

# IBM BladeCenter Product Line for 20 amp environments

## 20 amp/208vac power planning

Some data center environments lend themselves to less than optimal power configurations. This can occur particularly in co-locations where power drops are charged per outlet and are disproportionately more expensive for higher amperage drops, as well as locations with dated power and cooling designs.

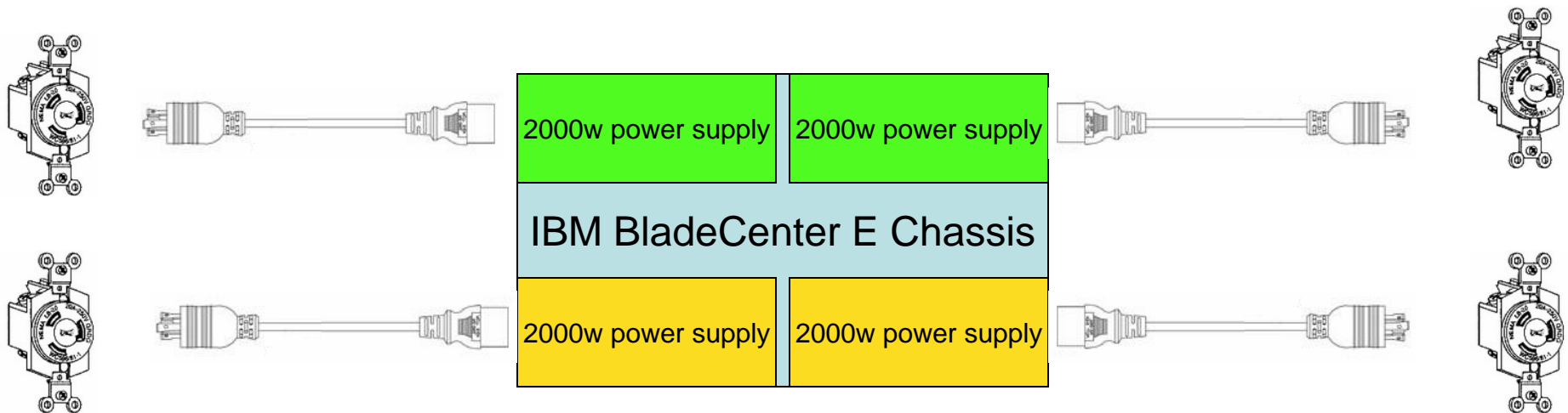
This document is intended to show how to take each of the IBM BladeCenter chassis models and connect them up in an environment consisting only of 20amp circuits and outlets.

For purposes of this document, all outlets are assumed to be NEMA L6-20R outlets on their own circuit breakers, and all voltage/amperage calculations are based on 208vac. Other 20amp outlet types and associated cords can certainly be used, as well as variation on exact voltage worldwide.

A reminder – in the United States, UL de-rates all power cords and outlets by 20%, so that 20amp circuit is only rated for 16amps of service.

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# BladeCenter E Chassis 20amp Power Overview



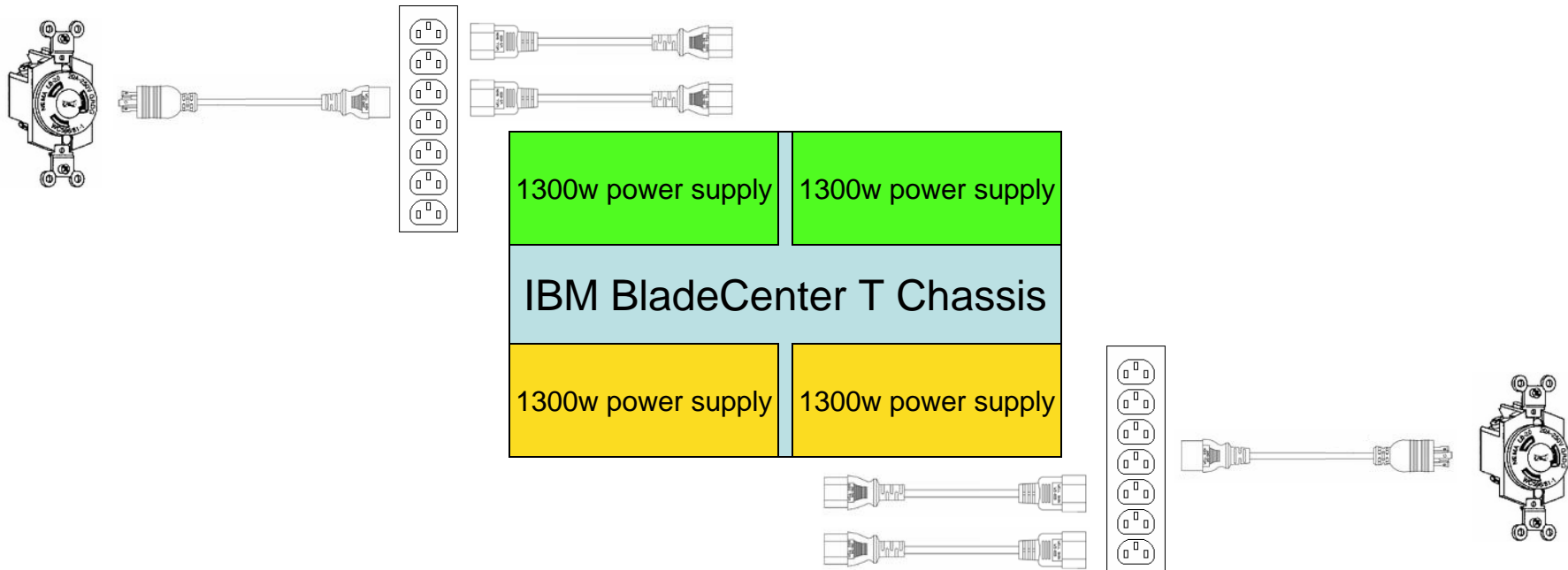
Requires:

4x C19 to L6-20P line cords, such as IBM SKU 40K9772

4x L6-20R receptacles, each it's own 20amp breaker

9.6amps (of 16amps available) max used per circuit

# BladeCenter T Chassis 20amp AC Power Overview



## Requires:

4x C13 to C14 line cords (included with BC-T AC chassis)

2x 20amp PDUs, such as IBM SKU 39Y8951

2x L6-20R outlets on separate 20amp circuit breakers

12.5a max used per PDU/circuit (of 16a available)

# BladeCenter H Chassis 20amp Power Overview



Requires:

2x triple C20 BC-H power cords, SKU 25R5785

6x C19 to L6-20P line cords, such as IBM SKU 40K9772

6x L6-20R receptacles, each it's own 20amp breaker

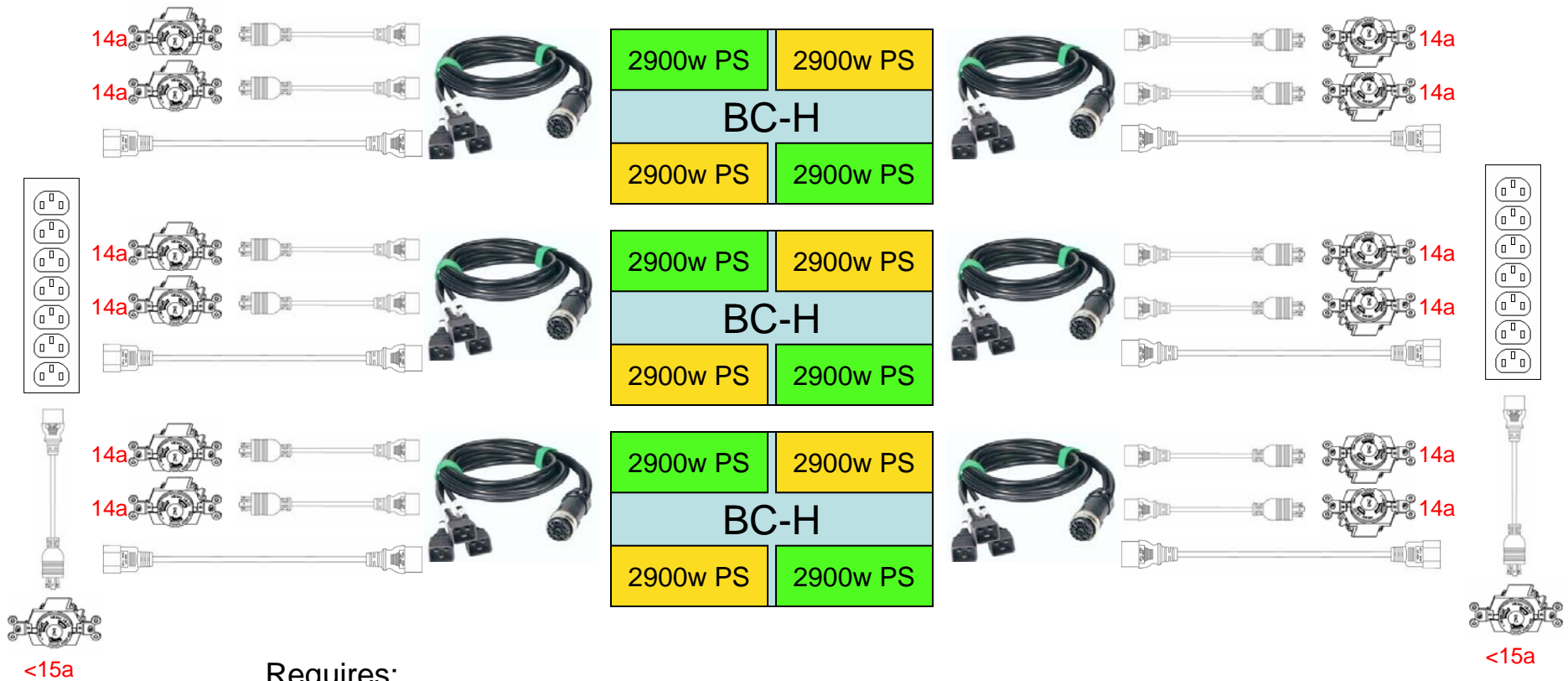
4 circuits will use max 14amps (of 16amps available)

2 circuits will use max <5.5amps (of 16amps available)

While the lower amp connectors show 5.5amps, 4.6amps is the max power actually drawn

If deploying multiple chassis, there are ways to put 3x of the 5.5a lines into a single 20a circuit.

# BladeCenter H Chassis - multiples 20amp Power Overview



## Requires:

- 6x triple C20 BC-H power cords, SKU 25R5785
- 12x C19 to L6-20P line cords, such as IBM SKU 40K9772
- 6x C19 to C14 line cords
- 2x 20amp PDUs, such as IBM SKU 39Y8951
- 14x L6-20R receptacles, each it's own 20amp breaker

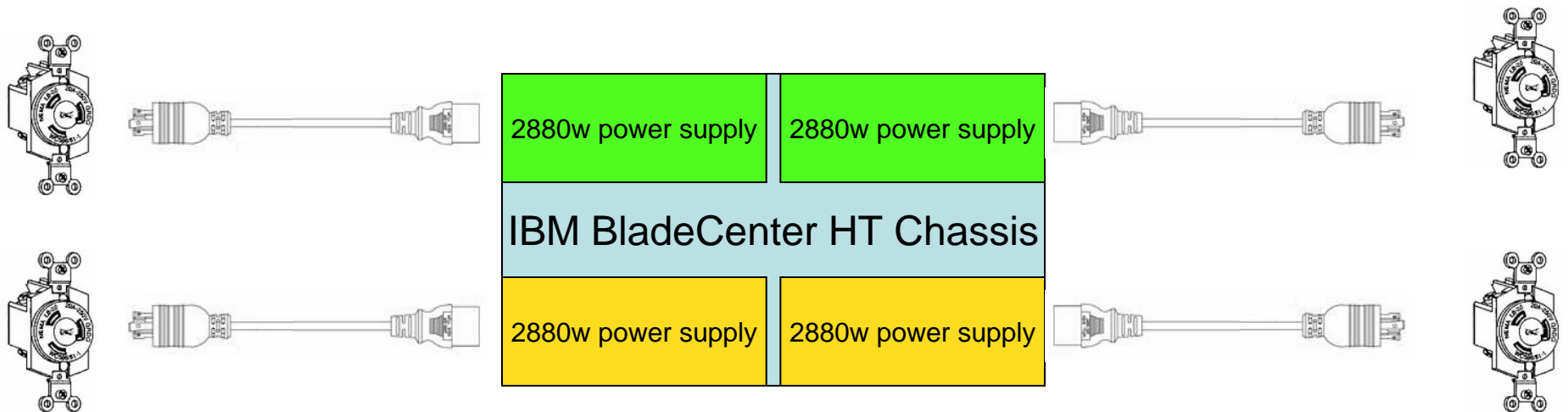
12 circuits will use max 14amps (of 16amps available)

2 circuits will use max <16.5amps (of 16amps available)

While the lower amp connectors show 5.5amps, 4.6amps is the max power actually drawn, making this really under 15amps

# BladeCenter HT Chassis

## 20amp AC Power Overview



Requires:

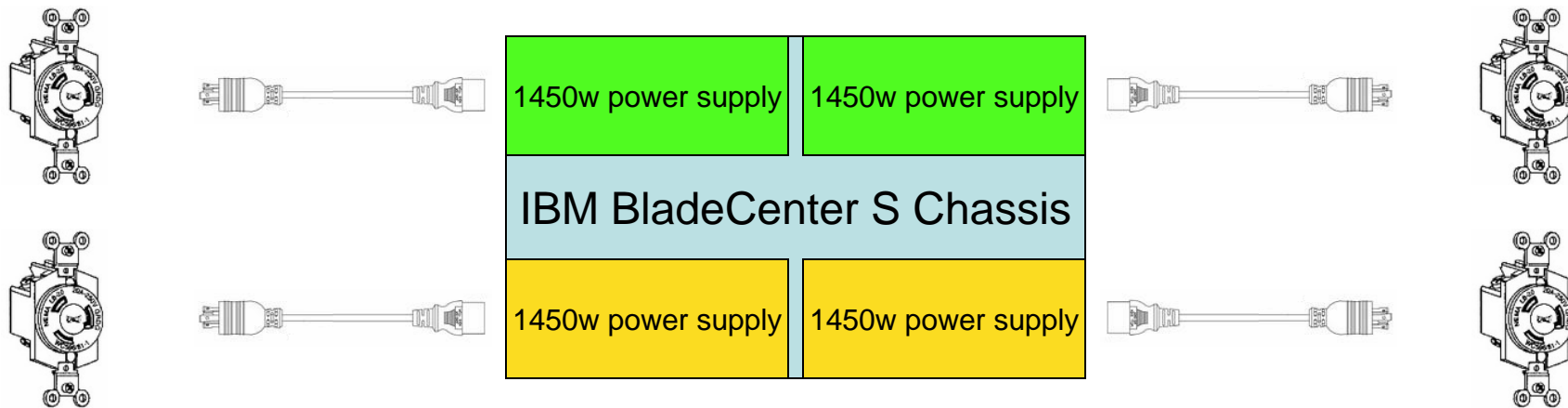
4x C19 to L6-20P line cords, such as IBM SKU 40K9772

4x L6-20R receptacles, each it's own 20amp breaker

14amps (of 16amps available) max used per circuit

# BladeCenter S Chassis

## 20amp 208v Power Overview



Requires:

4x C19 to L6-20P line cords, such as IBM SKU 40K9772

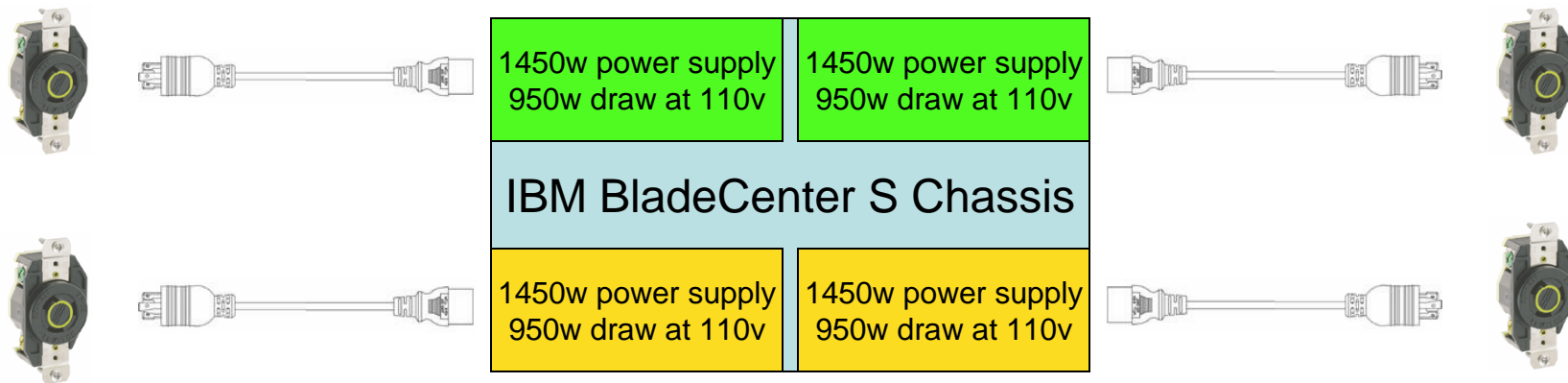
4x L6-20R receptacles, ideally each on their own breaker

Each power cord will use max 7 amps (of 16 amps available on the circuit)

# BladeCenter S Chassis

## 20amp 110v Power Overview

*Since this is the only chassis which can*



Requires:

4x C19 to L5-20P line cords, such as IBM SKU 41Y9222

4x L5-20R receptacles, each on their own breaker

Each power cord will normally use around 9 amps (of 16 amps available on the circuit). Still dedicate a 20amp circuit to each outlet, though.

This could be done with NEMA 5-20 outlets and cords as well, but it's not recommended.

Due to low line voltage draws, 15amp circuits aren't recommended.

