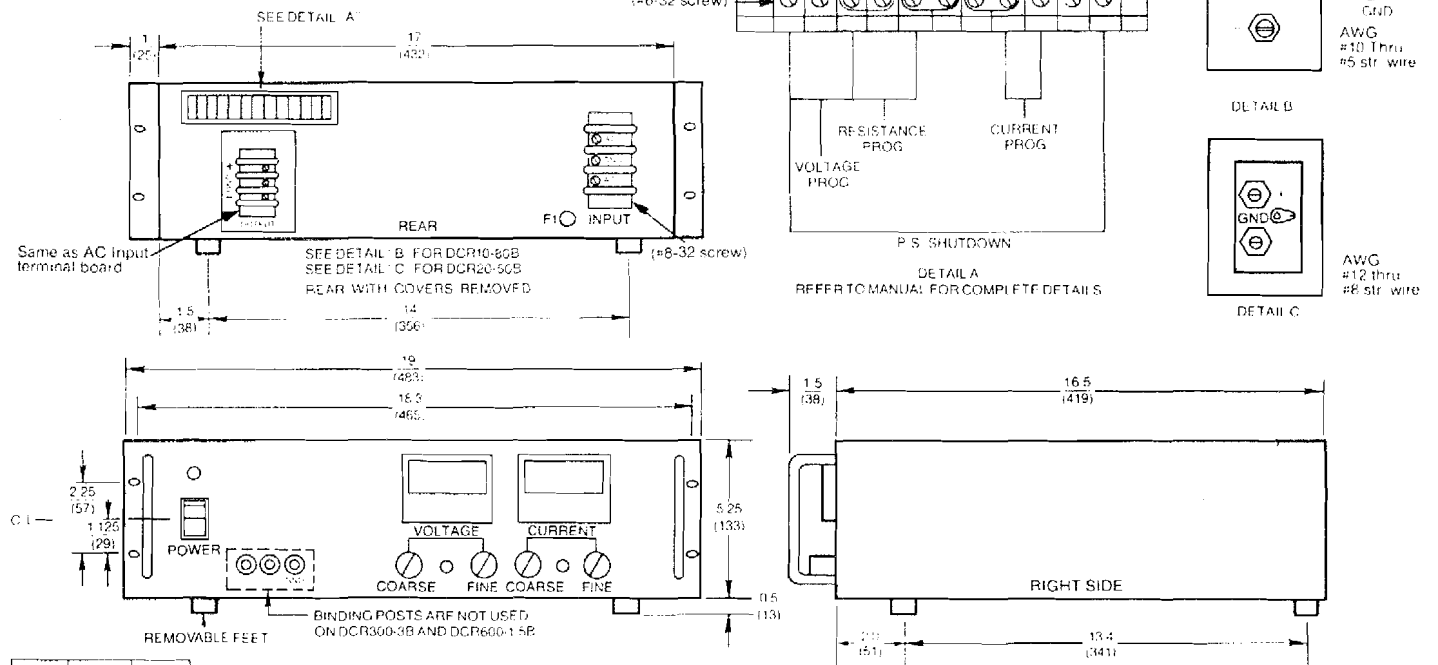


Wt:	lb	kg
	40	18.1

Note: Slide-rail option available.  
Note: All dimensions are in inches (mm)

**CASE II (5.25" High)**  
**CONVECTION COOLED**

Note: Not available after 2nd qtr., 1990

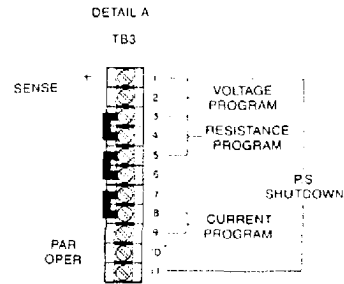
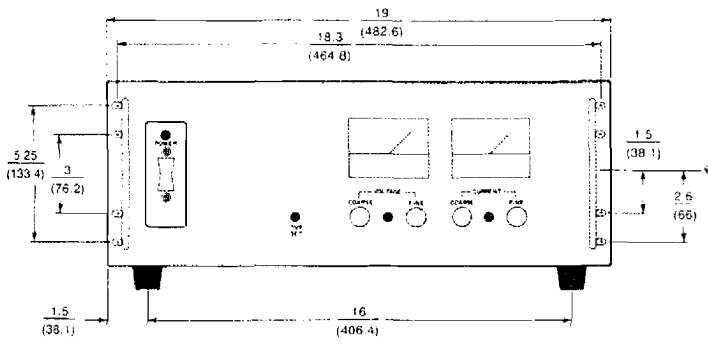
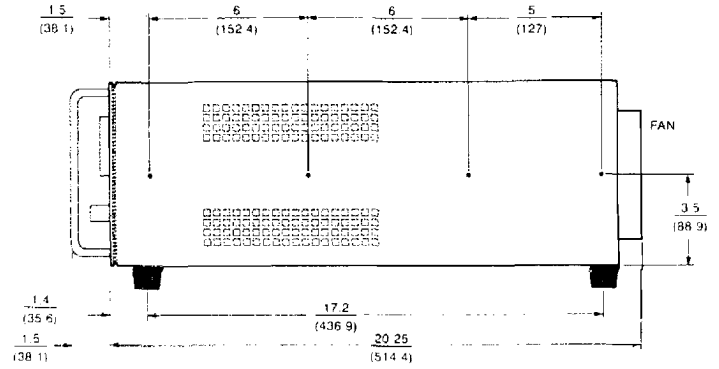
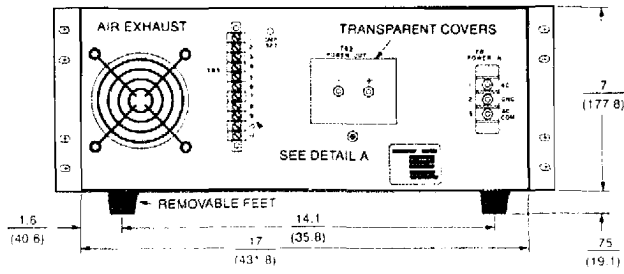


Wt:	lb	kg
	70	31.7

Note: Slide-rail option available. Note: All dimensions are in inches (mm)

# DCR-B Series Dimensional Drawings

CASE III (7" High) Convection Cooled  
CASE IV (7" High) Fan Cooled



Case	Weight	
	lb.	kg
III	105	47.6

Case	Weight	
	lb.	kg
IV	105	47.6

All dimensions are in inches  
(mm)