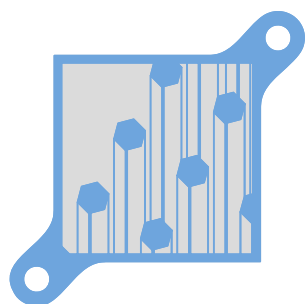




NR Series

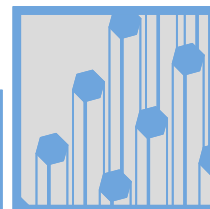
Natural Convection Heat Sink
with Mounting Tabs

ALPHA

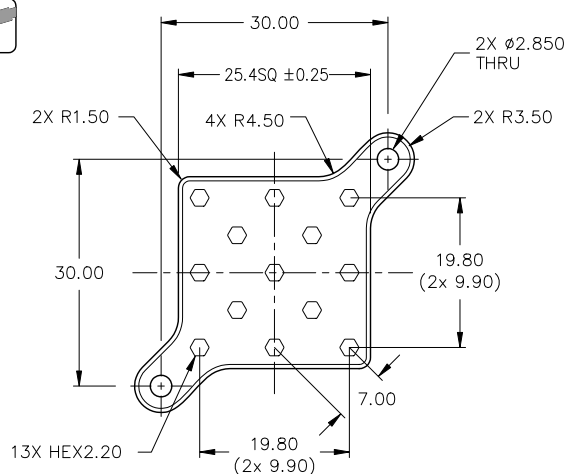
ALPHA

Natural Convection Heat Sink with Mounting Tabs

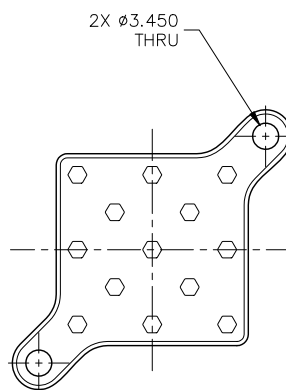
NR25



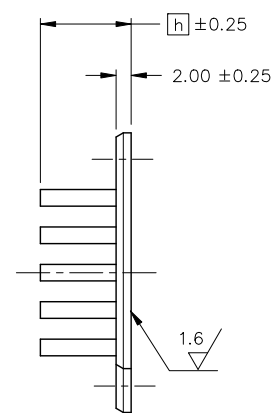
DIM



NR25-XXBC
FOR Ø2.500 ±0.05 PCB HOLES



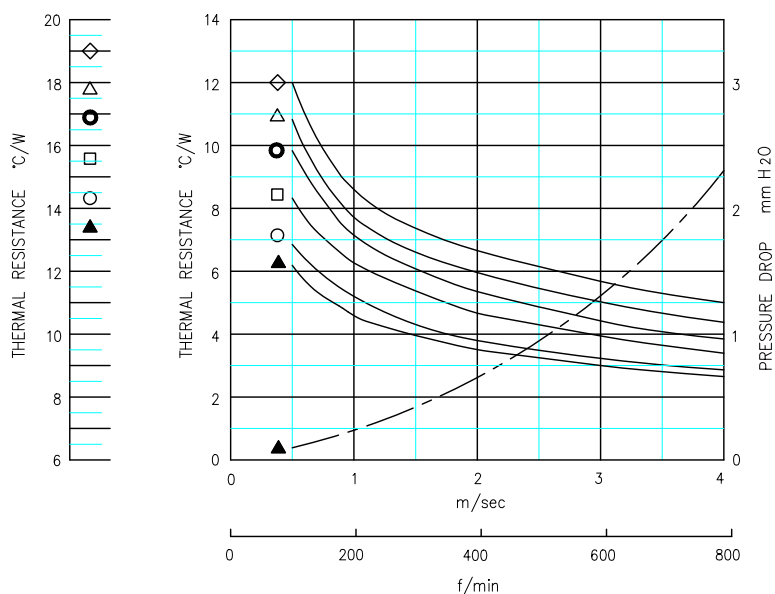
NR25-XXB
FOR Ø3.175 ±0.05 PCB HOLES



MODEL	HEIGHT [h]	WEIGHT (grams)
NR25-8BC, NR25-8B	8	4.8
NR25-10BC, NR25-10B	10	5.1
NR25-12BC, NR25-12B	12	5.4
NR25-15BC, NR25-15B	15	5.9
NR25-20BC, NR25-20B	20	6.6
NR25-25BC, NR25-25B	25	7.3

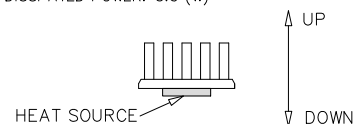
MATERIAL : A6063
FINISH : BLACK ANODIZE
DIMENSIONS : mm

DATA



- ◇ NR25-8BC, NR25-8B
- △ NR25-10BC, NR25-10B
- NR25-12BC, NR25-12B
- NR25-15BC, NR25-15B
- NR25-20BC, NR25-20B
- ▲ NR25-25BC, NR25-25B

- DUCTED CONDITION
DUMMY HEATER SIZE: 12.7 SQ
THERMAL RESISTANCE
PRESSURE DROP
- NATURAL CONVECTION
DUMMY HEATER SIZE: 12.7 SQ
DISSIPATED POWER: 3.5 (W)



NOTE ORIENTATION OF HEAT SINK USED
FOR NATURAL CONVECTION TESTING

- BASED ON ALPHA'S STANDARD TEST PROCEDURE.
REFER TO TECHNICAL INFORMATION.

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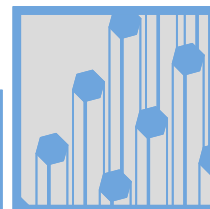
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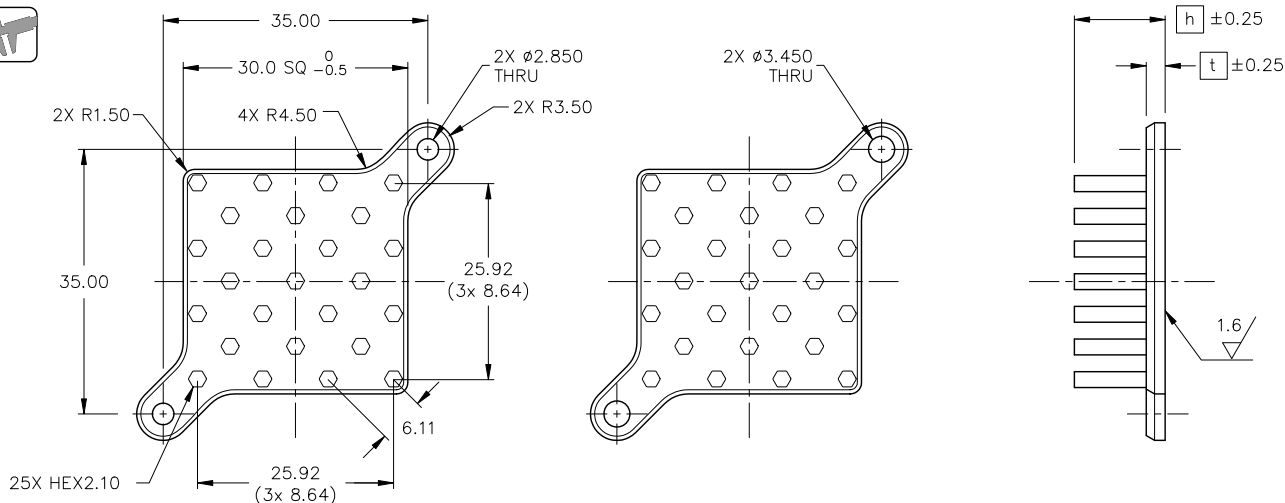
ALPHA

Natural Convection Heat Sink with Mounting Tabs

NR30



DIM



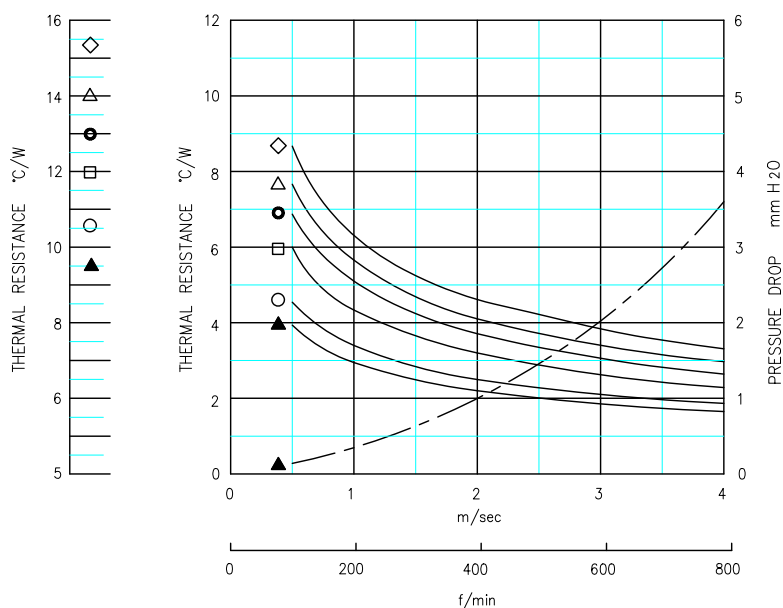
NR30-XXBC
FOR $\varnothing 2.500 \pm 0.05$ PCB HOLES

NR30-XXB
FOR $\varnothing 3.175 \pm 0.05$ PCB HOLES

MODEL	HEIGHT [h]	THICKNESS [t]	WEIGHT (grams)
NR30-8BC, NR30-8B	8	2.00	6.8
NR30-10BC, NR30-10B	10	2.50	8.5
NR30-12BC, NR30-12B	12		9.0
NR30-15BC, NR30-15B	15		9.8
NR30-20BC, NR30-20B	20		11.1
NR30-25BC, NR30-25B	25	2.50	12.4
NR30-[h]BC, NR30-[h]B	$h \leq 8$	2.00	-
	$8 < h$	2.50	-

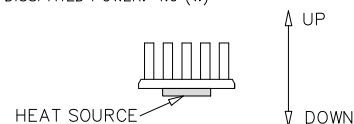
MATERIAL : A6063
FINISH : BLACK ANODIZE
DIMENSIONS : mm

DATA



◇ NR30-8BC, NR30-8B
△ NR30-10BC, NR30-10B
● NR30-12BC, NR30-12B
□ NR30-15BC, NR30-15B
○ NR30-20BC, NR30-20B
▲ NR30-25BC, NR30-25B

● DUCTED CONDITION
DUMMY HEATER SIZE: 12.7 SQ
THERMAL RESISTANCE
PRESSURE DROP
● NATURAL CONVECTION
DUMMY HEATER SIZE: 12.7 SQ
DISSIPATED POWER: 4.9 (W)



NOTE ORIENTATION OF HEAT SINK USED
FOR NATURAL CONVECTION TESTING

■ BASED ON ALPHA'S STANDARD TEST PROCEDURE.
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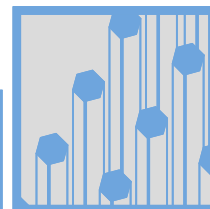
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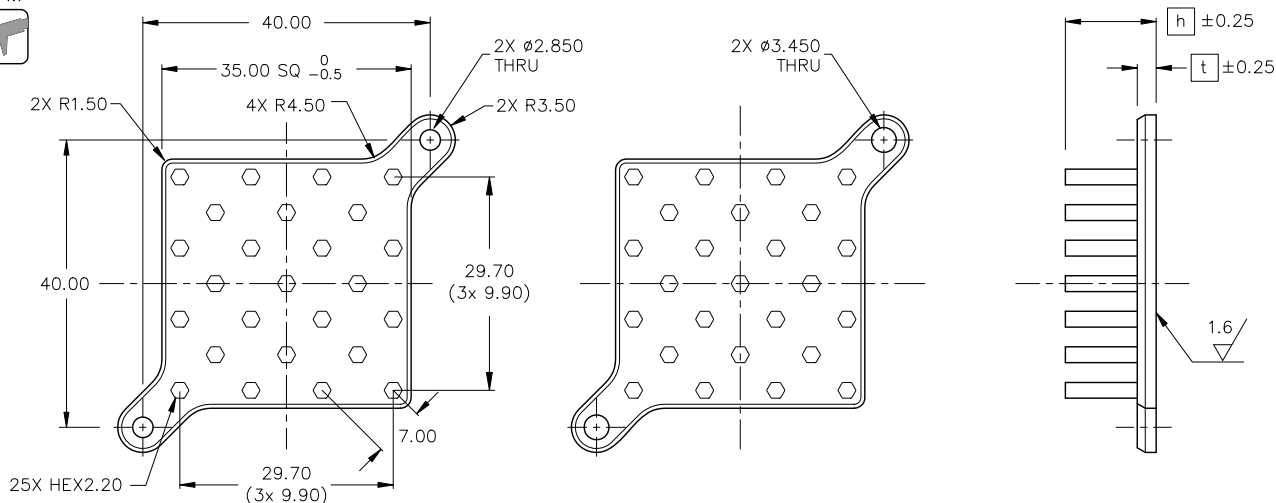
ALPHA

Natural Convection Heat Sink with Mounting Tabs

NR35



DIM



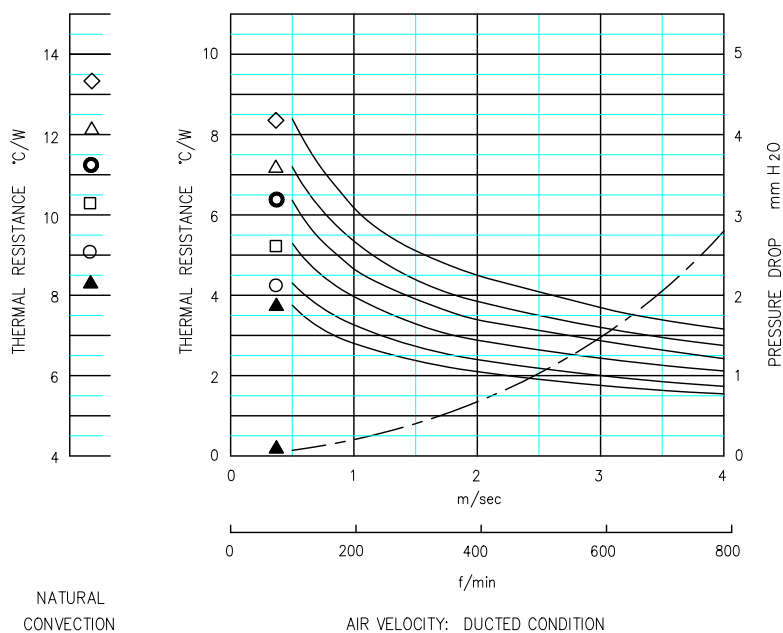
NR35-XXBC
FOR $\phi 2.500 \pm 0.05$ PCB HOLES

NR35-XXB
FOR $\phi 3.175 \pm 0.05$ PCB HOLES

MODEL	HEIGHT h	THICKNESS t	WEIGHT (grams)
NR35-8BC, NR35-8B	8	2.00	8.7
NR35-10BC, NR35-10B	10	3.00	12.5
NR35-12BC, NR35-12B	12		13.1
NR35-15BC, NR35-15B	15		13.9
NR35-20BC, NR35-20B	20		15.3
NR35-25BC, NR35-25B	25		16.7
NR35- h BC, NR35- h B	$h \leq 8$	2.00	-
	$8 < h$	3.00	-

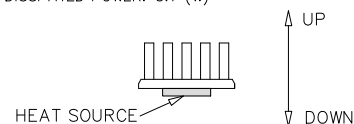
MATERIAL : A6063
FINISH : BLACK ANODIZE
DIMENSIONS : mm

DATA



- ◇ NR35-8BC, NR35-8B
- △ NR35-10BC, NR35-10B
- NR35-12BC, NR35-12B
- NR35-15BC, NR35-15B
- NR35-20BC, NR35-20B
- ▲ NR35-25BC, NR35-25B

- DUCTED CONDITION
DUMMY HEATER SIZE: 12.7 SQ
THERMAL RESISTANCE
PRESSURE DROP
- NATURAL CONVECTION
DUMMY HEATER SIZE: 12.7 SQ
DISSIPATED POWER: 5.7 (W)



NOTE ORIENTATION OF HEAT SINK USED
FOR NATURAL CONVECTION TESTING

- BASED ON ALPHA'S STANDARD TEST PROCEDURE.
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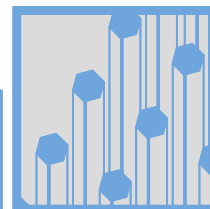
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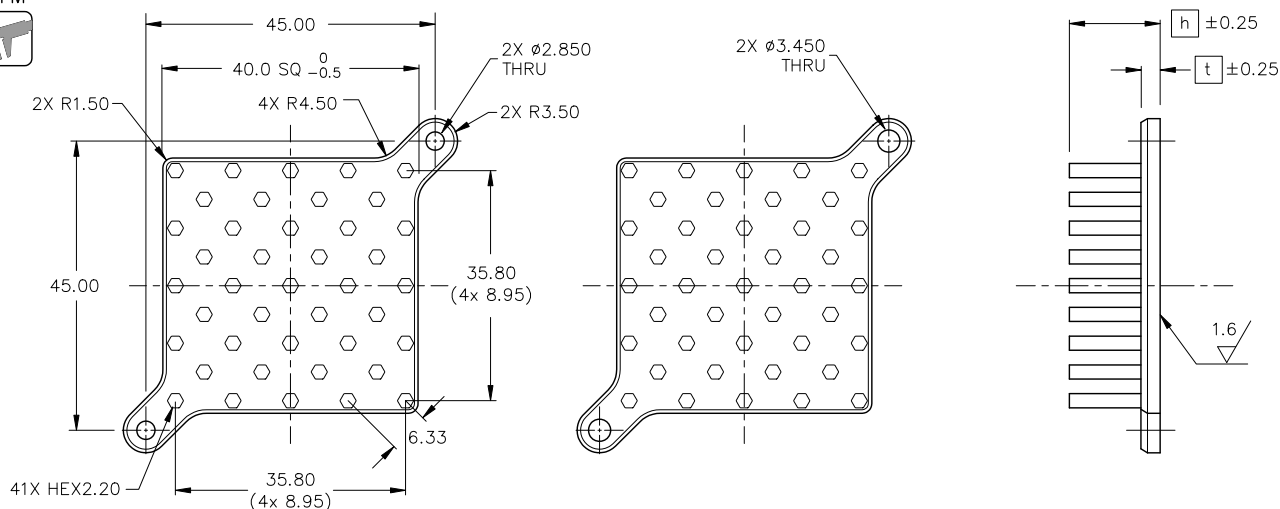
ALPHA

Natural Convection Heat Sink with Mounting Tabs

NR 40



DIM



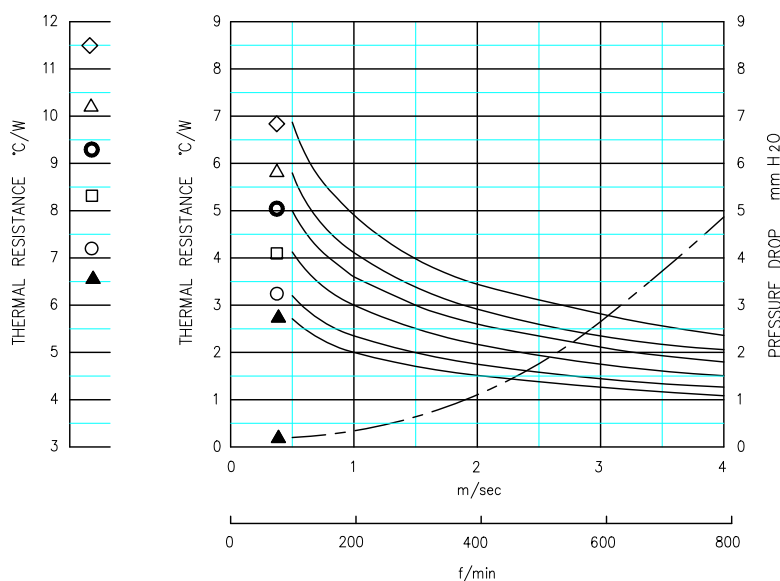
NR40-XXBC
FOR $\phi 2.500 \pm 0.05$ PCB HOLES

NR40-XXB
FOR $\phi 3.175 \pm 0.05$ PCB HOLES

MODEL	HEIGHT [h]	THICKNESS [t]	WEIGHT (grams)
NR40-8BC, NR40-8B	8	2.50	13.8
NR40-10BC, NR40-10B	10	3.00	16.7
NR40-12BC, NR40-12B	12		17.7
NR40-15BC, NR40-15B	15		19.0
NR40-20BC, NR40-20B	20		21.4
NR40-25BC, NR40-25B	25		23.7
NR40-[h]BC, NR40-[h]B	[h] ≤ 8	2.50	-
	8 < [h]	3.00	-

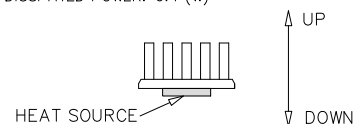
MATERIAL : A6063
FINISH : BLACK ANODIZE
DIMENSIONS : mm

DATA



◇ NR40-8BC, NR40-8B
△ NR40-10BC, NR40-10B
● NR40-12BC, NR40-12B
□ NR40-15BC, NR40-15B
○ NR40-20BC, NR40-20B
▲ NR40-25BC, NR40-25B

● DUCTED CONDITION
DUMMY HEATER SIZE: 12.7 SQ
THERMAL RESISTANCE
PRESSURE DROP
● NATURAL CONVECTION
DUMMY HEATER SIZE: 12.7 SQ
DISSIPATED POWER: 6.4 (W)



NOTE ORIENTATION OF HEAT SINK USED
FOR NATURAL CONVECTION TESTING

■ BASED ON ALPHA'S STANDARD TEST PROCEDURE.
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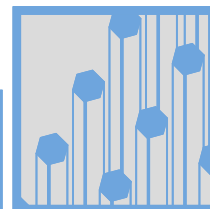
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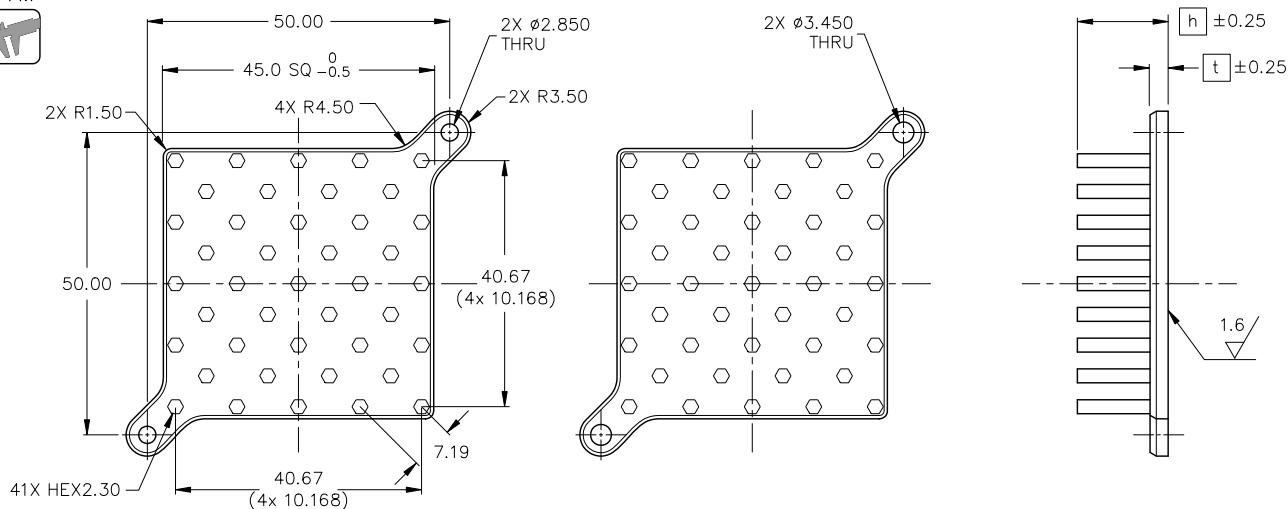
ALPHA

Natural Convection Heat Sink with Mounting Tabs

NR45



DIM



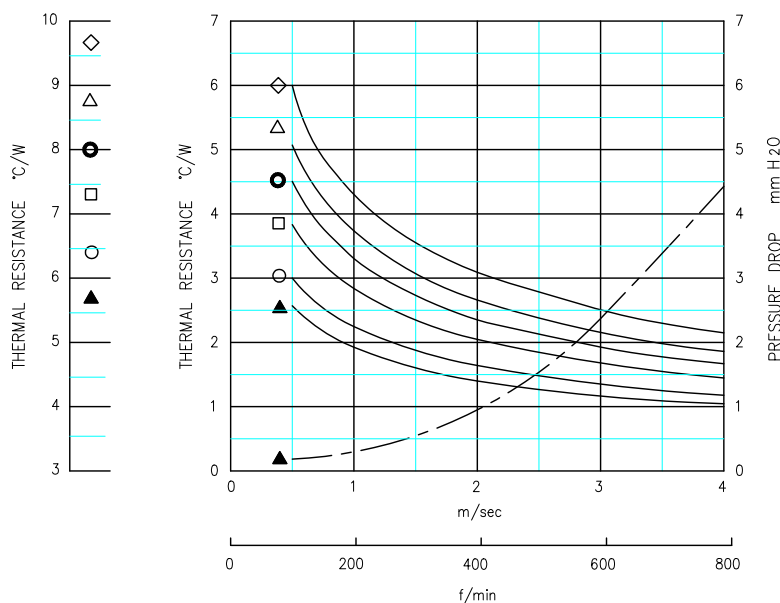
NR45-XXBC
FOR $\phi 2.500 \pm 0.05$ PCB HOLES

NR45-XXB
FOR $\phi 3.175 \pm 0.05$ PCB HOLES

MODEL	HEIGHT [h]	THICKNESS [t]	WEIGHT (grams)
NR45-8BC, NR45-8B	8	2.50	16.8
NR45-10BC, NR45-10B	10	3.00	20.4
NR45-12BC, NR45-12B	12		21.4
NR45-15BC, NR45-15B	15		23.0
NR45-20BC, NR45-20B	20		25.5
NR45-25BC, NR45-25B	25		28.0
NR45-[h]BC, NR45-[h]B	[h] ≤ 8	2.50	-
	8 < [h]	3.00	-

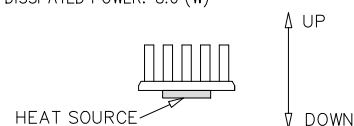
MATERIAL : A6063
FINISH : BLACK ANODIZE
DIMENSIONS : mm

DATA



◇ NR45-8BC, NR45-8B
△ NR45-10BC, NR45-10B
● NR45-12BC, NR45-12B
□ NR45-15BC, NR45-15B
○ NR45-20BC, NR45-20B
▲ NR45-25BC, NR45-25B

● DUCTED CONDITION
DUMMY HEATER SIZE: 12.7 SQ
THERMAL RESISTANCE
PRESSURE DROP
● NATURAL CONVECTION
DUMMY HEATER SIZE: 12.7 SQ
DISSIPATED POWER: 8.0 (W)



NOTE ORIENTATION OF HEAT SINK USED
FOR NATURAL CONVECTION TESTING

BASED ON ALPHA'S STANDARD TEST PROCEDURE.
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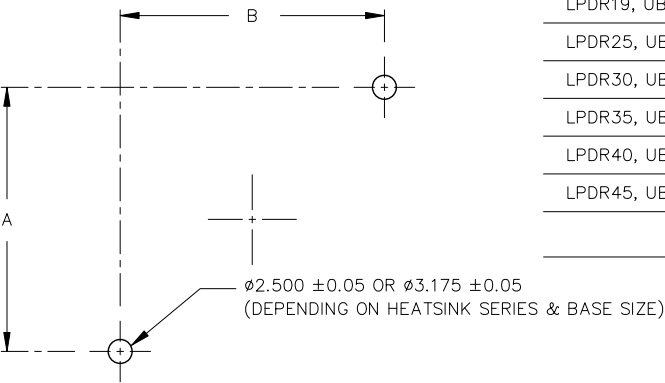
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REF



PCB HOLE LAYOUT



LPDR15 AND UBR15	18.0	18.0
LPDR19, UBR19 AND SR19	22.0	22.0
LPDR25, UBR25, NR25 AND SR25	30.0	30.0
LPDR30, UBR30, NR30 AND SR30	35.0	35.0
LPDR35, UBR35, NR35 AND SR35	40.0	40.0
LPDR40, UBR40, NR40 AND SR40	45.0	45.0
LPDR45, UBR45 AND NR45	50.0	50.0
MODEL	A	B